

Global Working Hours

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This Project

1) A New Database on Global Working Hours

- Compile and harmonize 2,200 surveys fielded in 160 countries representative of 97% of the world's population
- Long time series (20+ years) in 86 countries

2) Worldwide Working Hours Patterns

- By age, gender, and development

3) Working Hours Determinants

- Young (age 15-19): School attendance
- Elderly (age 60+): Pension coverage
- Prime-Age: Labor taxes, social transfers, hours regulations

Literature

Working Hours and Development (Bick et al. AER 2018, 2022; Francis & Ramey AEJ 2009; Andreeescu et al. 2025)

- Bick et al. 2018: 49 countries = 23% of world population.
- This paper: 160 countries = 97% of world population.
- Substantively different conclusions.

Working Hours and Gender (Goldin 1990, 2024; Gottlieb et al. 2024; Ngai et al. 2024)

- Great gender reshuffling of work hours from men to women.

Working Hours and Public Policy (Prescott 2004)

- First global database of labor taxes, transfers, and regulations.

A. Harmonized database of 2,200 country-year surveys

- 1) International Labor Organization (ILO):** gathers and harmonizes labor force surveys since 1990. First external sharing.
- 2) World Bank** global survey databases: I2D2, Global Monitoring Database, Global Labor Database.
- 3) Other sources:** EU-LFS for Europe, Luxembourg Income Study surveys, IPUMS International censuses, country-specific sources.

B. Public policy variables: Recently created macro labor tax data (Bachas et al. 2022), government spending by category (Gethin 2024), hours regulations (World Bank).

Definition and Variables

Working Hours: Actual hours worked in the past 7 days at all **jobs**

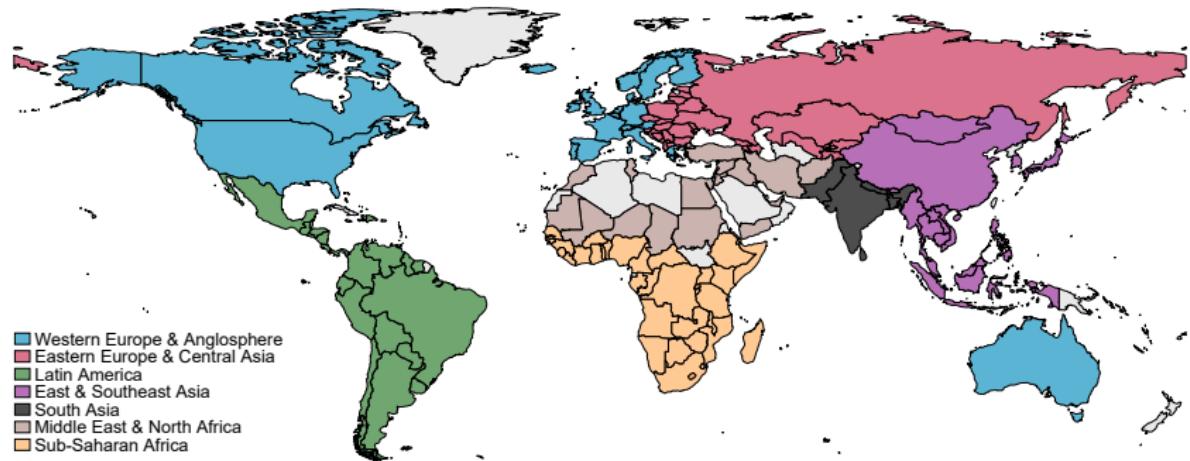
Jobs include all paid jobs (employees+self-employed) and home-production of goods (but not home-produced services)

= **All GDP-producing activities.**

- Includes informal agricultural work
- Excludes unpaid childcare, elderly care, cooking, cleaning, etc.

Variables: Age, gender, school attendance, labor force status, formality, industrial sector, hours, rural/urban, wages and self-employment income.

Data Coverage



Largest missing countries: Algeria (pop. 32m), Saudi Arabia (27m), North Korea (22m), Taiwan (21m), Cuba (9m).

Seasonality

Important concern: not all surveys cover all months of the year.

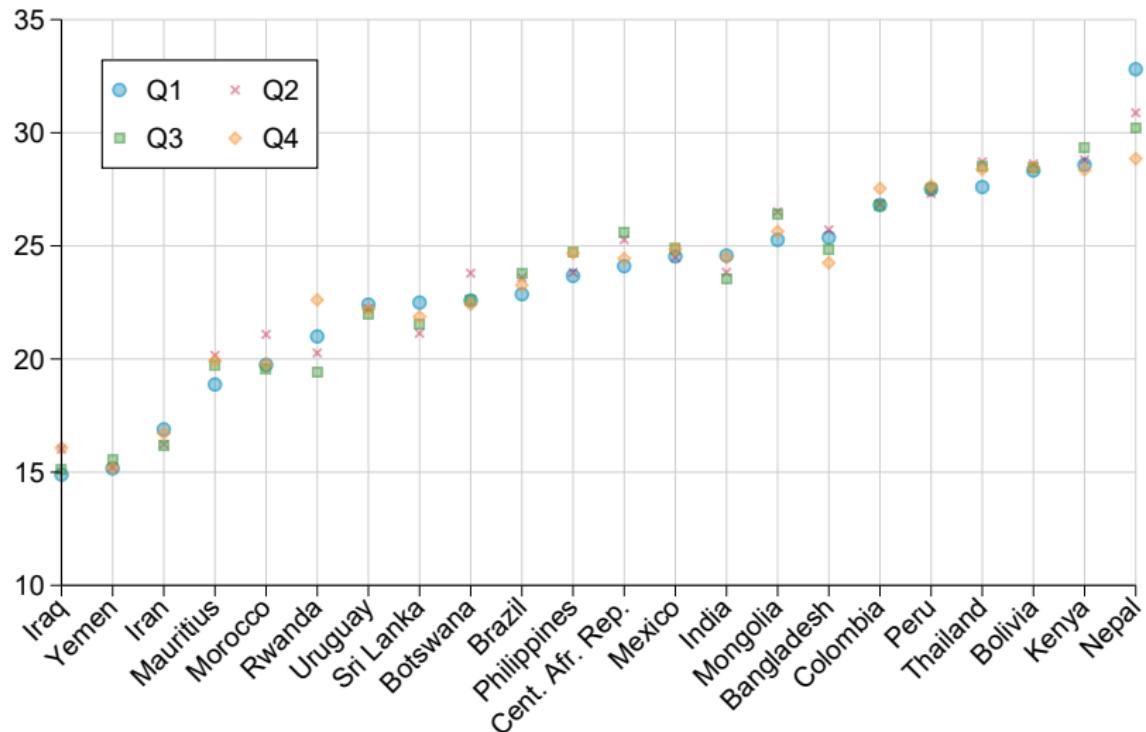
Two potential sources of bias:

- 1) Agricultural calendar (poorer countries)
- 2) Holidays (richer countries)

How important is seasonality?

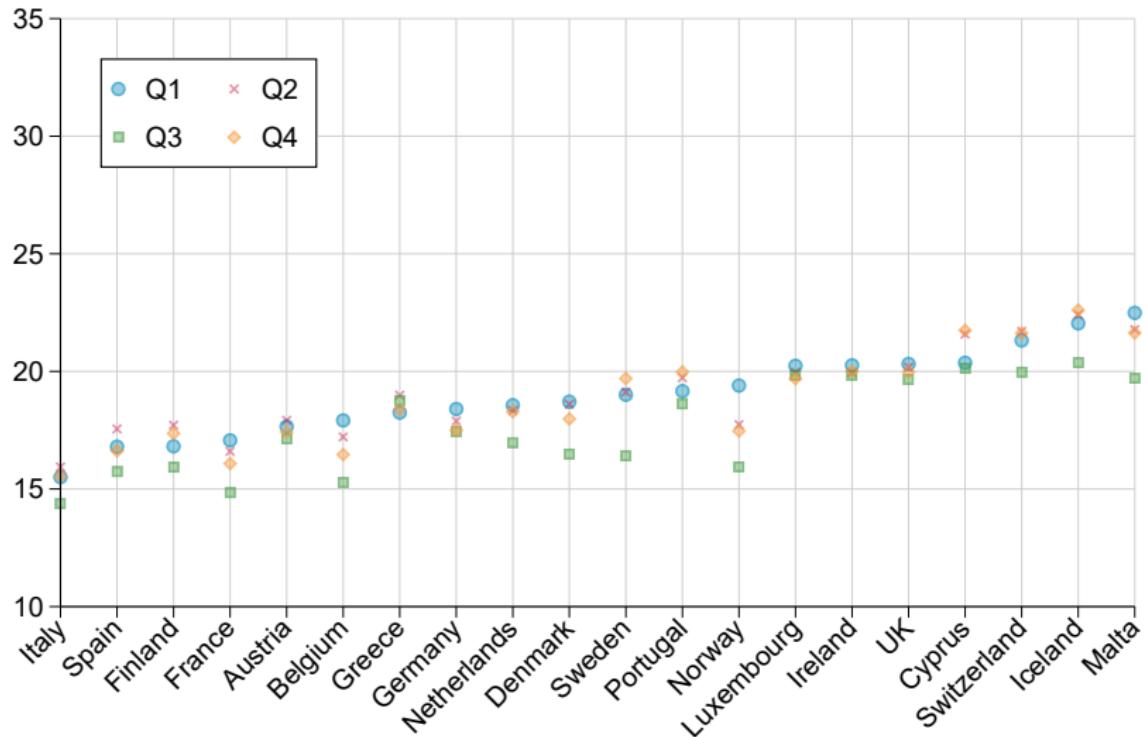
→ Study quarterly fluctuations in hours worked in 80 countries with full-year coverage and data on month of interview.

Seasonality: Hours by Quarter, Developing Countries



Seasonality: Hours by Quarter, Western Europe

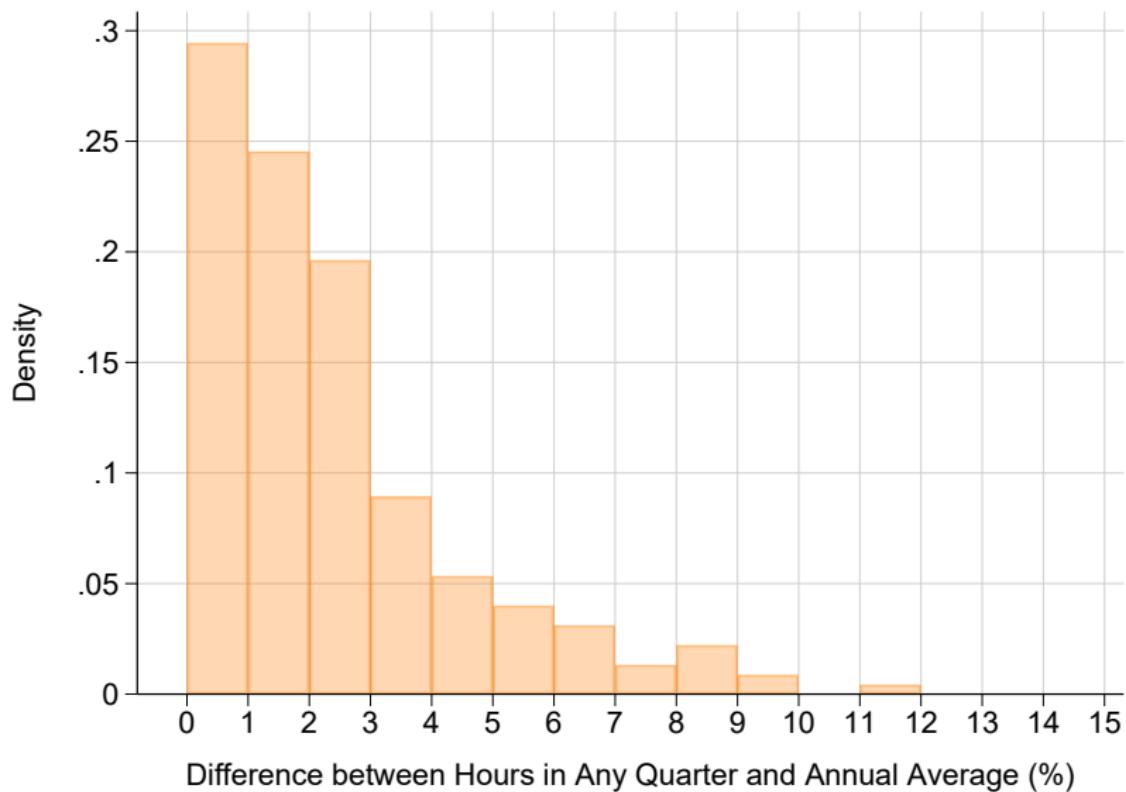
Eastern Europe



Seasonal Fluctuations in Hours Are Typically <5%

Correlations

Distribution of Quarterly Working Hours Gaps from Annual Average



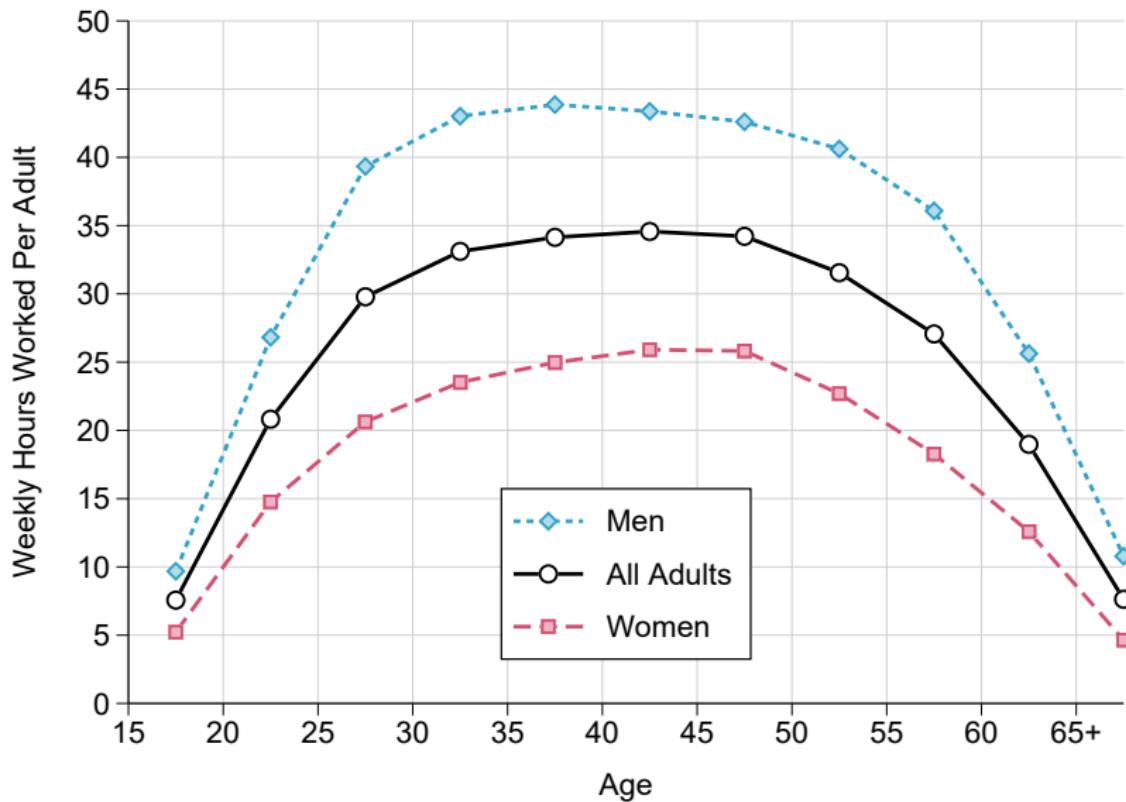
Worldwide Working Hours

Global Working Hours: worldwide distribution of weekly hours worked among all adults aged 15+.

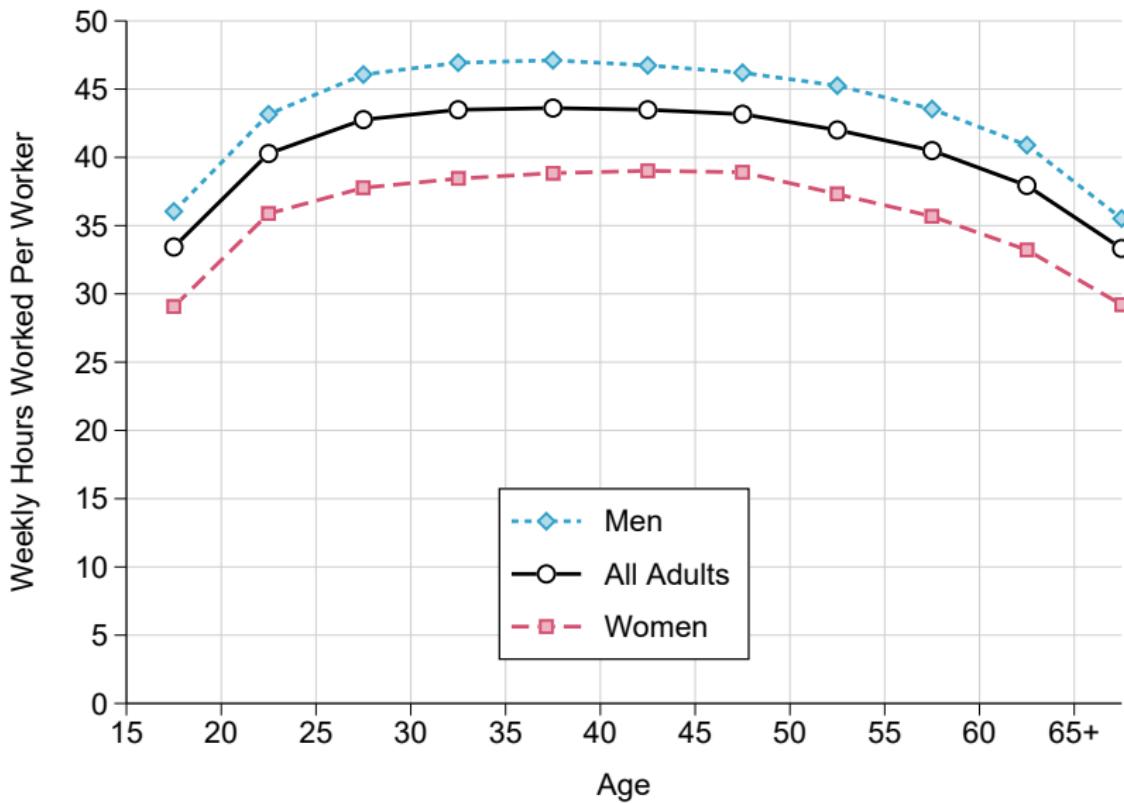
Main findings:

- 1) Steep bell-shaped working hours over the life cycle.
- 2) Women supply 35% of global work hours.
- 3) Life-cycle and gender gaps primarily on the extensive margin.

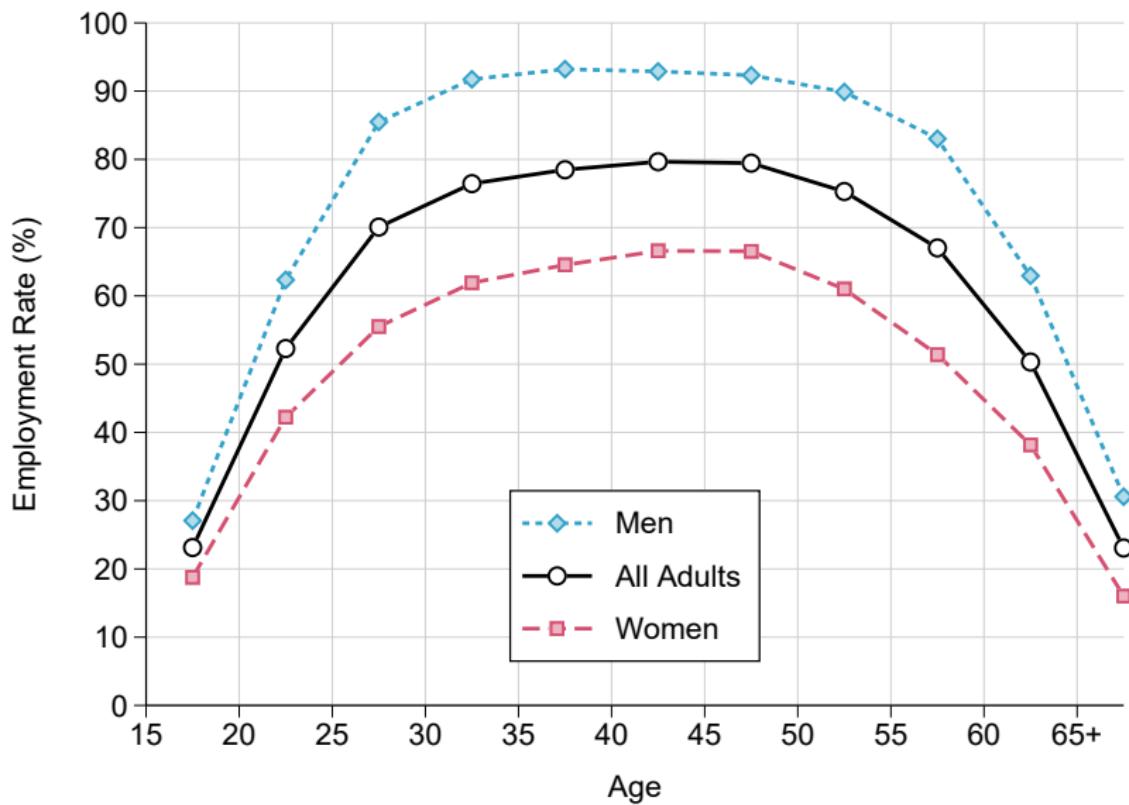
Global Hours per Adult by Age and Gender



Global Hours per Worker by Age and Gender



Global Employment by Age and Gender



Global Working Hours

Table 1: Global Hours Worked by Age and Gender

	By Gender			By Age		
	All	Men	Women	Young	Prime-Age	Elderly
Hours per Adult	24.5	31.7	17.4	7.5	30.6	10.9
Hours per Worker	41.5	44.6	37.0	33.3	42.6	35.5
Employment	59.2%	71.2%	47.6%	23.0%	72.2%	31.0%

Young = age 15-19, Prime-age = age 20-59, Elderly = age 60+

Aggregate Working Hours Over the Course of Development

Literature: Hours Worked Decline with Development.

- 1) Francis & Ramey 2009: United States 1900-2010.
- 2) Bick et al. 2018: 49 countries = 23% of world population.

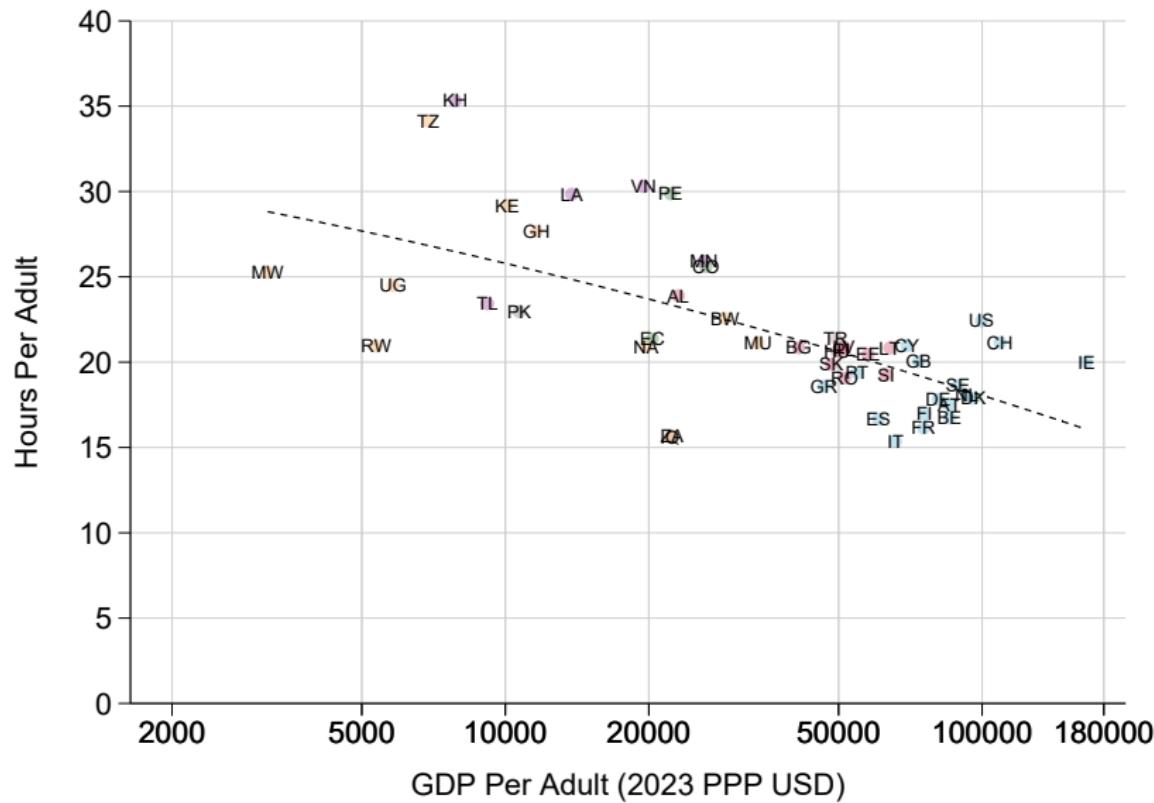
Revisit this Relationship:

- 1) In a cross-section of 160 countries ($\approx 97\%$ world population)
- 2) In a long panel of 86 countries.

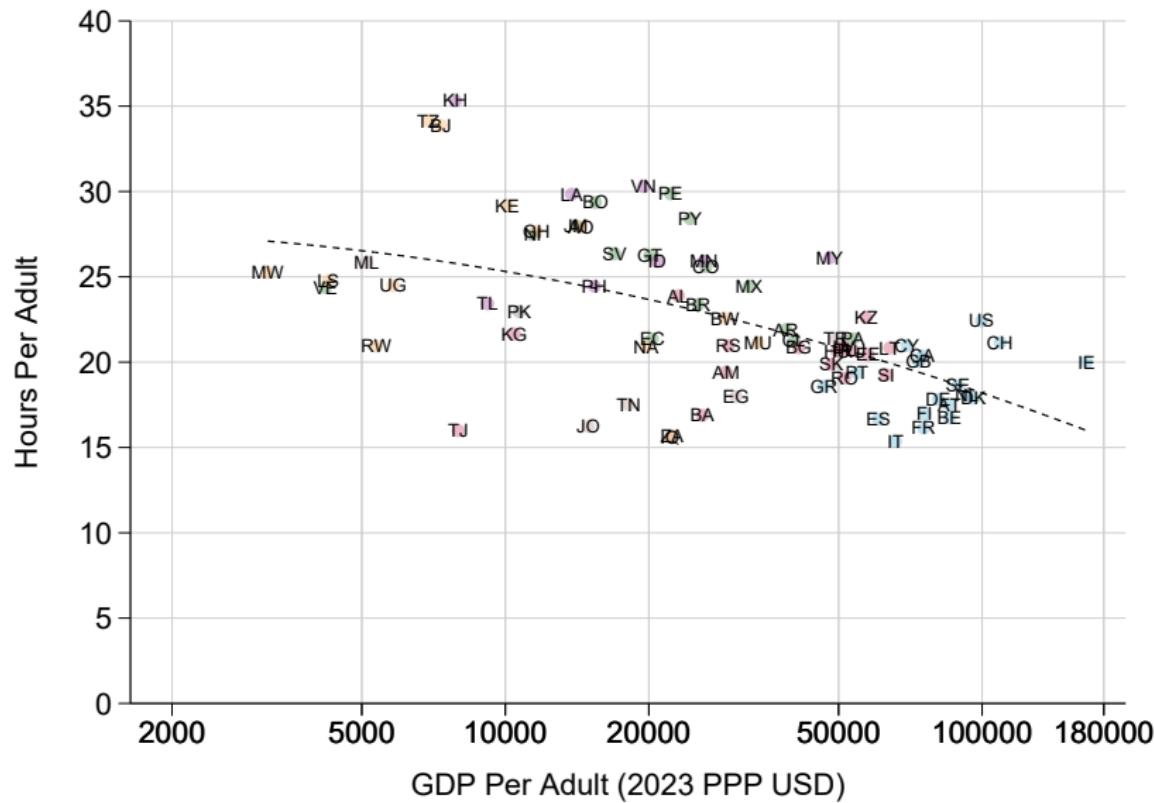
Main Findings:

- 1) Hours per adult do not decline with development.
- 2) Employment rates flat with development.
- 3) Hours per worker bell-shaped due to shift from agriculture to industry and services.

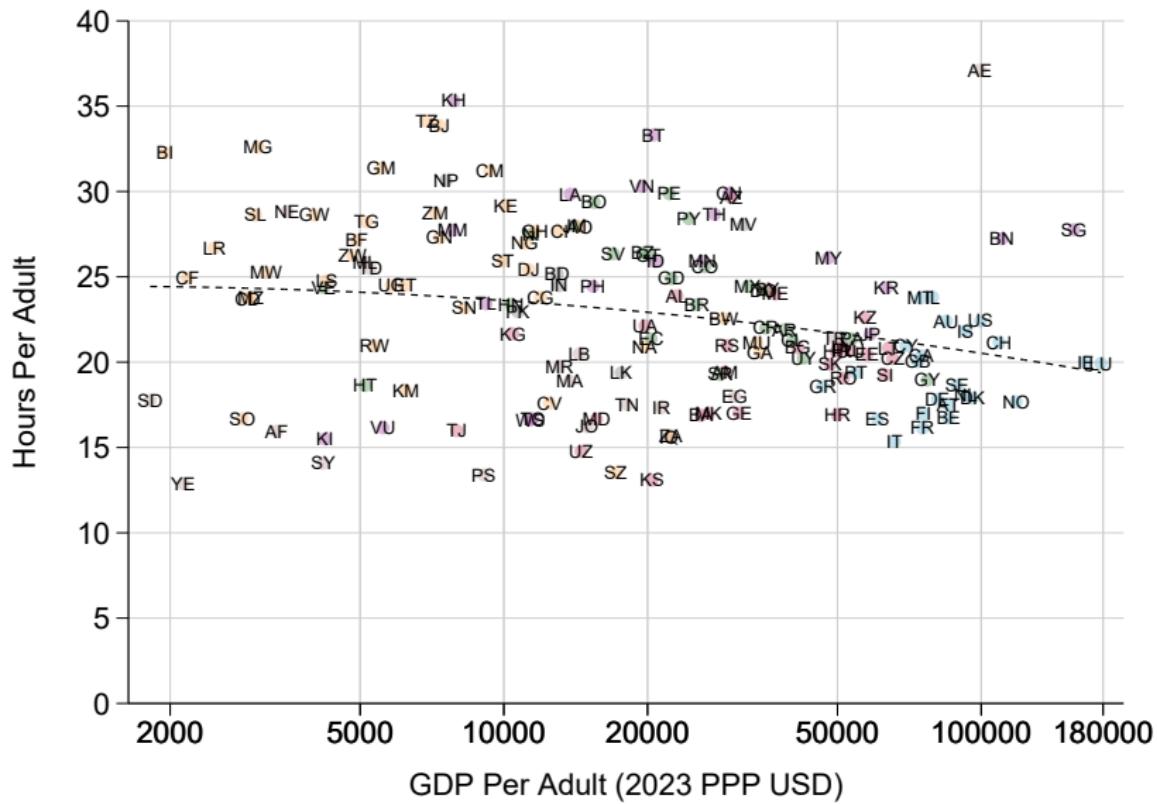
Hours per Adult: Bick et al. (2018) Core Countries



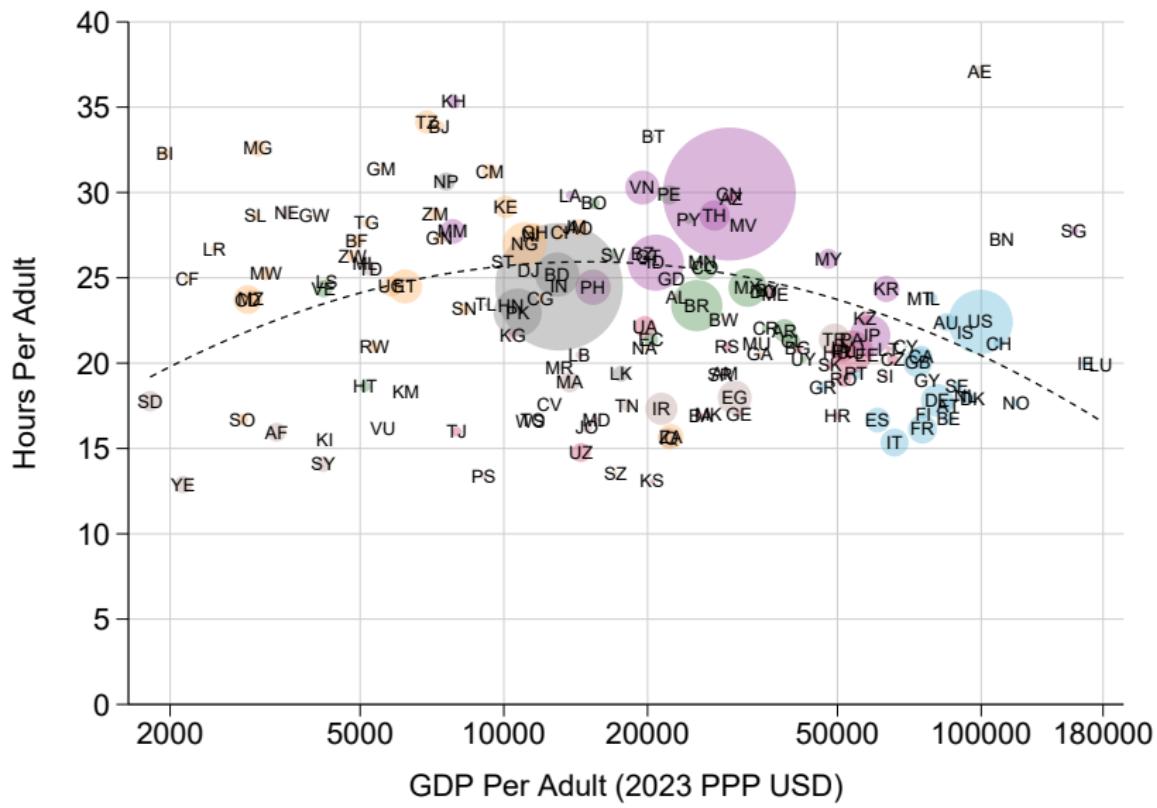
Hours per Adult: Bick et al. (2018) Full Sample



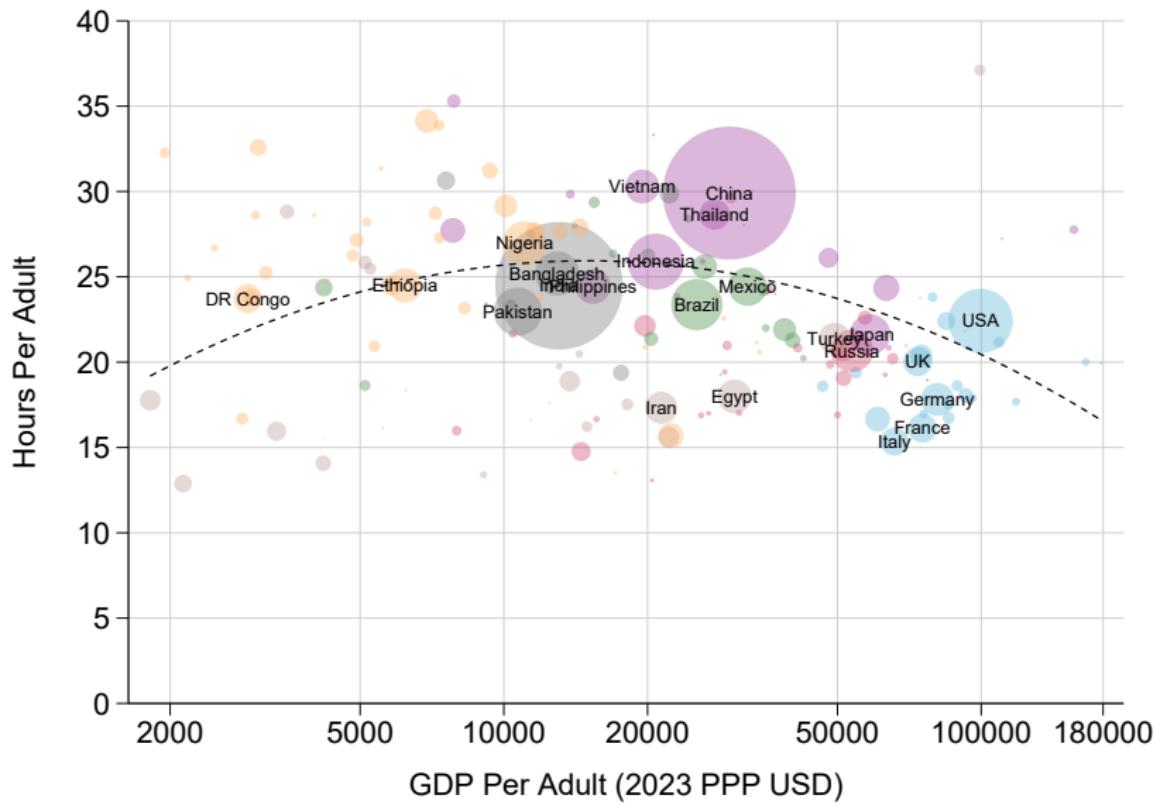
Hours per Adult: Our Sample



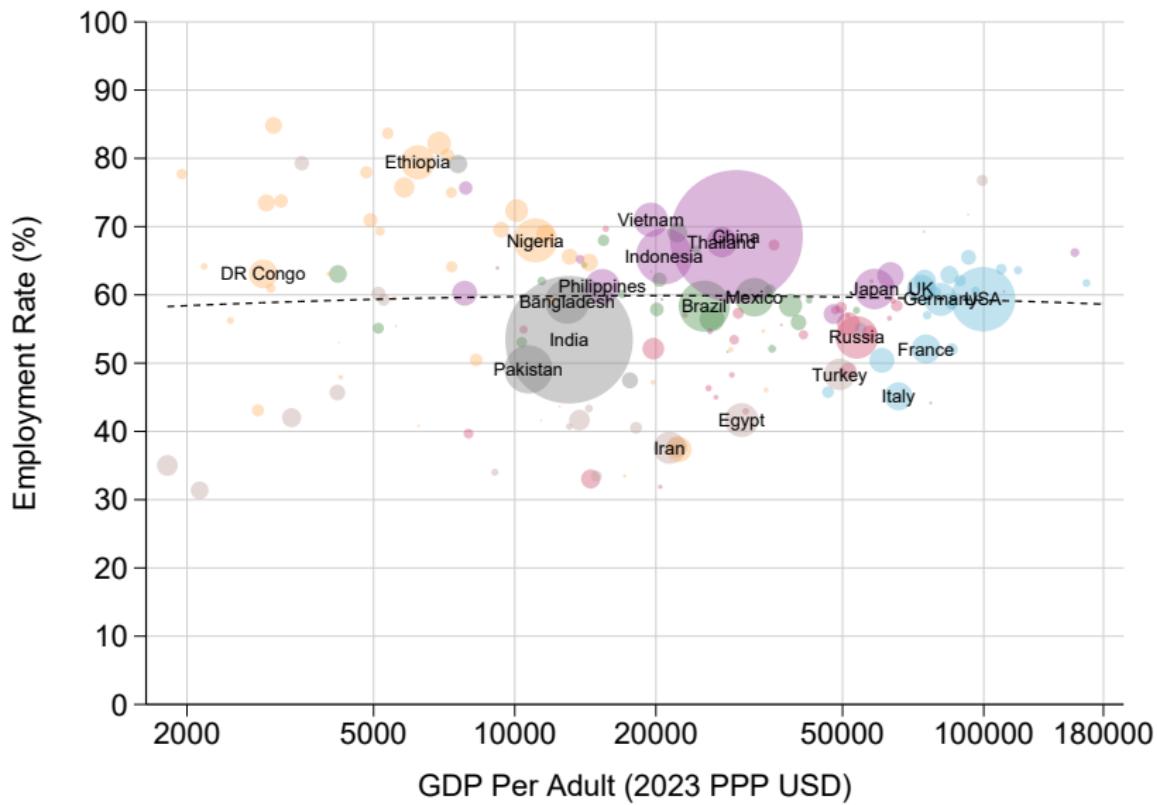
Hours per Adult: Our Sample weighted by population



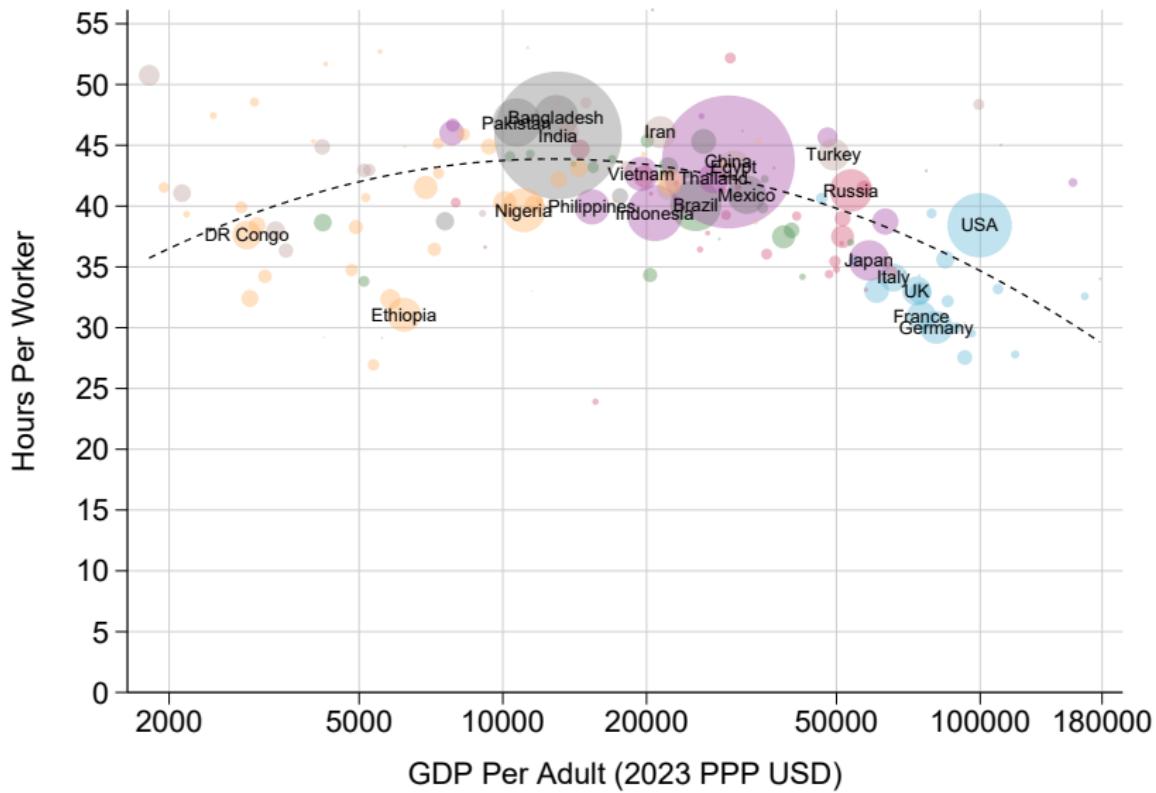
Working Hours and Development: Hours per Adult



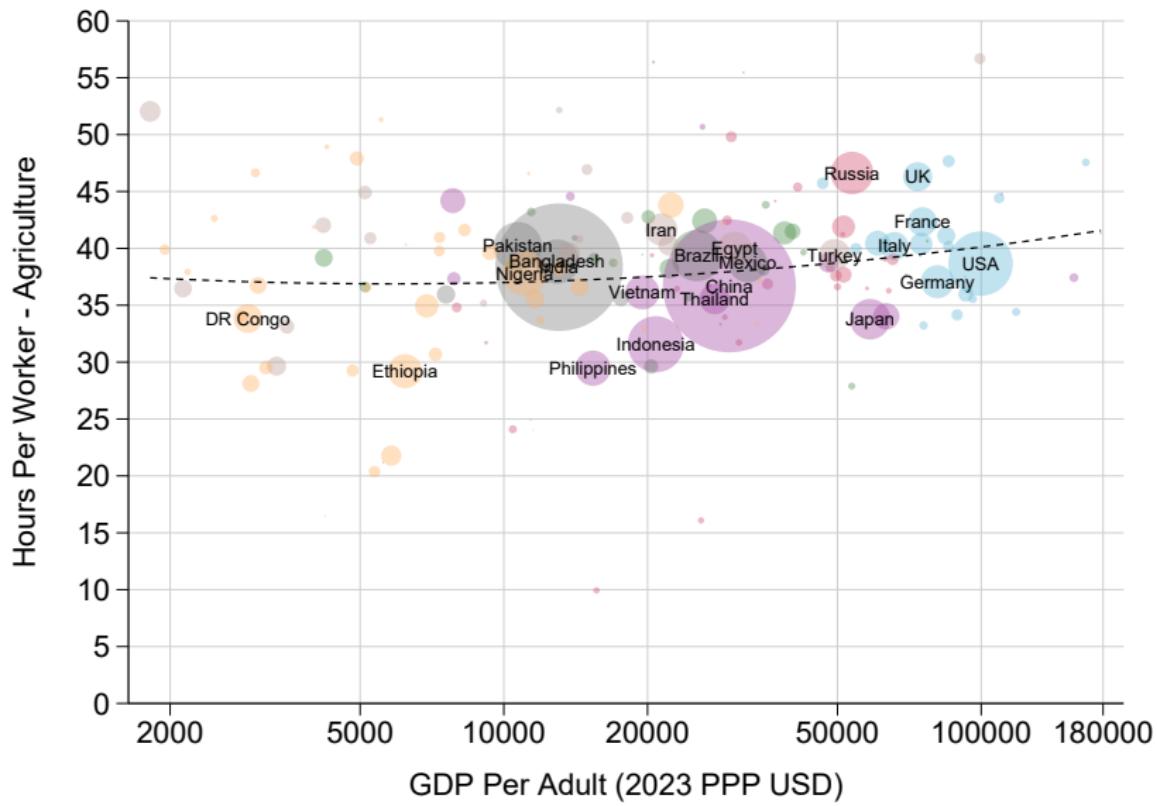
Working Hours and Development: Employment Rate



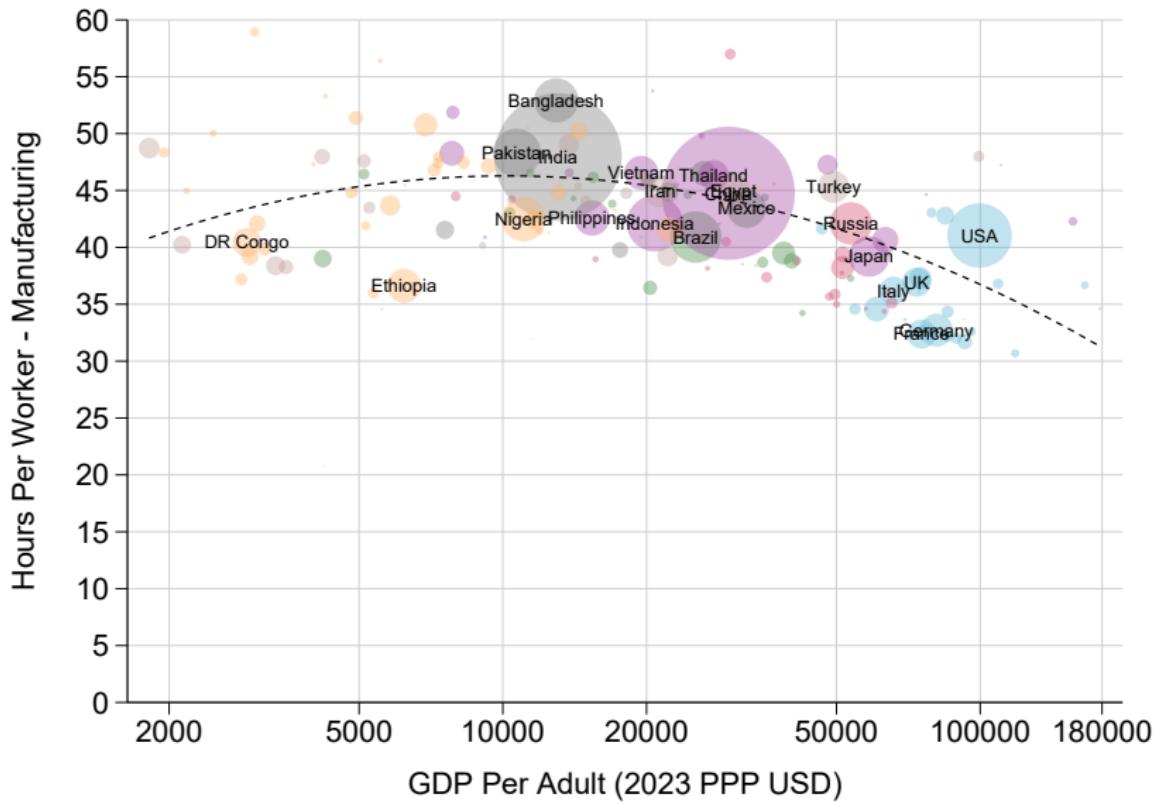
Working Hours and Development: Hours per Worker



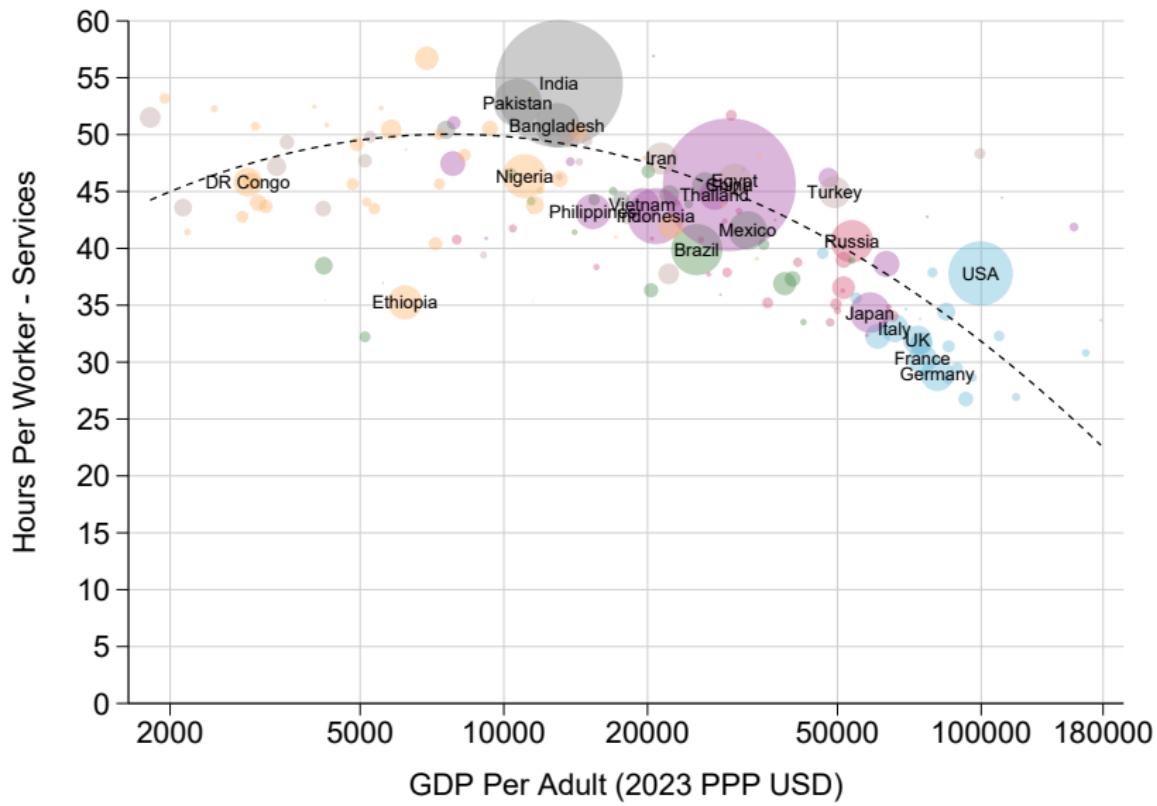
Working Hours and Development: Agriculture



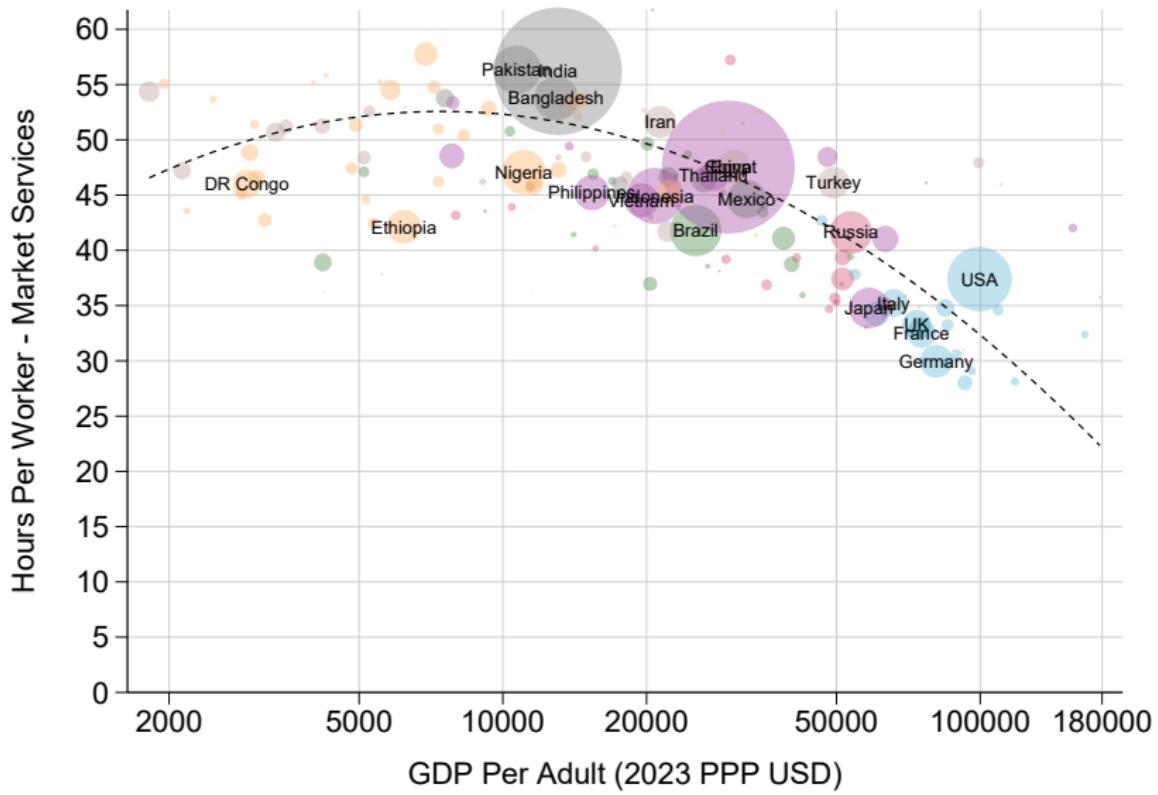
Working Hours and Development: Manufacturing



Working Hours and Development: Market Services



Working Hours and Development: Govt/Educ./Health

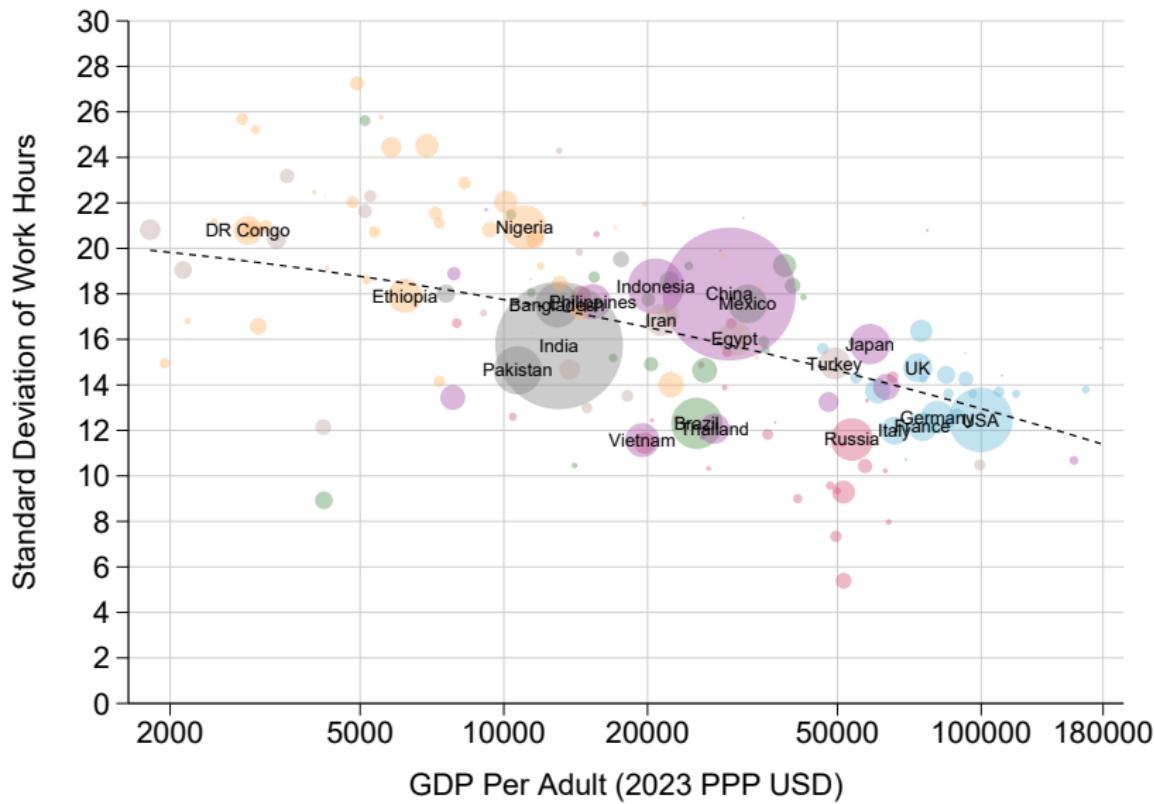


Working Hours per Worker and Development: By Sector

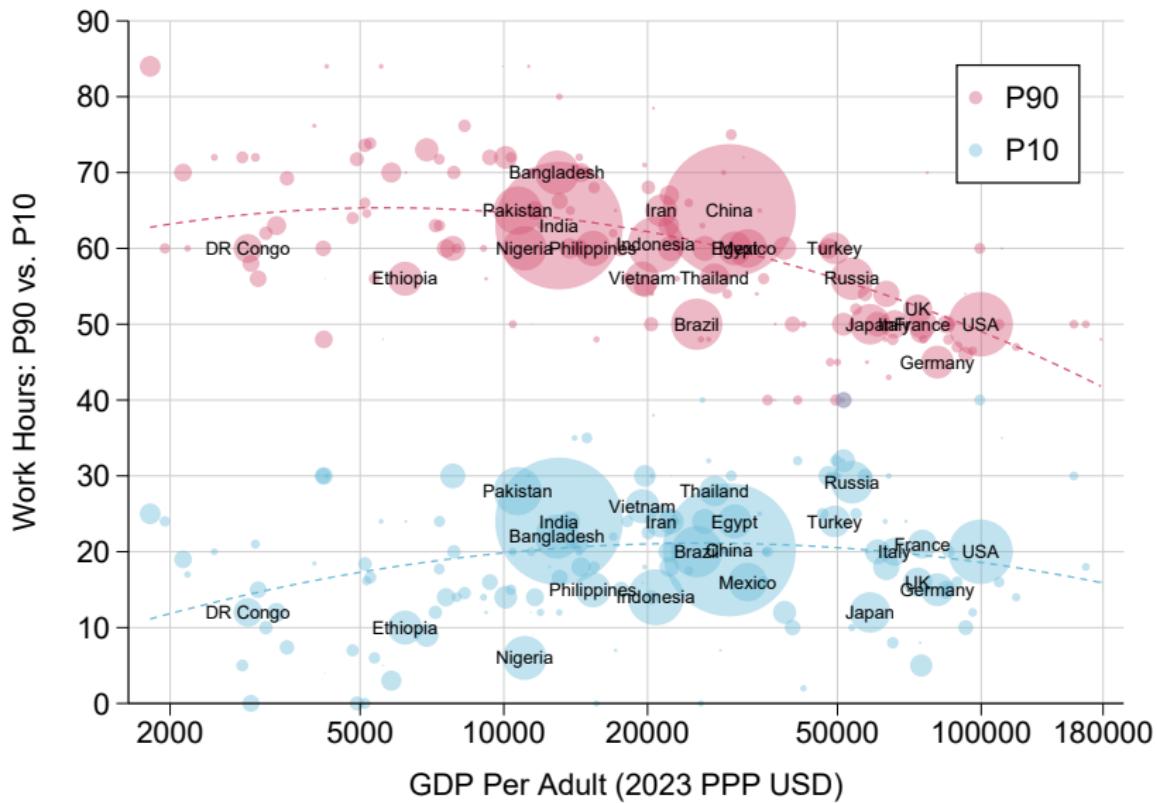


Countries ranked in 4 groups (World Bank)

Within-Country Variations: Standard Deviation of Hours



Within-Country Variations: P90 vs. P10



Working Hours Over the Life Cycle

In all countries, lower work hours at young and old age.

1) Prime-aged (20-59): bell-shaped with development.

→ Structural change.

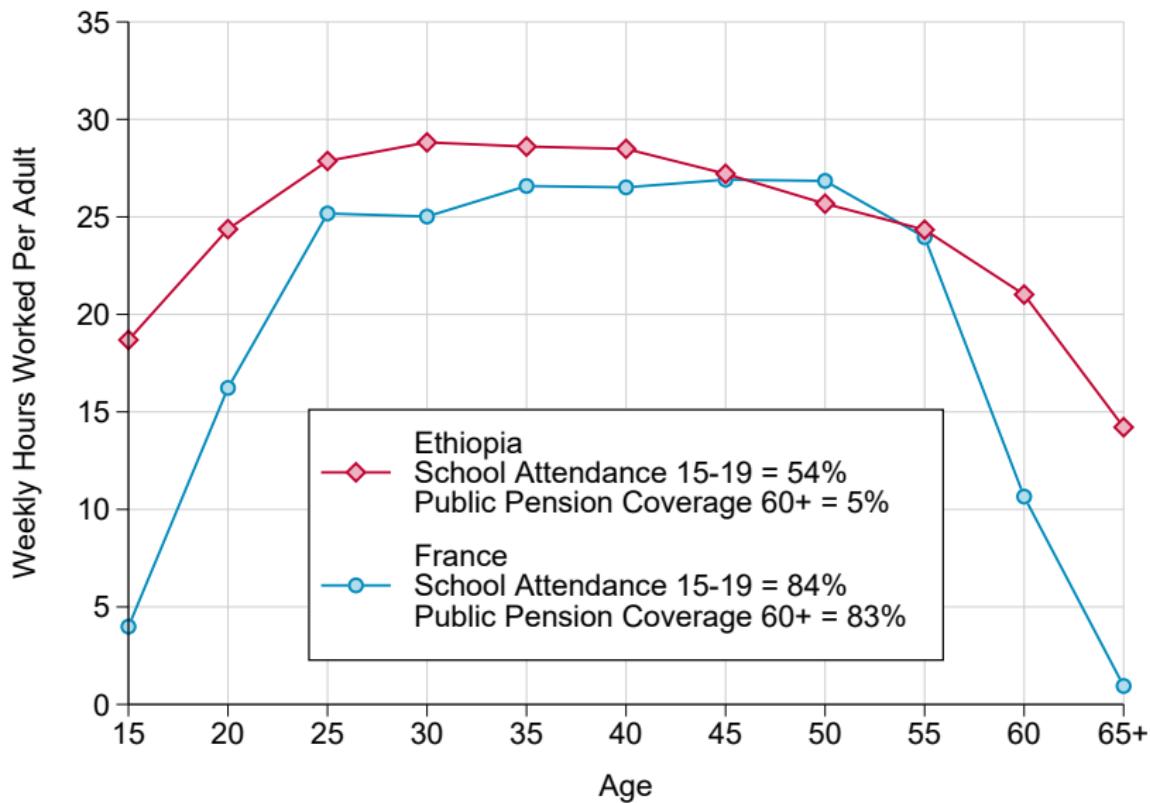
2) Young (15-19): declining with development

→ Education systems.

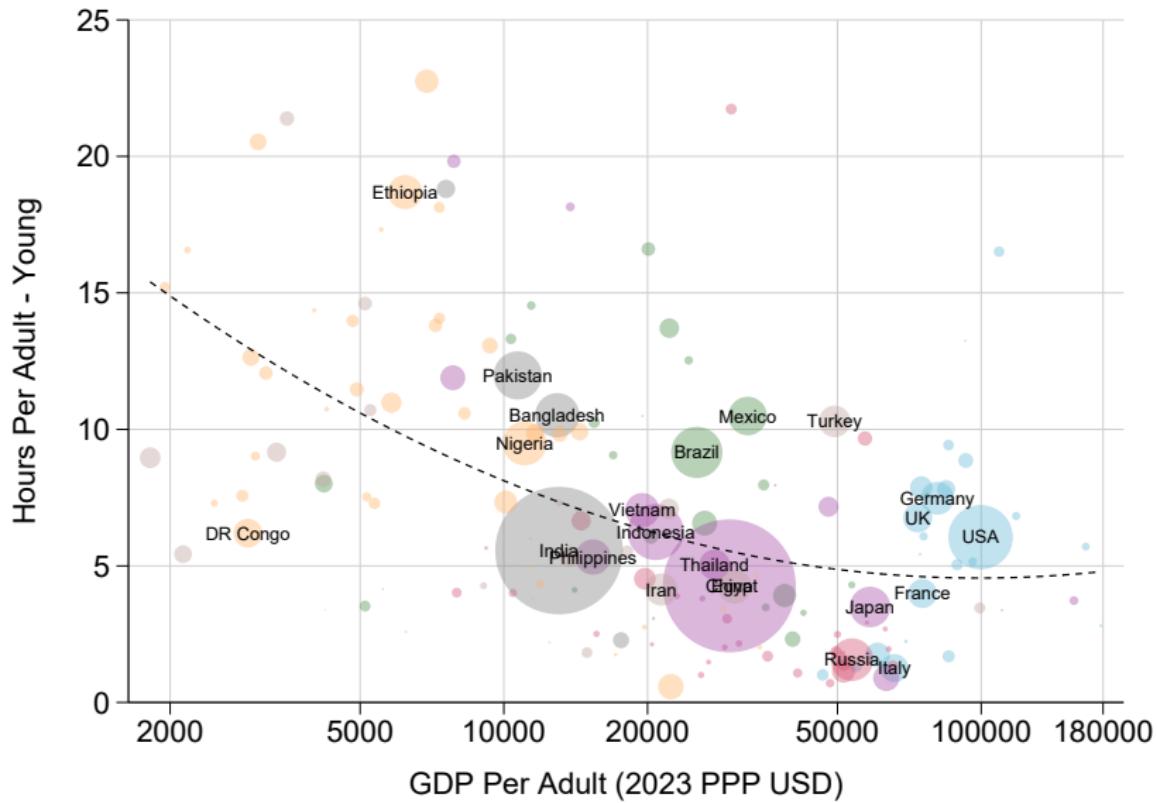
3) Elderly (60+): declining with development

→ Public pension systems.

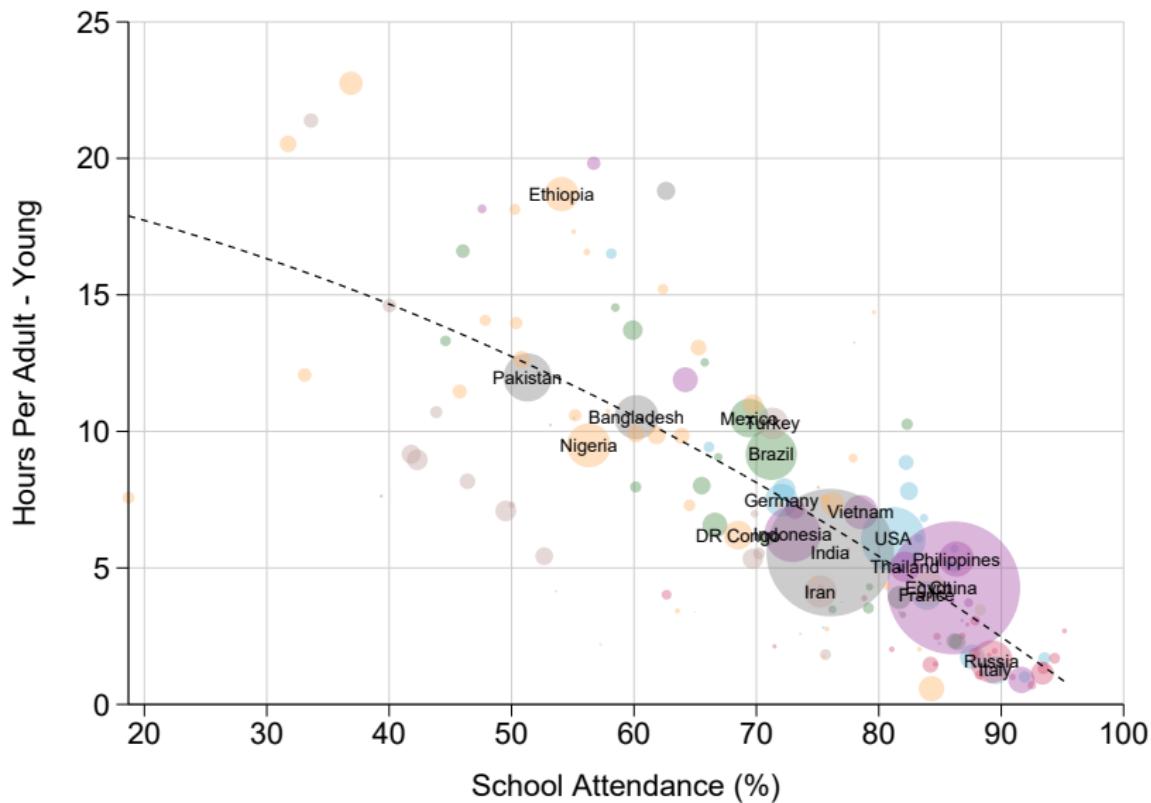
Motivating Life-Cycle Comparison: France vs. Ethiopia



Working Hours of the Young (15-19)



Working Hours of the Young and School Attendance



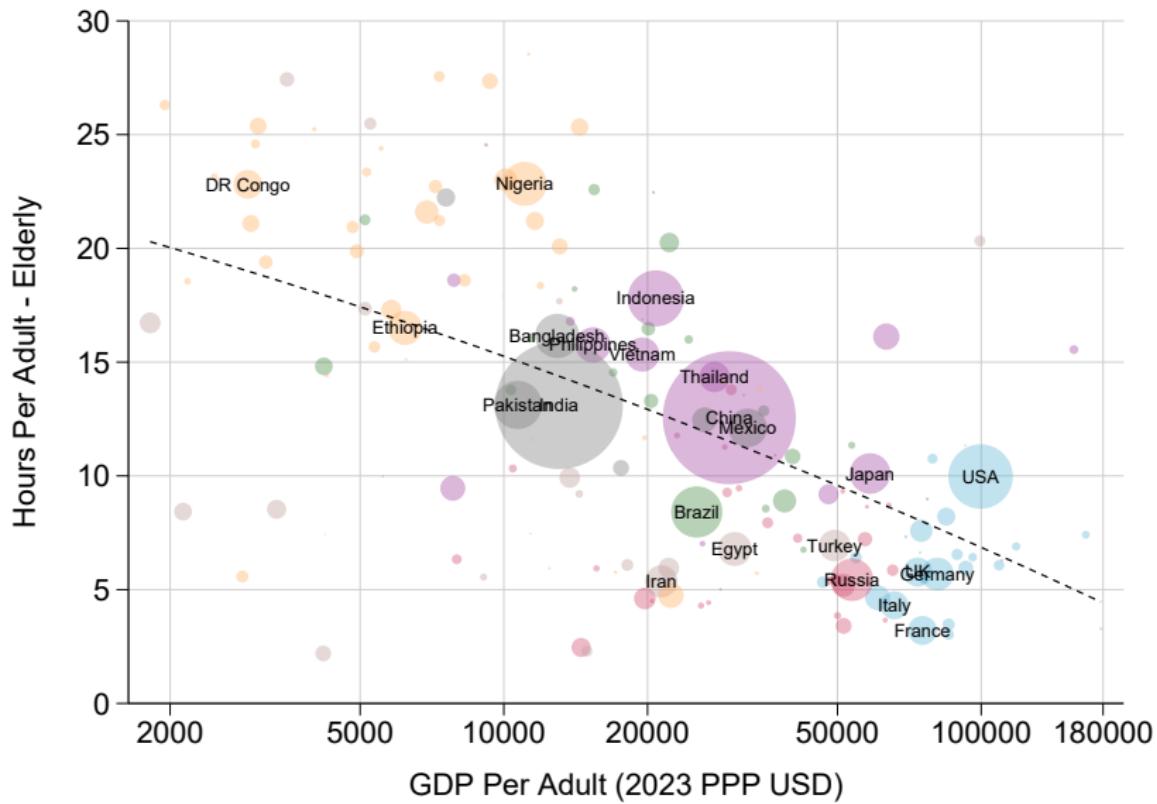
Working Hours of the Young & School Attendance

Unweighted

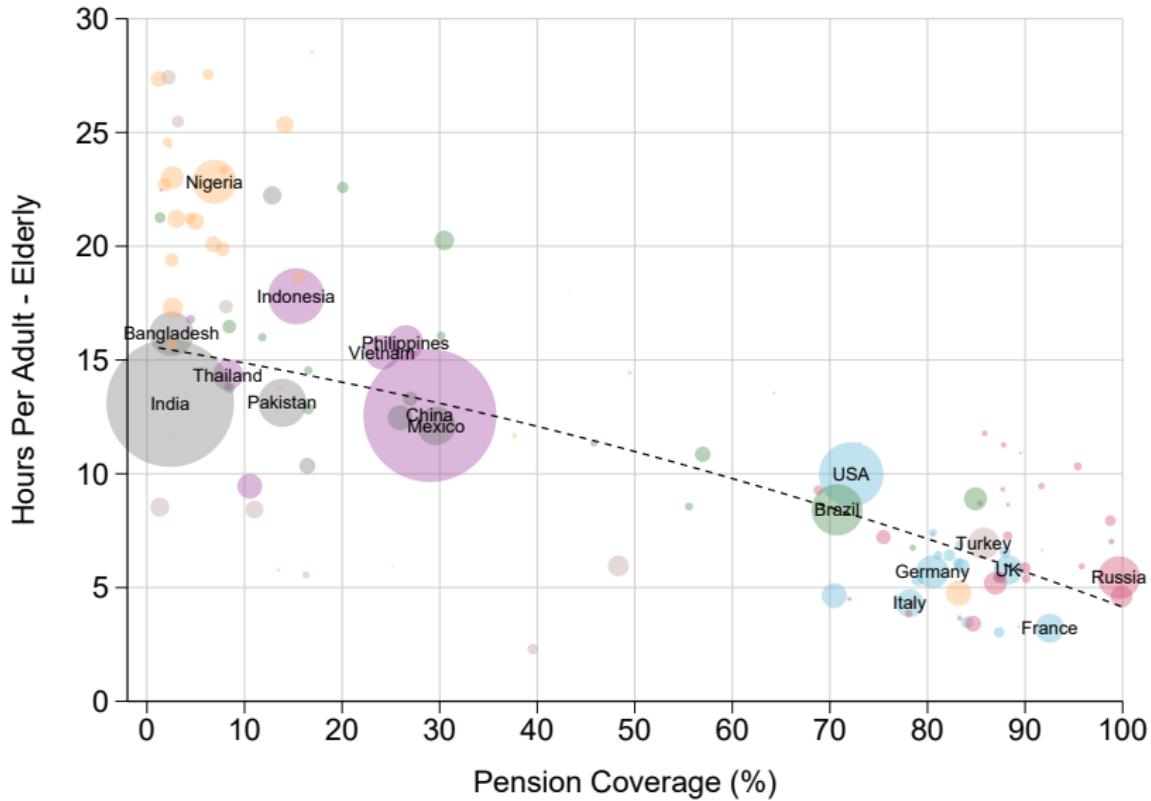
	(1)	(2)	(3)	(4)
Log GDP Per Adult	-2.25*** (0.64)		0.54* (0.31)	2.36*** (0.56)
Young School Attendance		-24.98*** (2.41)	-27.31*** (2.75)	-25.15*** (2.54)
Employment: Agriculture				9.54*** (3.46)
Employment: Manufacturing				-6.89 (4.93)
Mean DepVar	7.1	7.1	7.1	7.1
N	150	150	150	150
Adjusted R2	0.23	0.69	0.69	0.76

Youth hours fall with development driven entirely by increased school attendance.

Working Hours of the Elderly (60+)



Working Hours of the Elderly (60+) and Pension Coverage



Pension coverage = % of elderly living in a household receiving a public pension

Working Hours of the Elderly and Pension Systems

Unweighted

	(1)	(2)	(3)	(4)	(5)
Log GDP Per Adult	-4.01*** (0.89)			1.09 (1.41)	0.80 (1.33)
Pension Spending		-84.99*** (20.37)		-59.25** (27.11)	-64.37*** (23.94)
Elderly Population Share		-17.06* (9.08)		-12.98 (14.64)	5.53 (15.29)
Pension Coverage			-10.93*** (2.24)	-7.14** (2.94)	-9.32*** (2.27)
Employment: Agriculture					-0.11 (5.36)
Employment: Manufacturing					-28.75*** (8.78)
Mean DepVar	11.8	11.8	11.8	11.8	11.8
N	93	93	93	93	93
Adjusted R2	0.42	0.56	0.54	0.63	0.72

Elderly hours fall with development driven entirely by public pensions

Working Hours of the Prime-Age (20-59) by Gender

In all countries, women work less than men.

1) Men: strongly bell-shaped with development.

→ Structural change.

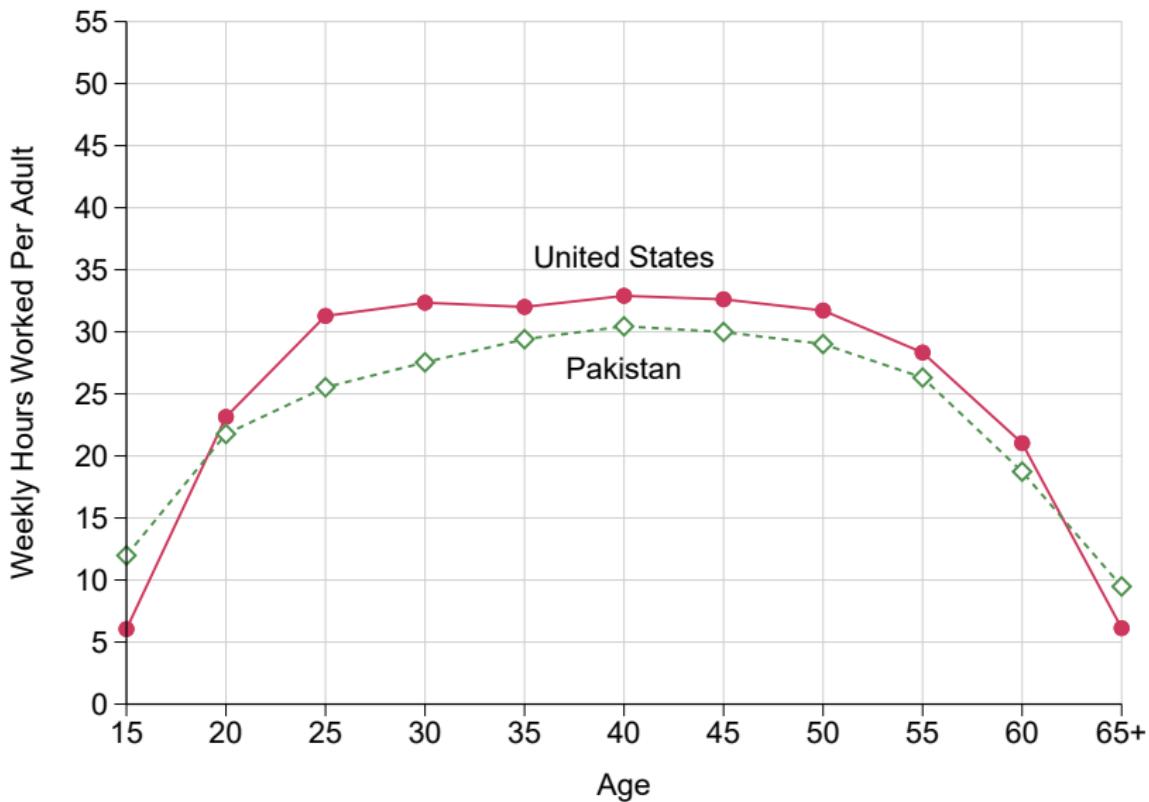
2) Women: weakly increasing with development.

→ Cultural norms and institutions.

Overall, prime-age hours worked flat with development.

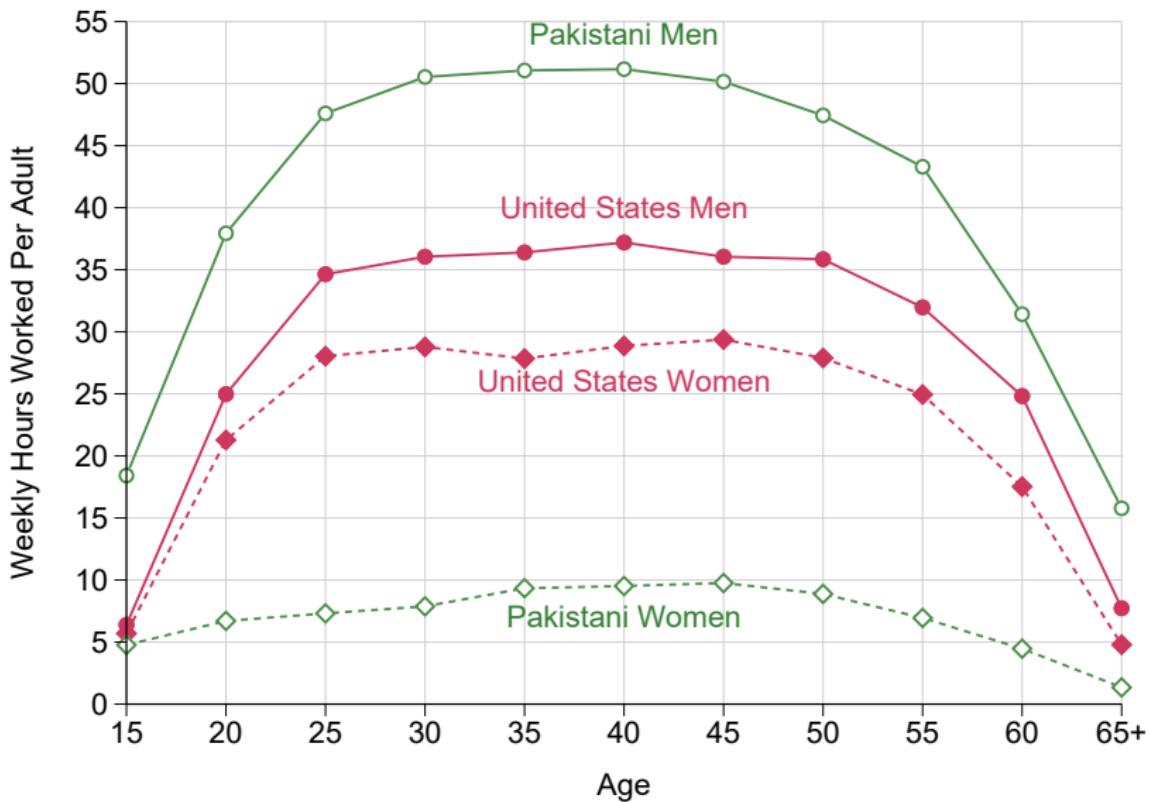
Motivating Comparison: Pakistan vs. United States

Hour per Adult by Age Group: All Adults

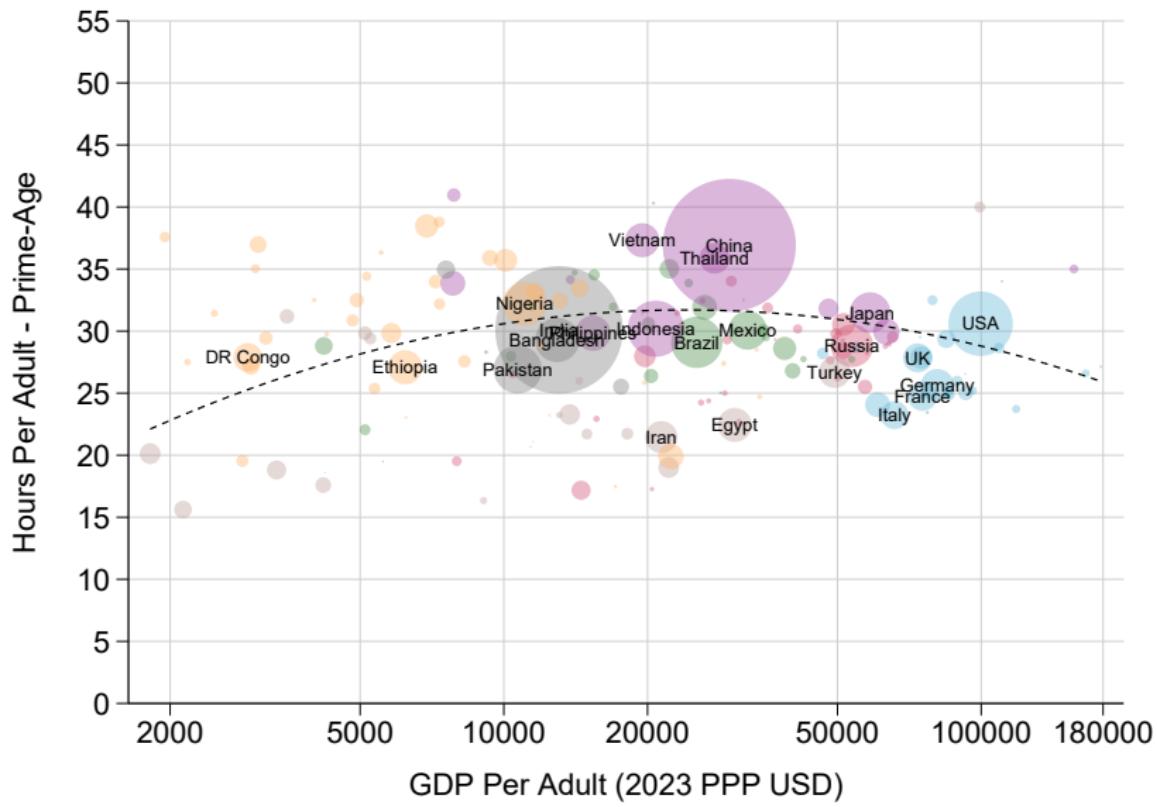


Motivating Comparison: Pakistan vs. United States

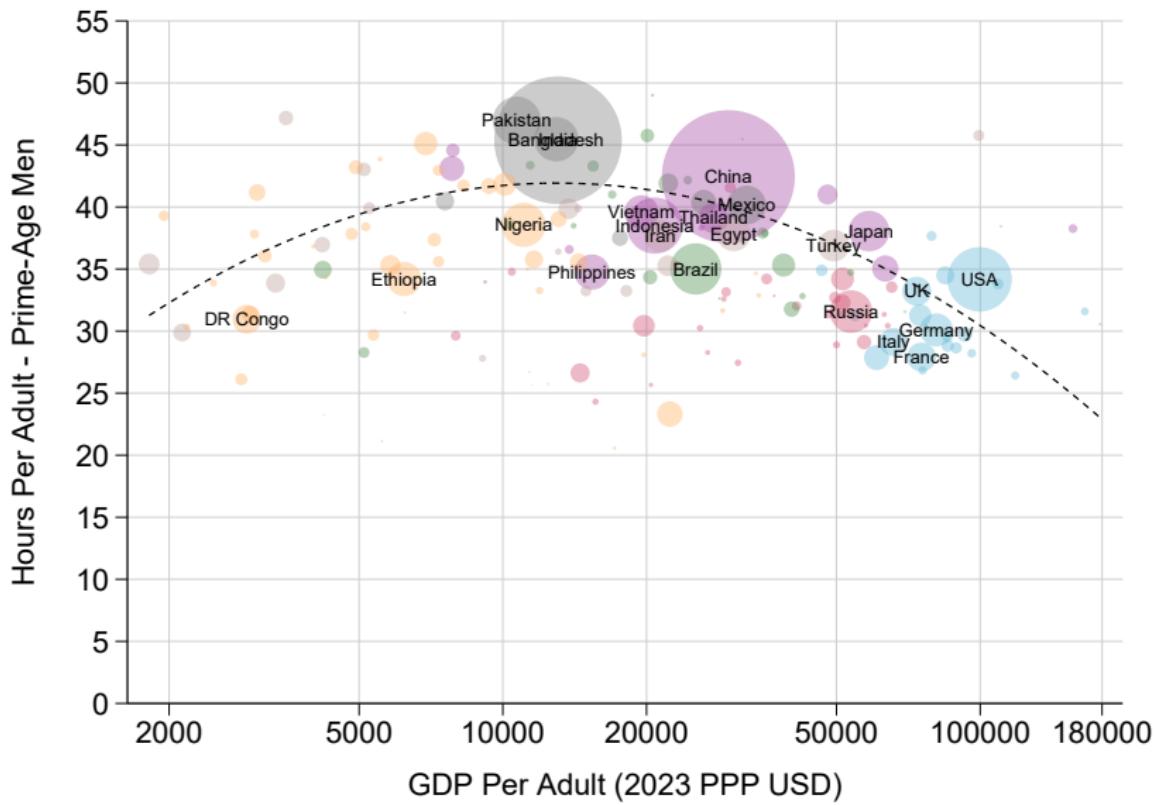
Hour per Adult by Age Group: Men vs. Women



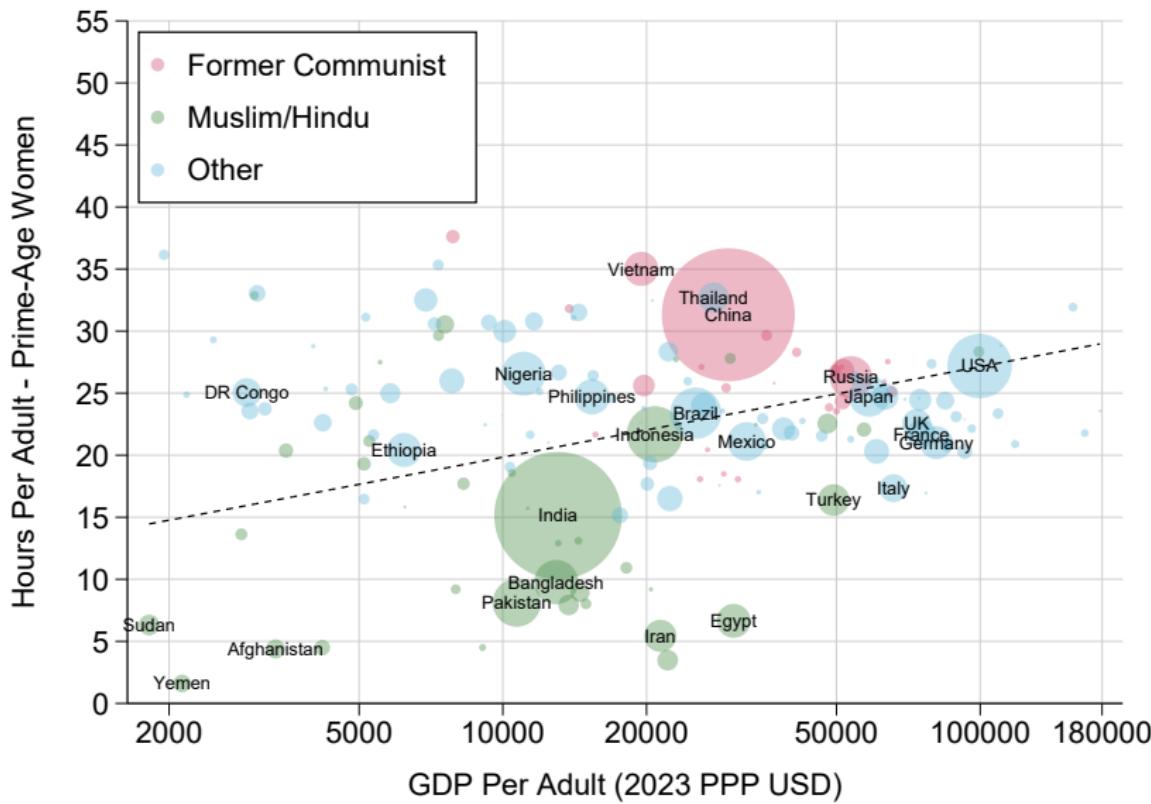
Hours per Adult, Prime-Aged Adults (20-59)



Hours per Adult, Prime-Aged Men (20-59)



Hours per Adult, Prime-Aged Women (20-59)



Working Hours of Prime-Aged Women 20-59

Unweighted

	(1)	(2)	(3)	(4)
Log GDP Per Adult	3.48** (1.48)		-1.59* (0.92)	2.76*** (0.96)
Muslim/Hindu Share		-10.72*** (1.74)	-11.35*** (1.51)	-11.42*** (2.08)
Former Communist Country		5.91*** (0.98)	5.83*** (1.04)	7.28*** (1.46)
% Women Living with Young Children		-2.97 (5.60)	-7.81 (6.06)	-9.74* (5.12)
Employment: Agriculture				22.27*** (4.80)
Employment: Manufacturing				-16.79 (15.58)
Mean DepVar	22.0	22.0	22.0	22.0
N	132	132	132	132
Adjusted R2	0.12	0.73	0.74	0.82

Hours and Development in Cross-Section: Summary

Unweighted

	(1) All Adults	(2) Prime-Age Adults	(3) Prime-Age Men	(4) Prime-Age Women	(5) Young 15-19	(6) Elderly 60+
Log GDP Per Adult	-0.82 (0.67)	0.59 (0.71)	-2.27** (1.02)	3.16** (1.26)	-2.20*** (0.61)	-3.48*** (0.54)
Mean DepVar	24.7	30.7	39.3	22.3	6.6	12.5
N	160	160	160	160	159	160

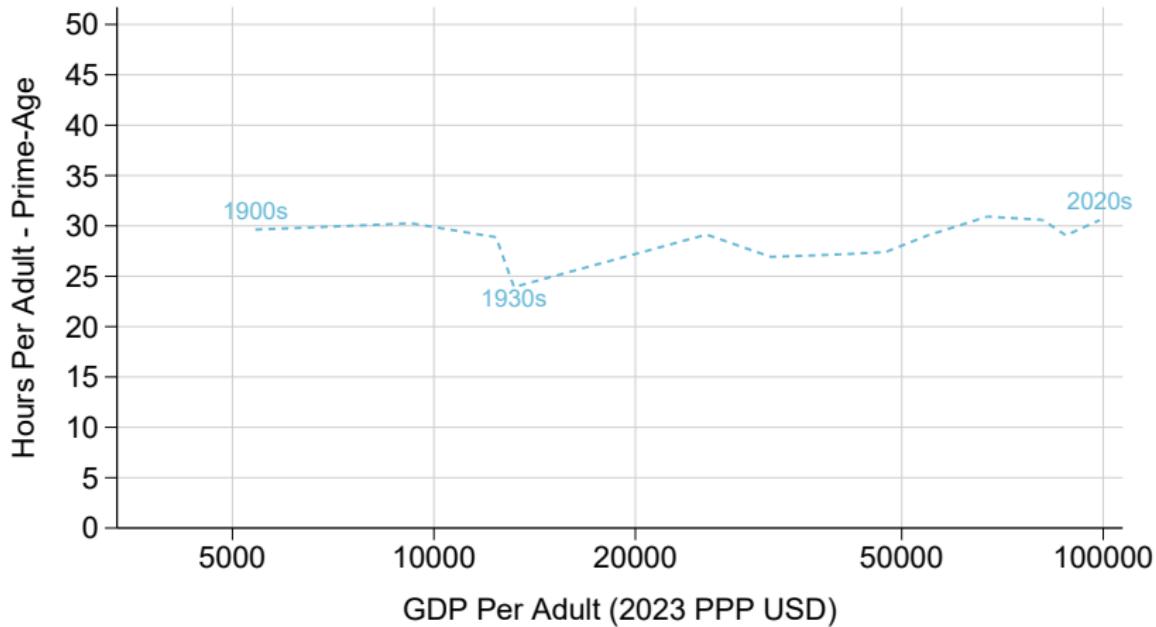
Long-Run Trends in Working Hours

Exploit Panel Dimension:

- 1) Western Europe since 1980s (14 countries).
- 2) Eastern Europe and Russia since 1990s (11 countries).
- 3) Latin America since 1980s (6 countries).
- 4) Sub-Saharan Africa since 1990s (7 countries).
- 5) Indonesia since 1970s.
- 6) Pakistan since 1970s.
- 7) Bangladesh since 1990s.
- 8) Philippines since 1990s.
- 9) United States since 1900 (Francis & Ramey 2009 + CPS).

Long-Run Trends - Prime Aged (20-59)

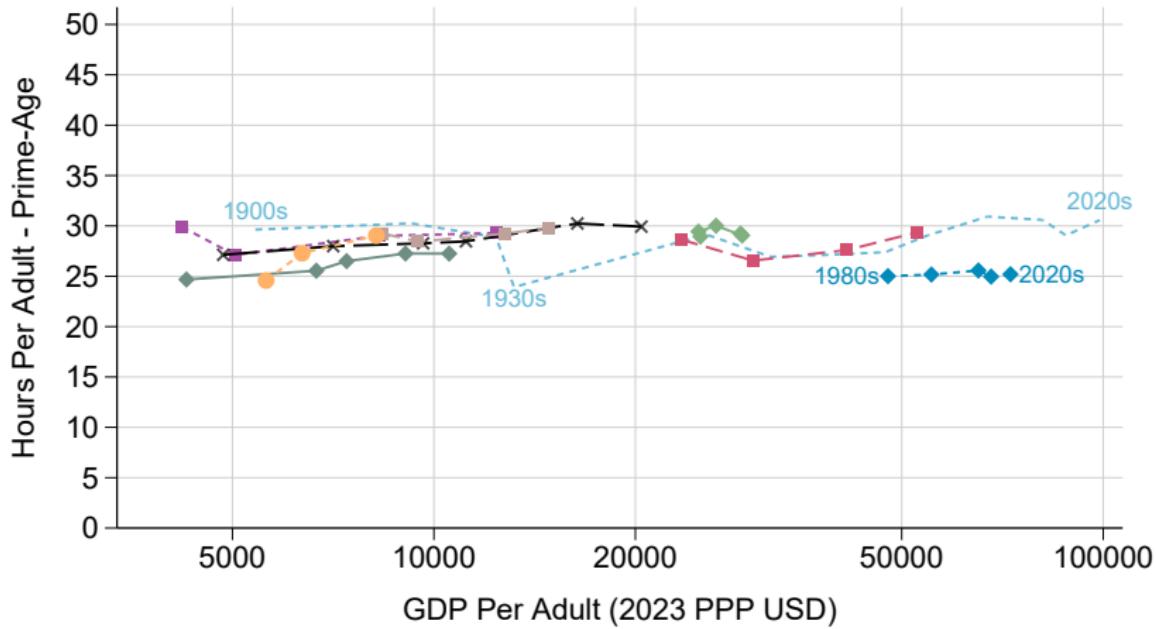
Each dot is a decade average, last dot=2020s, US since 1900 (Francis-Ramey)



United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Long-Run Trends - Prime Aged (20-59)

Each dot is a decade average, last dot=2020s, US since 1900 (Francis-Ramey)

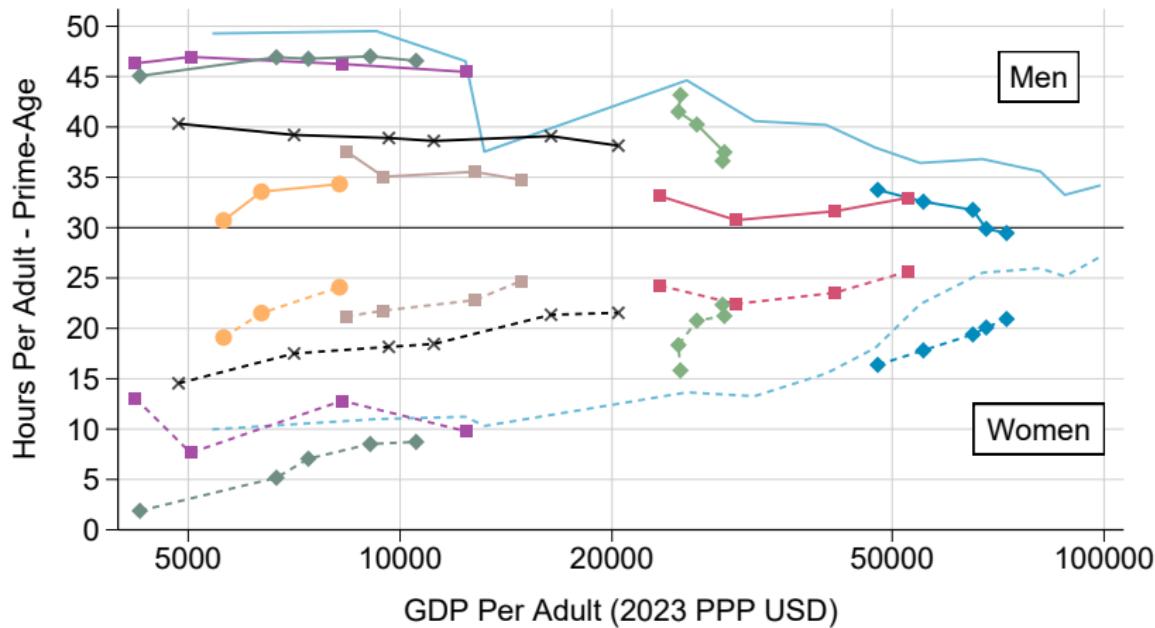


United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Long-Run - A Great Gender Reshuffling

Employment

Per Worker



United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

A Great Gender Reshuffling

EU/US/LatAm

ROW

Panel A: Cross Section

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	-2.27** (1.02)	3.16** (1.26)	-2.60*** (0.85)	0.04 (0.77)	-0.09 (0.93)	8.66*** (2.87)
Mean DepVar	39.3	22.3	45.6	37.6	86.2	59.5
N	160	160	160	160	160	160

Panel B: Panel Data

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	-4.86*** (0.38)	6.14*** (0.48)	-4.07*** (0.31)	-1.08*** (0.39)	-3.26*** (0.54)	19.62*** (1.09)
Mean DepVar	36.3	21.0	43.4	36.1	83.7	59.0
N	2,166	2,166	2,166	2,166	2,166	2,166

A Great Gender Reshuffling in the Household

(W)

(E)

(Men)

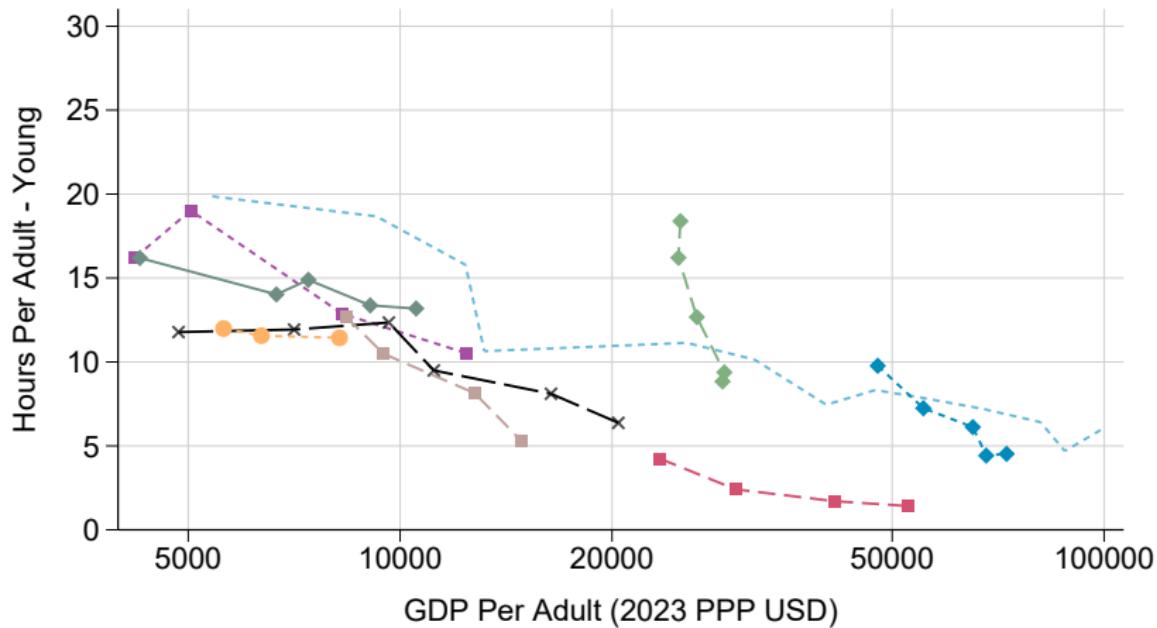
Panel A: Cross Section

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	2.13* (1.09)	2.43** (1.09)	1.47 (0.99)	1.47 (1.20)
Mean DepVar	24.4	23.8	24.9	29.2
N	129	129	129	129

Panel B: Panel Data

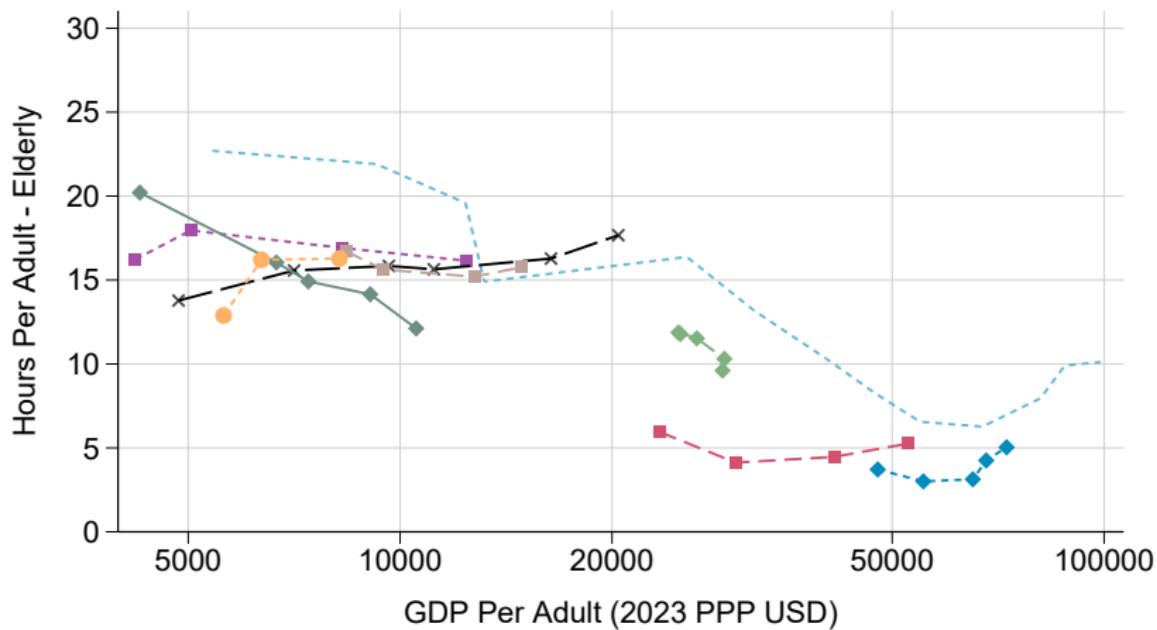
	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	6.65*** (0.61)	7.53*** (0.70)	3.56*** (0.45)	1.67*** (0.56)
Mean DepVar	21.0	20.3	23.2	27.4
N	1,614	1,614	1,614	1,614

Long-Run Trends - Young



United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Long-Run Trends - Elderly



United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Hours and Development: Cross-Section vs. Panel Data

Unw

Panel A: Cross Section

	(1) All Adults	(2) Prime-Age Adults	(3) Prime-Age Men	(4) Prime-Age Women	(5) Young 15-19	(6) Elderly 60+
Log GDP Per Adult	-0.82 (0.67)	0.59 (0.71)	-2.27** (1.02)	3.16** (1.26)	-2.20*** (0.61)	-3.48*** (0.54)
Mean DepVar	24.7	30.7	39.3	22.3	6.6	12.5
Rich-Poor Gap	-3.3	2.4	-9.1	12.7	-8.8	-13.9
N	160	160	160	160	159	160
Adjusted R2	0.02	0.00	0.11	0.11	0.22	0.35

Panel B: Panel Data

	(1) All Adults	(2) Prime-Age Adults	(3) Prime-Age Men	(4) Prime-Age Women	(5) Young 15-19	(6) Elderly 60+
Log GDP Per Adult	-0.54* (0.30)	0.96*** (0.30)	-4.86*** (0.38)	6.14*** (0.48)	-7.54*** (0.50)	0.08 (0.32)
Mean DepVar	22.3	28.5	36.3	21.0	8.1	9.3
Rich-Poor Gap	-2.2	3.8	-19.4	24.6	-30.2	0.3
N	2,166	2,166	2,166	2,166	2,143	2,166
Within R2	0.01	0.02	0.21	0.37	0.32	-0.00

Cross-Sectional vs. Panel Working Hours and GDP

Young (15-19) hours of work: Fall faster in panel than in cross-section ⇒ Developing countries are increasing school attendance faster than richer countries did earlier. Schooling and Development

Elderly (60+) hours of work: Fall sharply in cross-section but stable in panel (since 1970s) ⇒ Developing countries are not providing pensions as fast as richer countries did earlier.

Prime-Age Men and Women: Gender convergence is faster in panel than in cross-section ⇒ Gender equality moves faster in developing world than it did in richer countries.

Probably reflects lessons from richer countries and consensus of advisory international organizations (World Bank, IMF).

Prime-Age Hours: Labor Taxes, Transfers, and Regulations

Labor taxes and transfers can reduce hours of work through substitution and income effects.

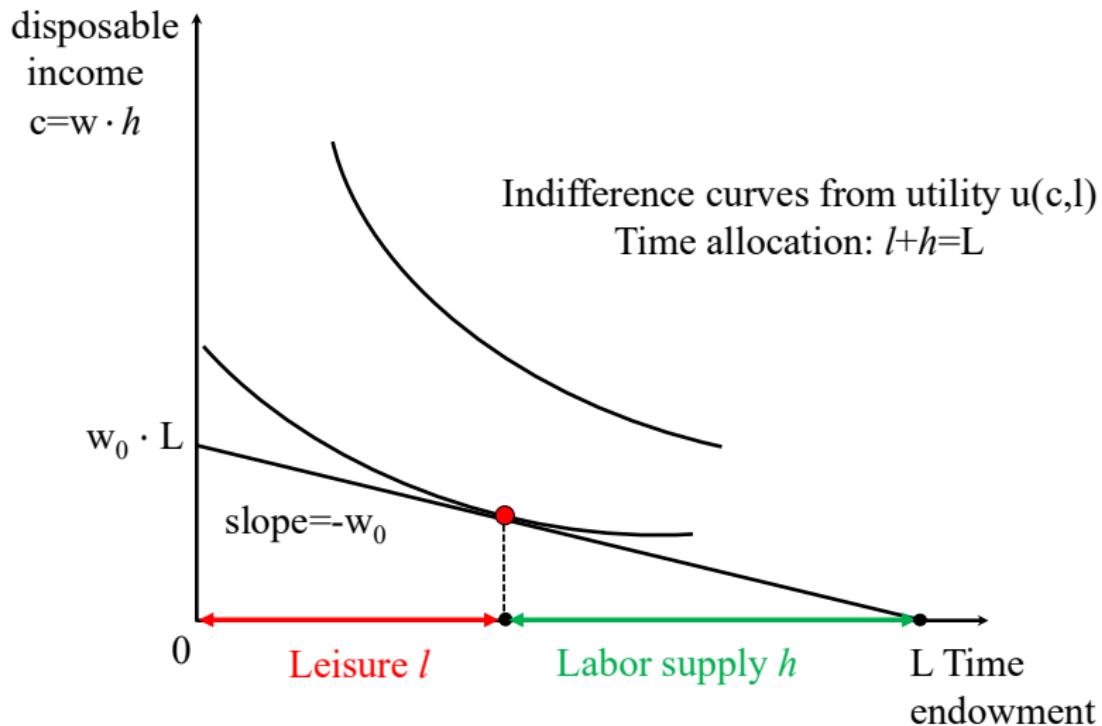
Bachas et al. (2024) have constructed tax rates. We use average labor income tax rates.

Gethin (2024) has constructed govt spending variables. We use cash transfers/GDP (excluding pensions)

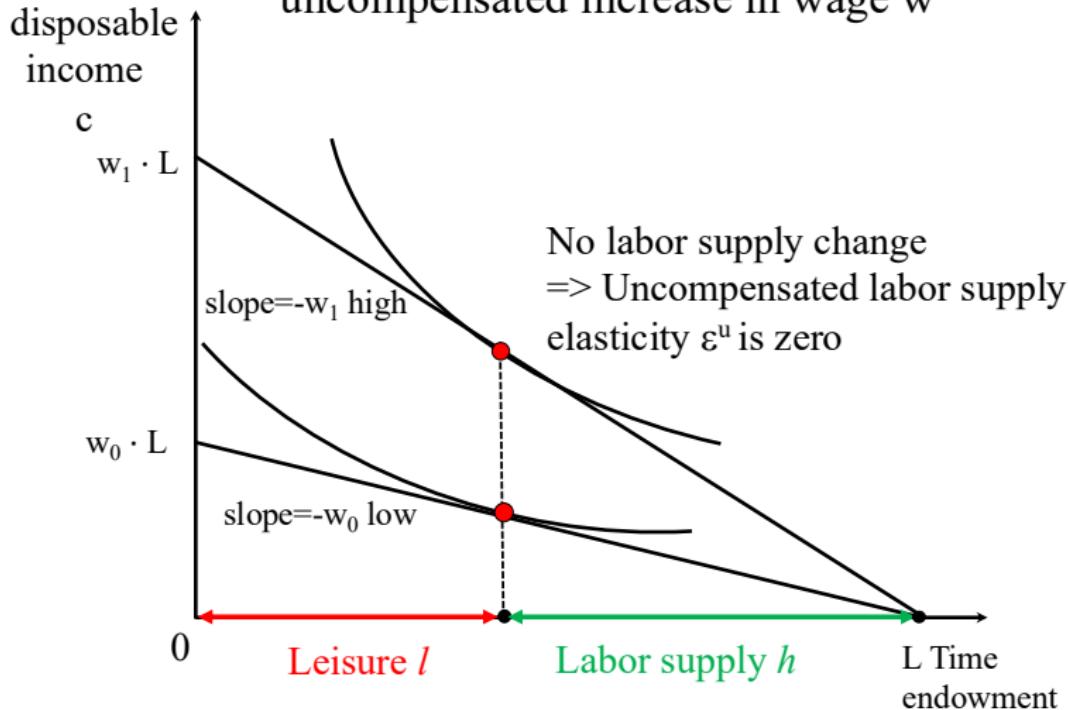
Working Hours Regulations Overtime premium pay, maximum hours, mandated vacations, etc.

World Bank has database of working hours regulations (12 variables): we create a single index.

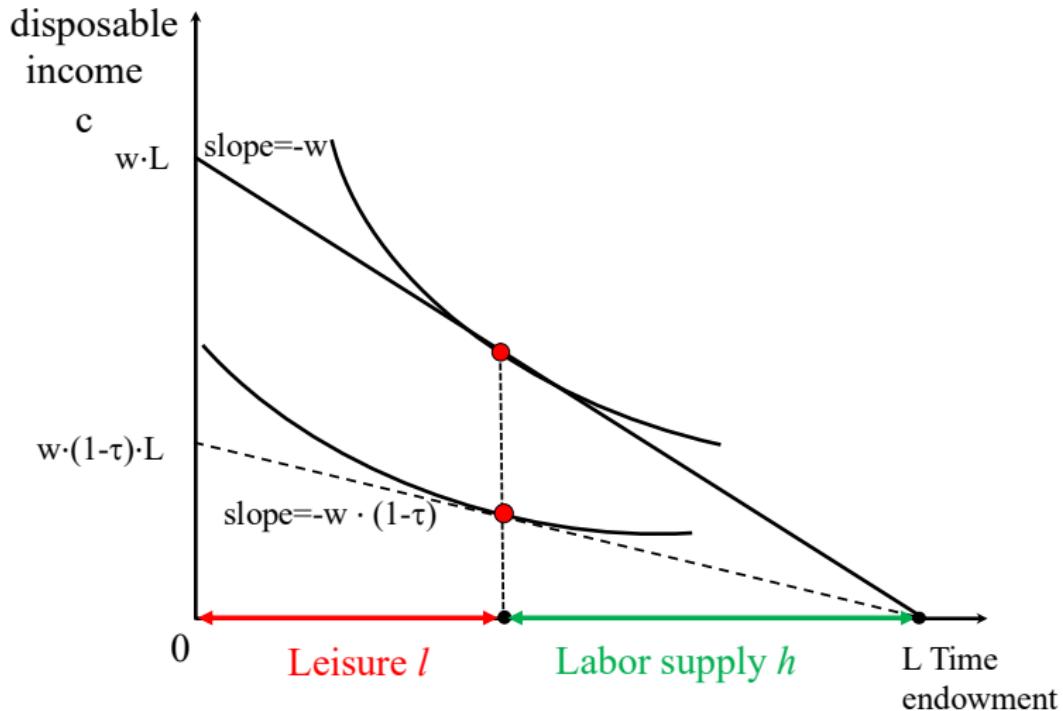
Labor supply basic theory



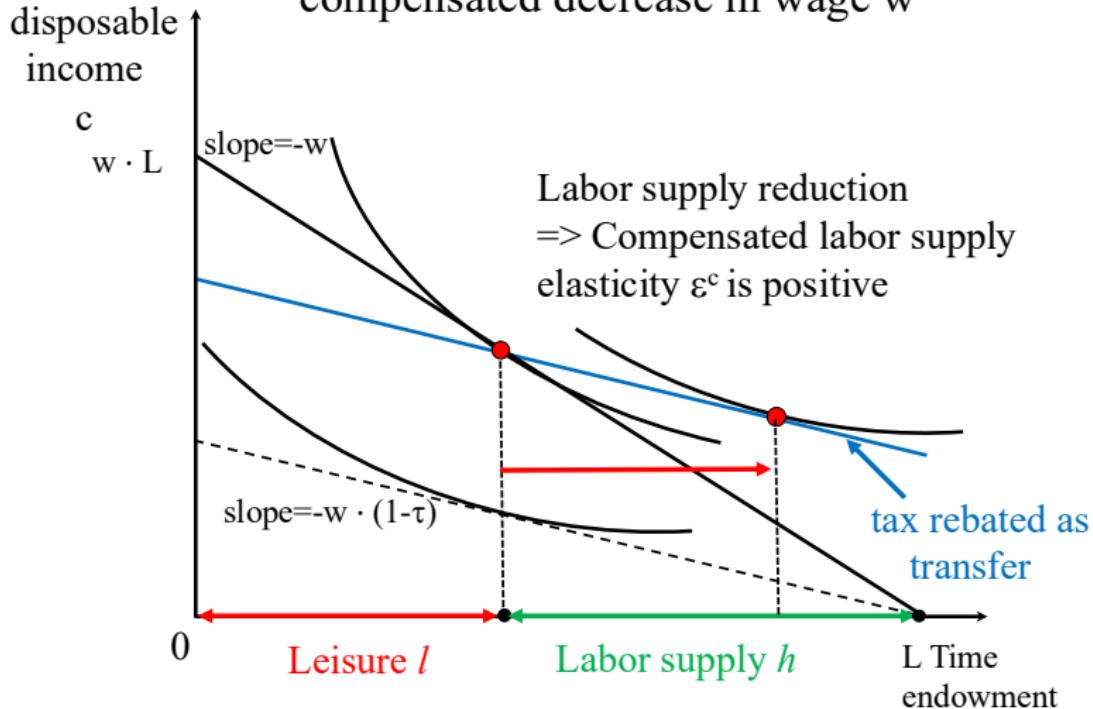
Economic development =
uncompensated increase in wage w



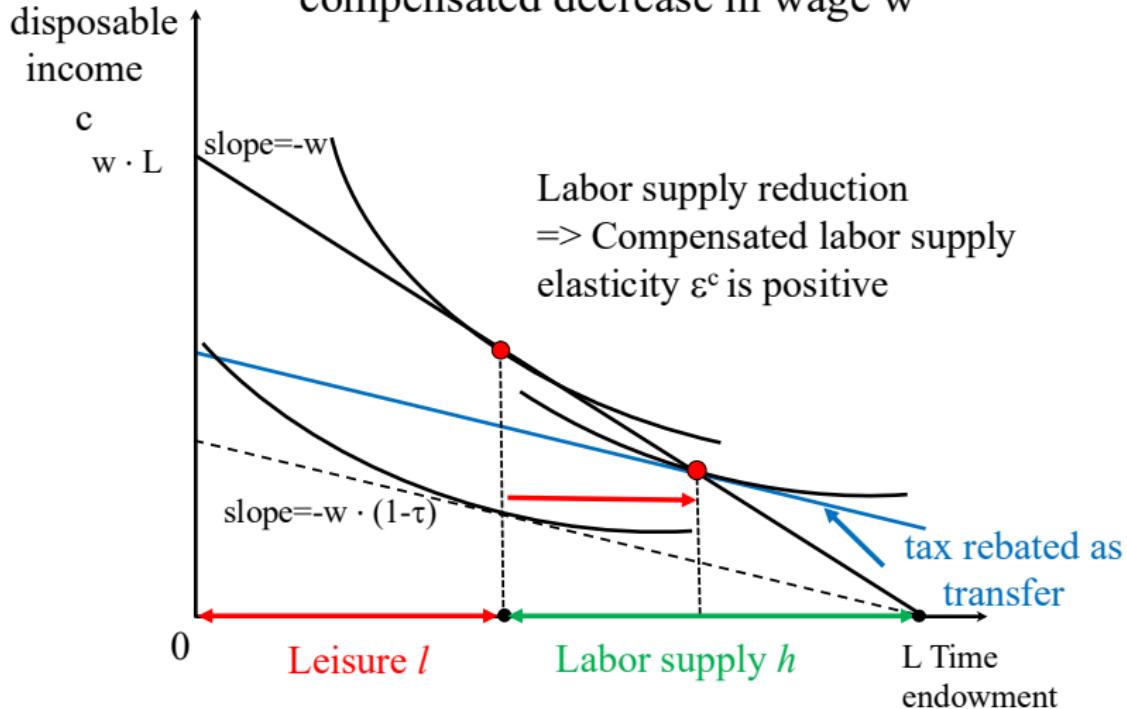
Tax on labor at rate τ



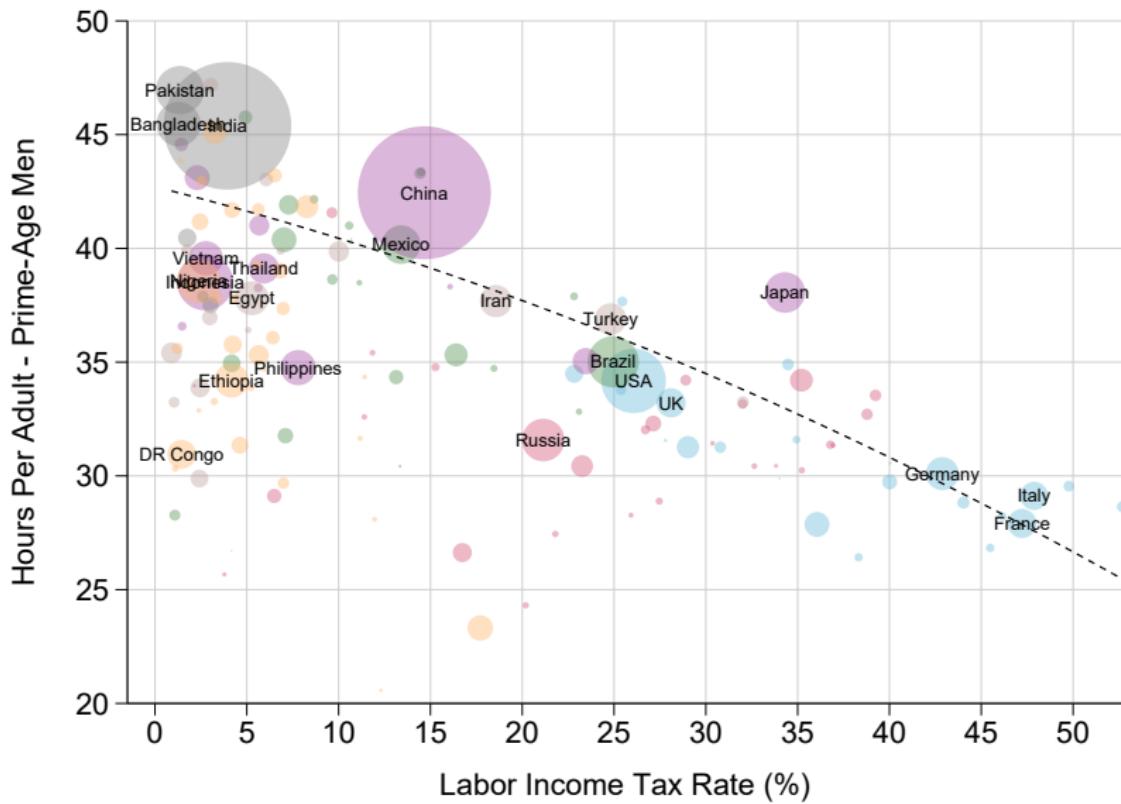
Tax on labor at rate τ + transfers =
compensated decrease in wage w



Tax on labor at rate τ + transfers =
compensated decrease in wage w



Working Hours vs. Labor Income Taxes, Prime-Aged Men



Prime-Age Log Hours and Taxes in Cross-section

Panel

	Hours Per Adult	Hours Per Worker	Employment Rate	Prime-Age Men	Prime-Age Women
$\log 1 - \tau(L)$	0.89*** (0.16)	0.62*** (0.12)	0.27** (0.13)	0.76*** (0.16)	1.22*** (0.31)
Log GDP Per Adult	0.08*** (0.03)	0.05** (0.02)	0.03 (0.03)	0.05* (0.03)	0.14** (0.07)
N	138	138	138	138	138
Adjusted R2	0.43	0.50	0.49	0.44	0.62

Regressions control for share Muslim/Hindu.

Large elasticity of hours wrt $1 - \tau_L$ vs. small elasticity wrt to GDP: consistent with small uncompensated labor supply elasticity and large income effects.

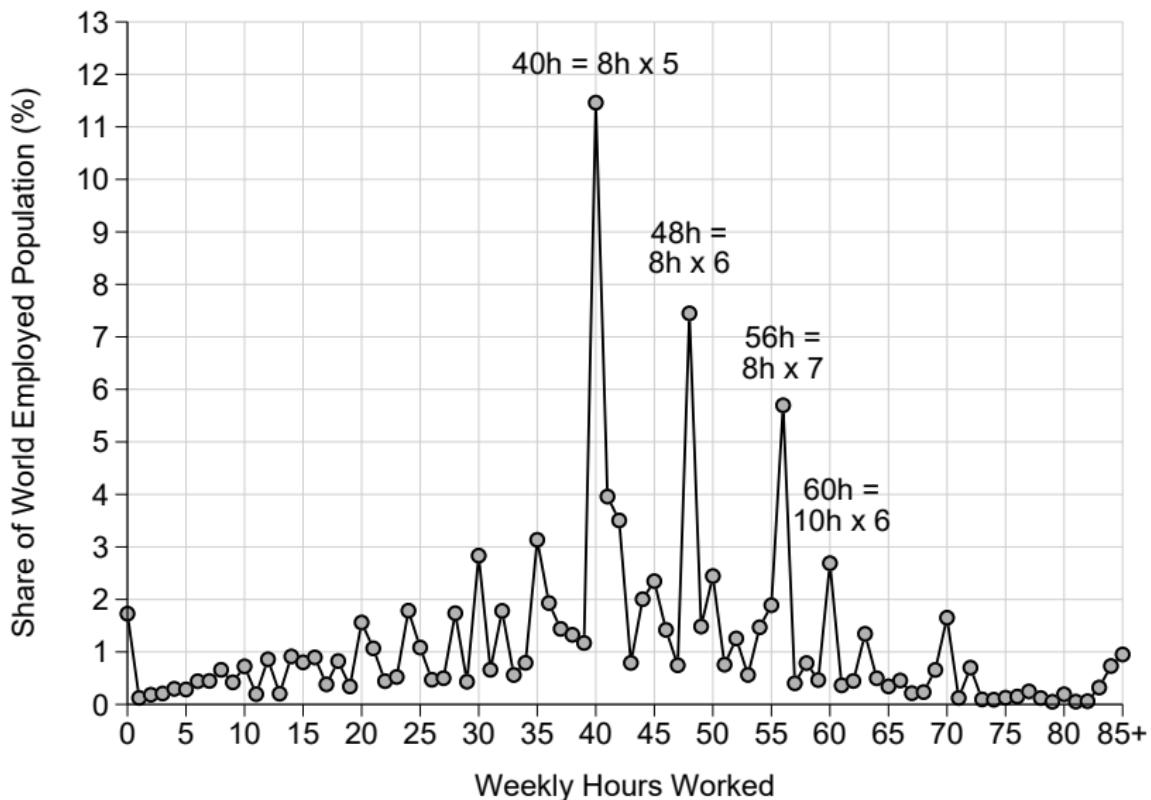
Log Hours and Taxes: Controlling for Social Spending

Social Spending = cash transfers excluding pensions

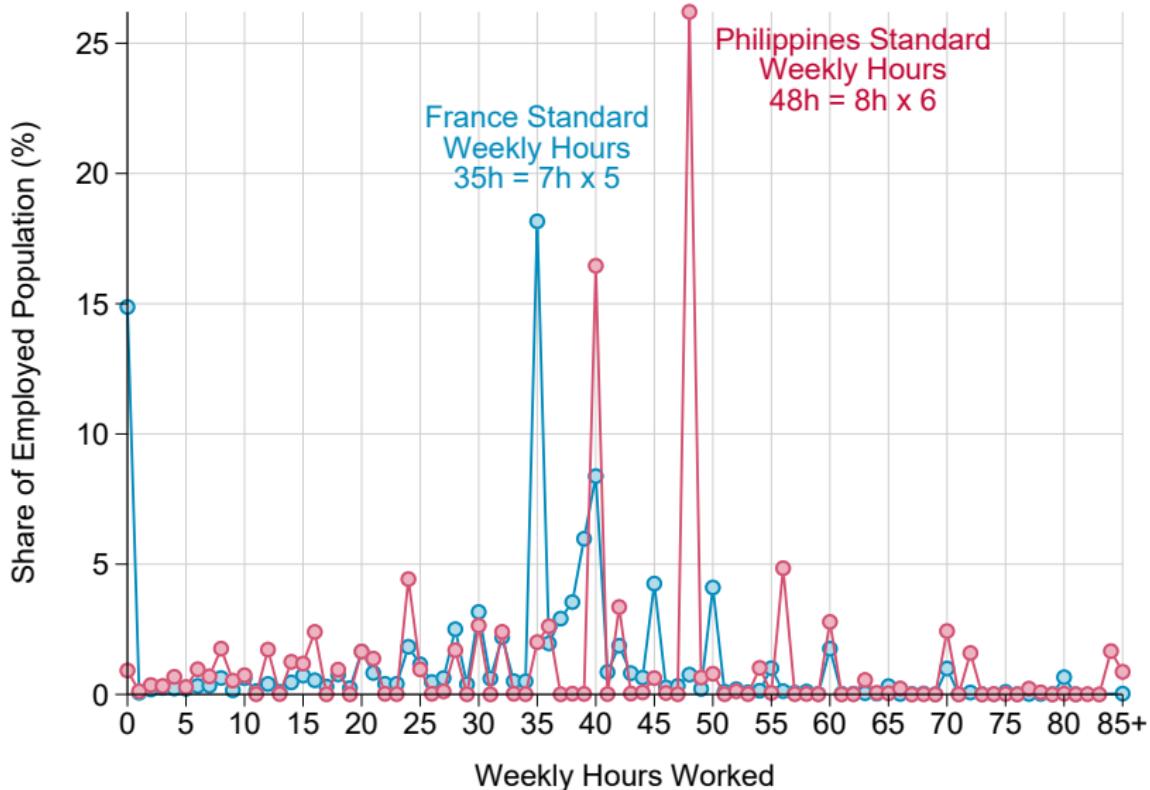
	Hours Per Adult	Hours Per Worker	Employment Rate	Prime-Age Men	Prime-Age Women
Before Controls					
$\log 1 - \tau(L)$	0.85*** (0.16)	0.65*** (0.12)	0.20 (0.13)	0.75*** (0.16)	1.07*** (0.31)
Controlling for Social Spending					
$\log 1 - \tau(L)$	0.44*** (0.15)	0.33*** (0.08)	0.13 (0.15)	0.29** (0.14)	0.73** (0.30)
Social Assistance Spending	-0.028*** (0.011)	-0.022*** (0.006)	-0.005 (0.007)	-0.032*** (0.010)	-0.024* (0.013)
N	126	126	126	126	126

Reduced elasticity of hours wrt $1 - \tau_L$ and large social spending effects:
+1 GDP point reduces hours by 3% (consistent with large income effect).

The World Distribution of Hours: the Role of Norms



Case study on Hours Bunching: France vs. Philippines



Log Hours and Taxes: Controlling for Regulations

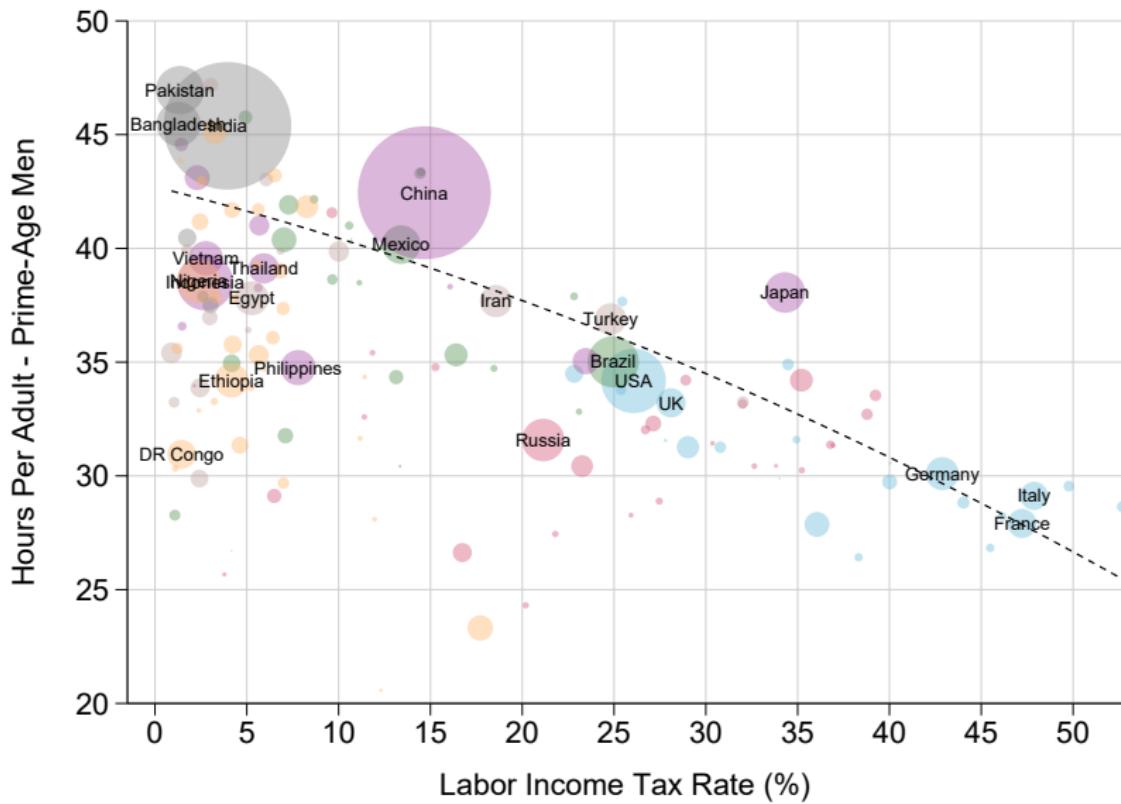
	Hours Per Adult	Hours Per Worker	Employment Rate	Prime-Age Men	Prime-Age Women
Before Controls					
$\log 1 - \tau(L)$	0.85*** (0.16)	0.65*** (0.12)	0.20 (0.13)	0.75*** (0.16)	1.07*** (0.31)
Controlling for Regulations					
$\log 1 - \tau(L)$	0.01 (0.18)	0.40*** (0.12)	-0.33* (0.19)	-0.01 (0.16)	-0.41 (0.50)
Formal Employment	-0.48*** (0.14)	-0.04 (0.10)	-0.39*** (0.14)	-0.42*** (0.14)	-1.04** (0.40)
Labor Regulations Index	-0.23*** (0.09)	-0.13** (0.07)	-0.09 (0.06)	-0.21** (0.09)	-0.28 (0.19)
N	126	126	126	126	126

Share formal and regulations depress hours of work and eliminate the elasticity of hours wrt $1 - \tau_L$. Development of social state correlated with development of working hours regulations. Exact causation not obvious.

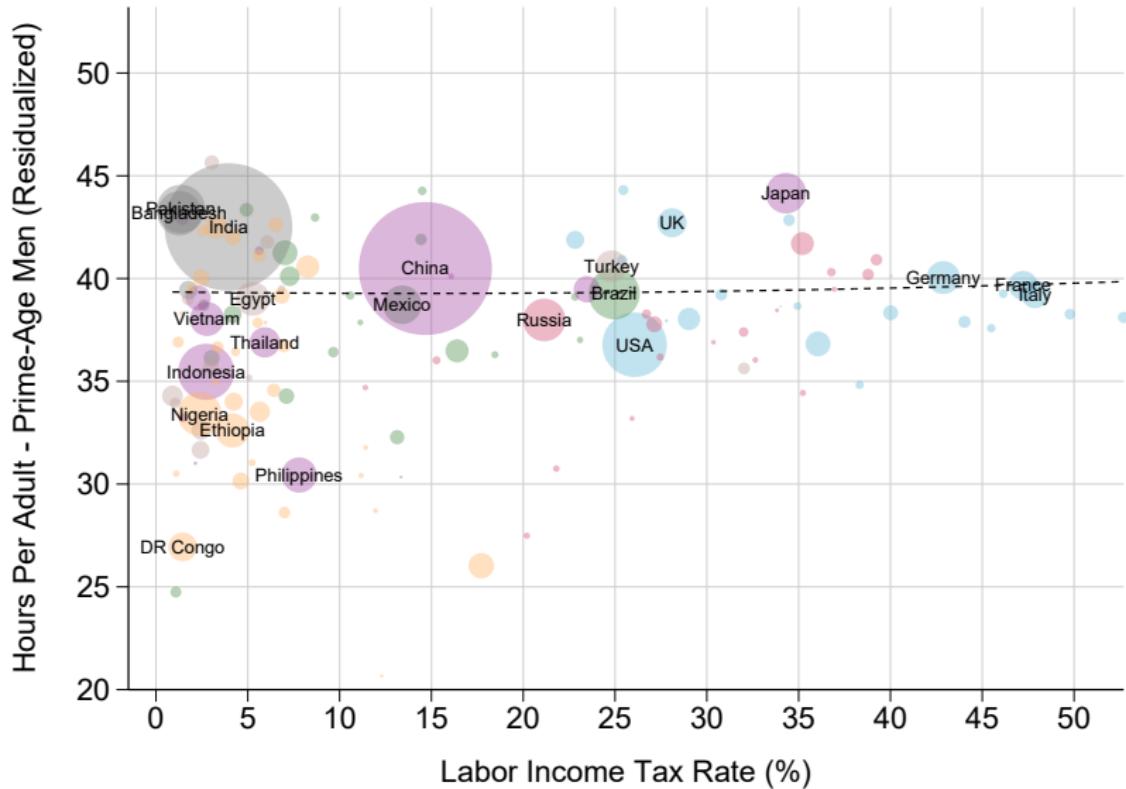
Prime-Age Log Hours and Taxes: Controlling for Both

	Hours Per Adult	Hours Per Worker	Employment Rate	Prime-Age Men	Prime-Age Women
Before Controls					
$\log 1 - \tau(L)$	0.85*** (0.16)	0.65*** (0.12)	0.20 (0.13)	0.75*** (0.16)	1.07*** (0.31)
Controlling for Social Spending and Regulations					
$\log 1 - \tau(L)$	-0.10 (0.19)	0.26** (0.13)	-0.28 (0.19)	-0.15 (0.17)	-0.37 (0.48)
Social Assistance Spending	-0.015* (0.008)	-0.022*** (0.005)	0.006 (0.005)	-0.021** (0.008)	0.006 (0.015)
Formal Employment	-0.40*** (0.14)	0.07 (0.09)	-0.42*** (0.14)	-0.31** (0.13)	-1.07** (0.44)
Labor Regulations Index	-0.21*** (0.07)	-0.10** (0.04)	-0.10 (0.06)	-0.18*** (0.06)	-0.29 (0.19)
N	126	126	126	126	126

Working Hours vs. Labor Income Taxes, Prime-Aged Men



Working Hours vs. Labor Income Taxes, Prime-Aged Men, Conditioning on Social Spending & Formality



Conclusion

This Paper: A New Global Database on Working Hours by age, gender, sector in 160 countries.

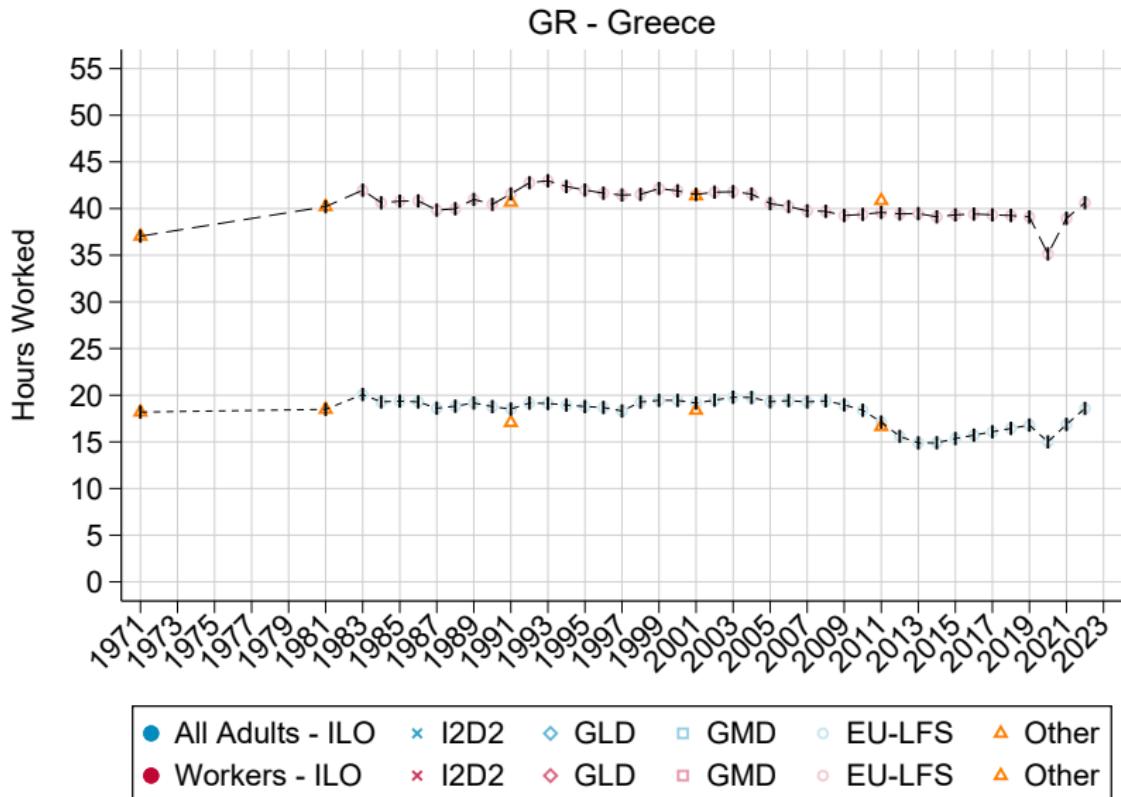
Global Historical Correlates of Hours Worked:

- 1) Education (young) and pension systems (elderly).
- 2) Cultural norms (gender).
- 3) Structural change from agriculture to industry/services
- 4) Labor income taxes / transfers / working regulations.
- 5) Little independent effect of economic development.

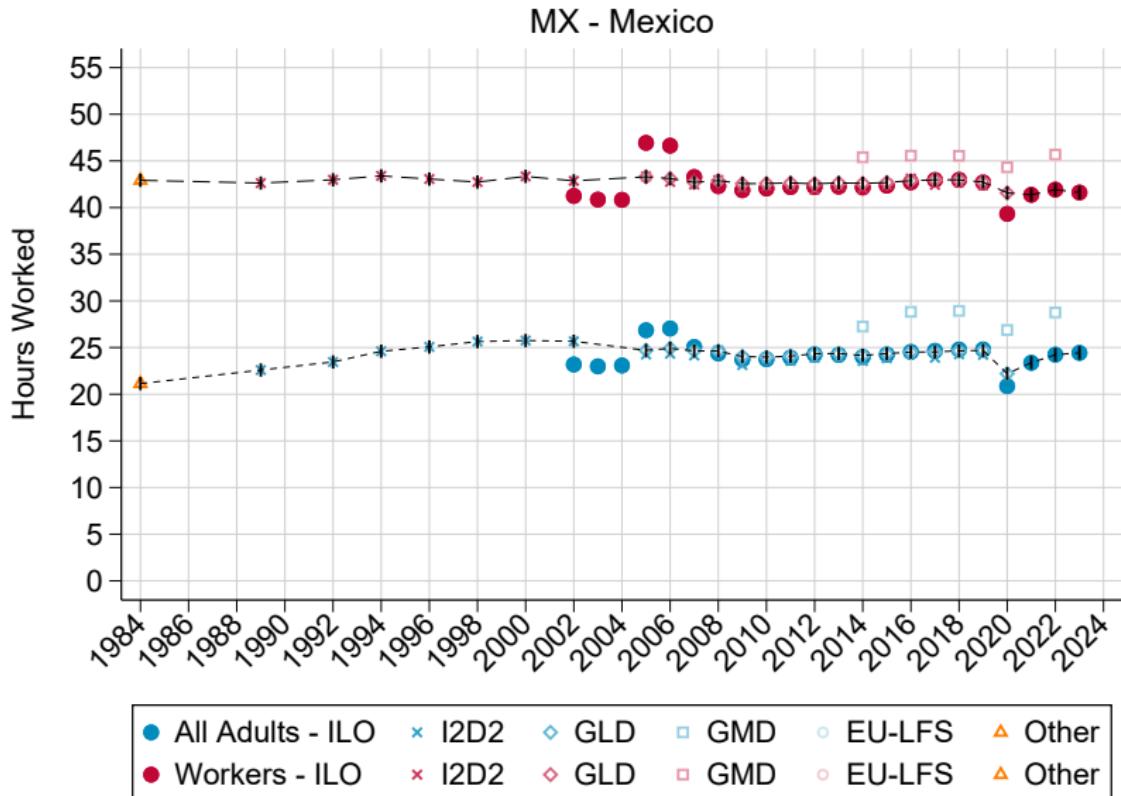
→ **Collective choices powerfully shape working hours over and above pure economic factors.**

Thank You!

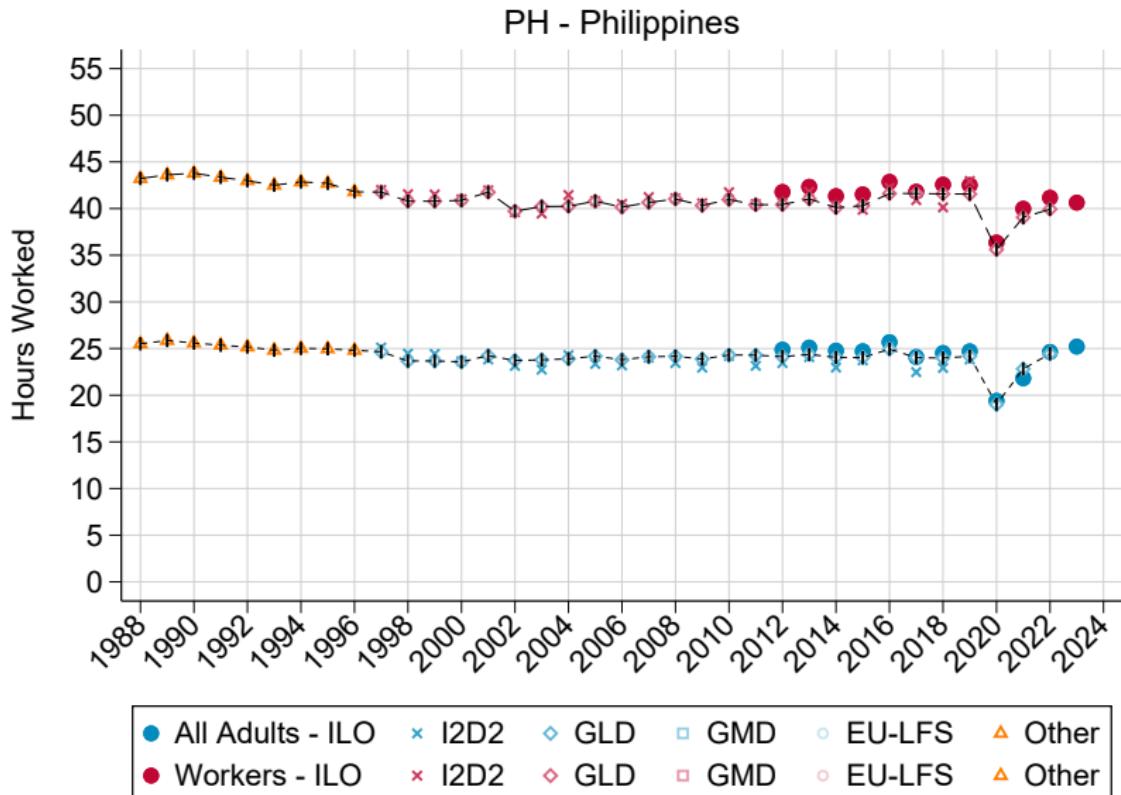
Data Harmonization Example: Greece

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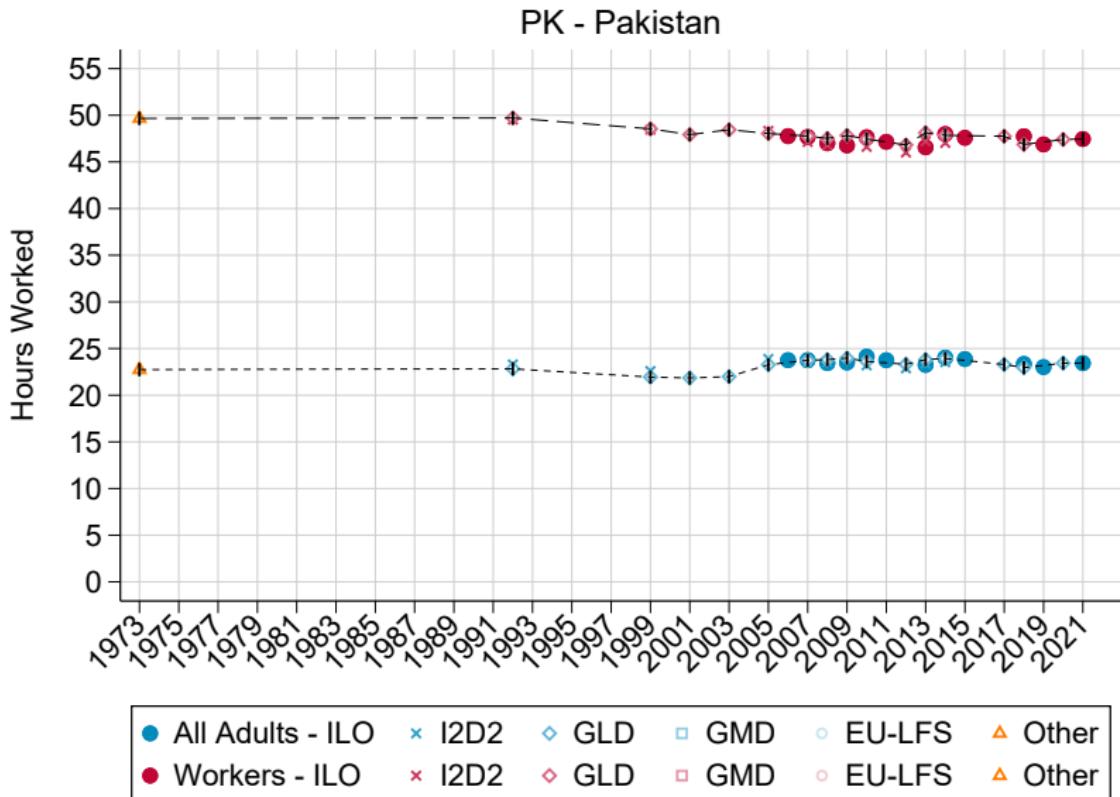
Data Harmonization Example: Mexico

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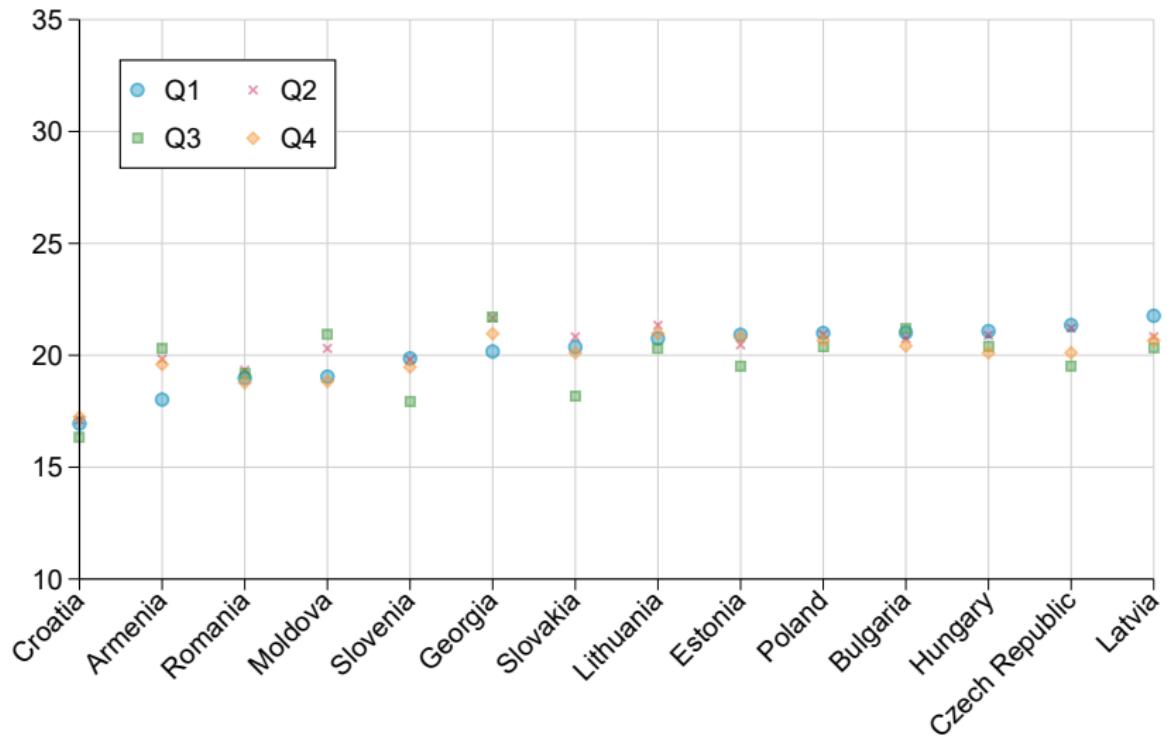
Data Harmonization Example: Philippines

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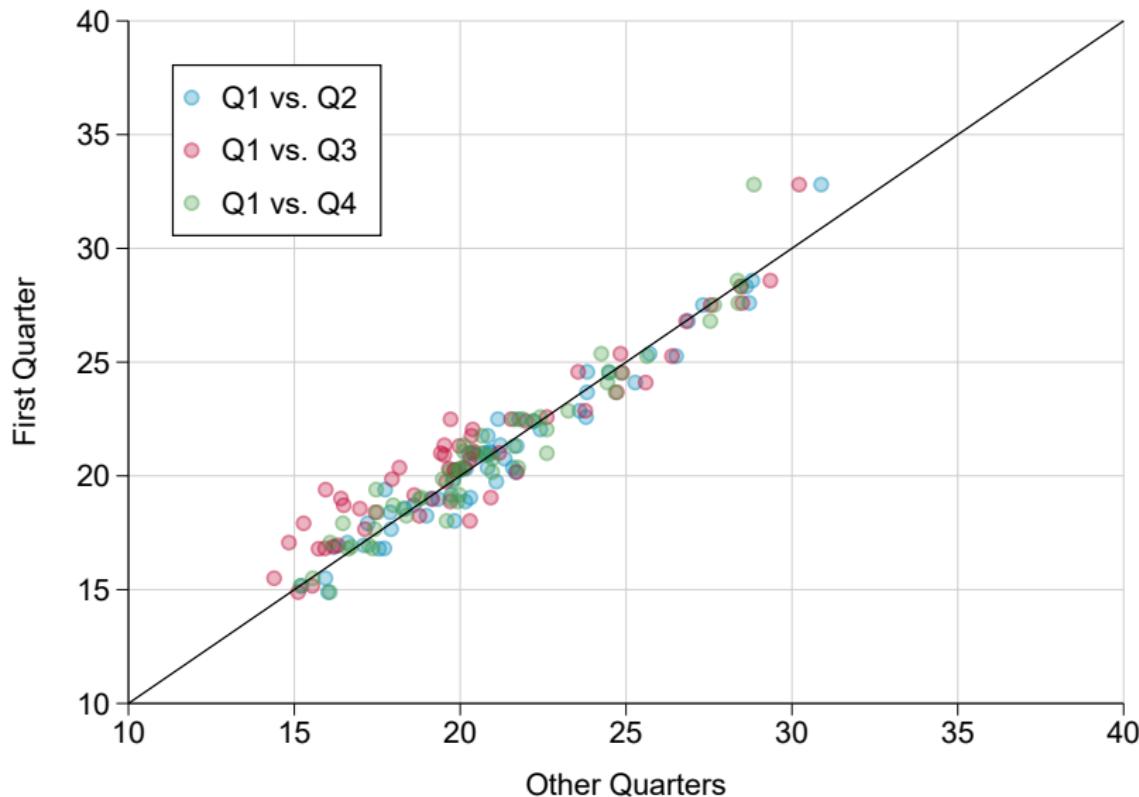
Data Harmonization Example: Pakistan

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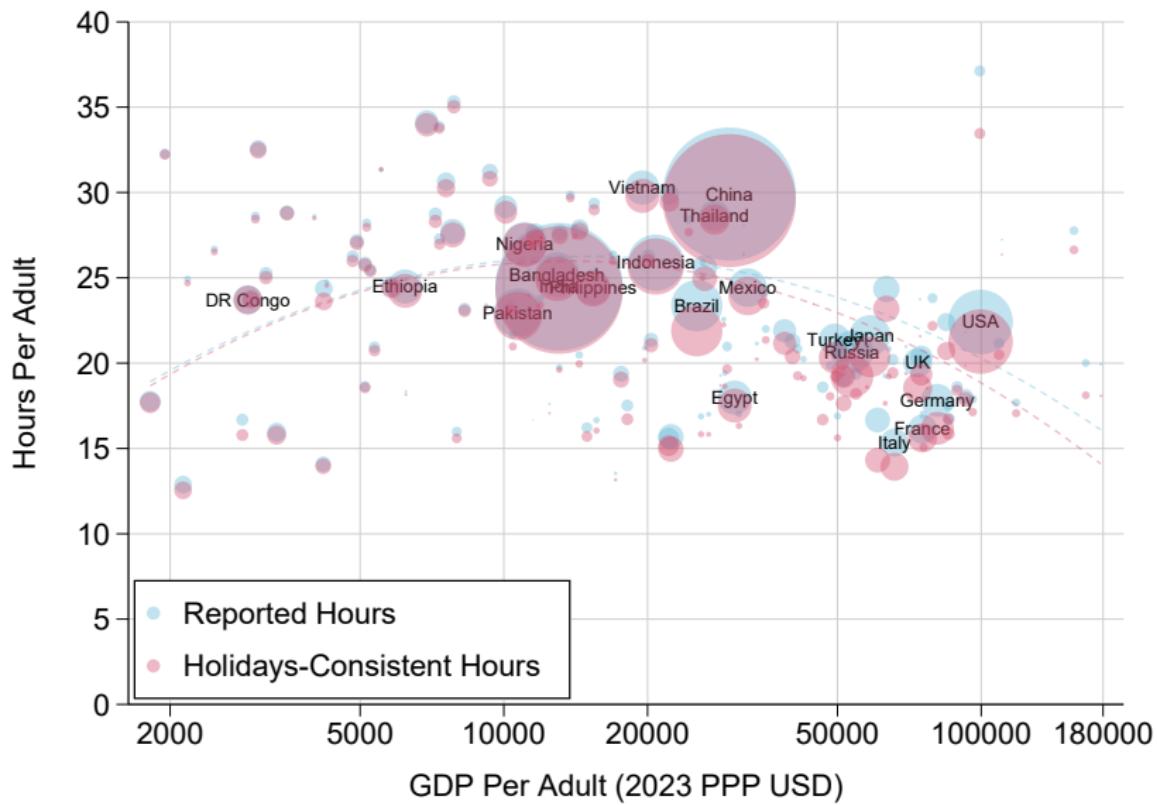
Seasonality: Hours by Quarter, Eastern Europe

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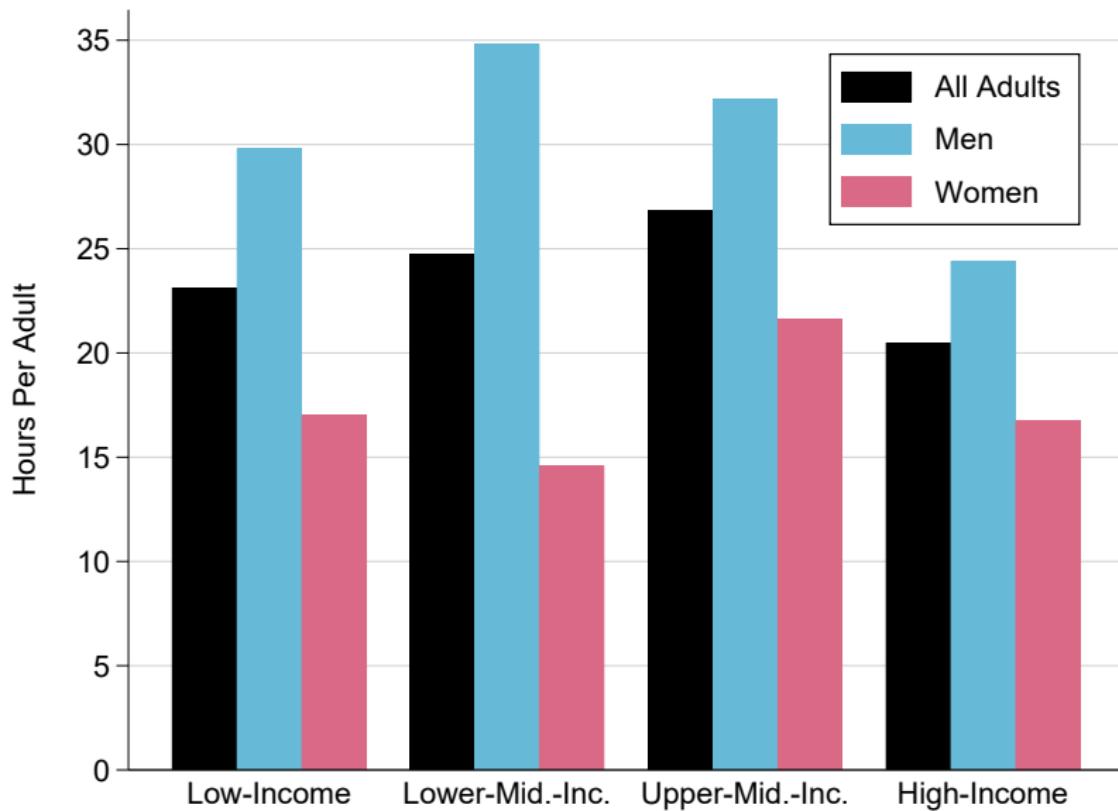
Seasonality: Correlation Across Quarters in Hours

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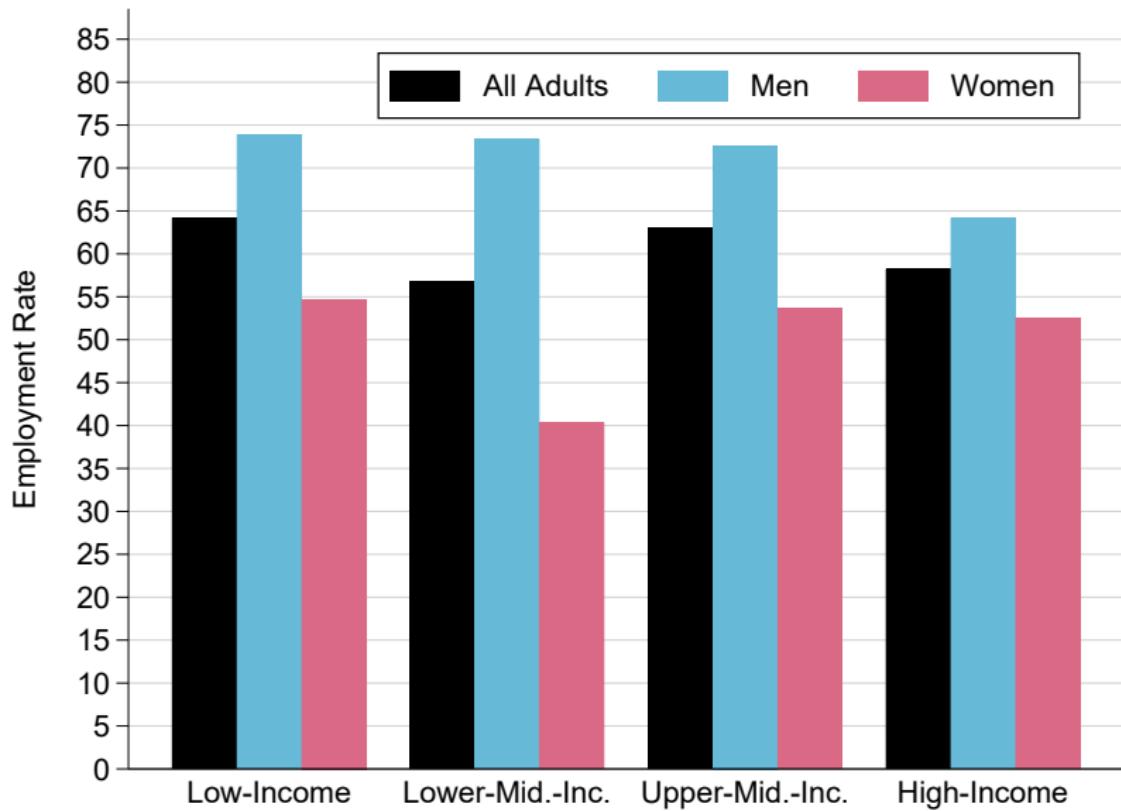
Observed vs. Holidays-Consistent Hours Worked



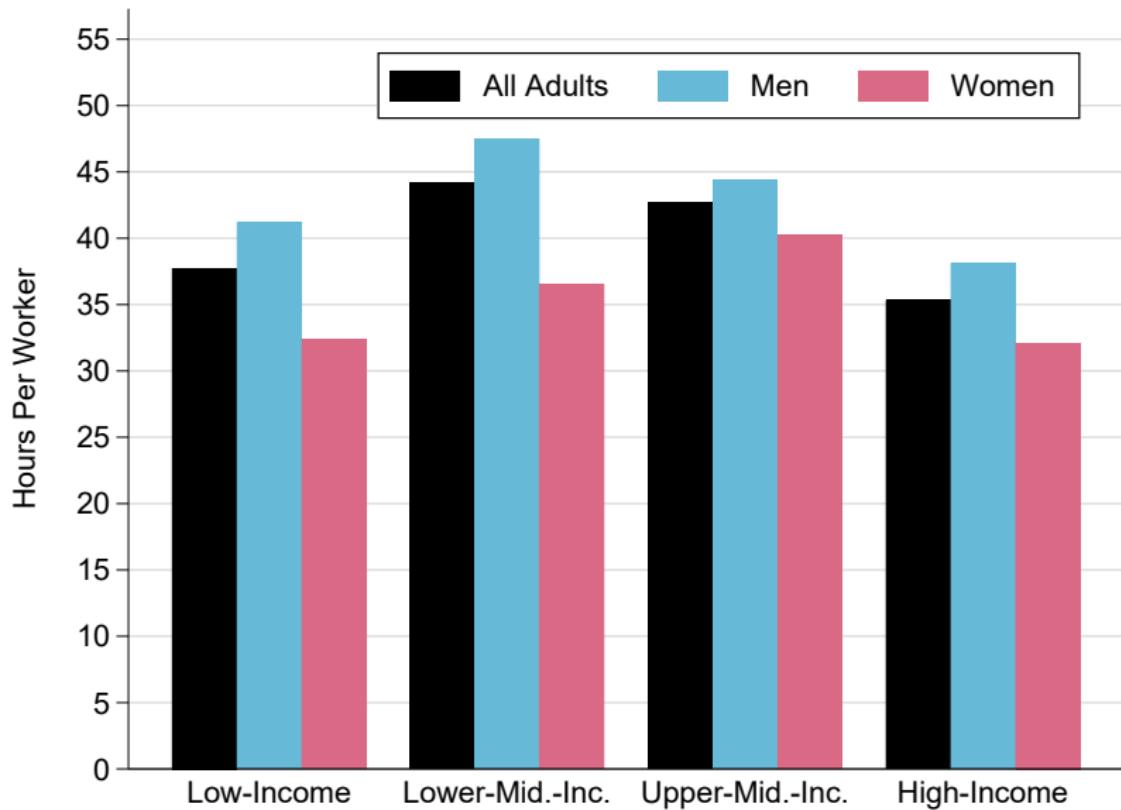
Hours by Gender and Development



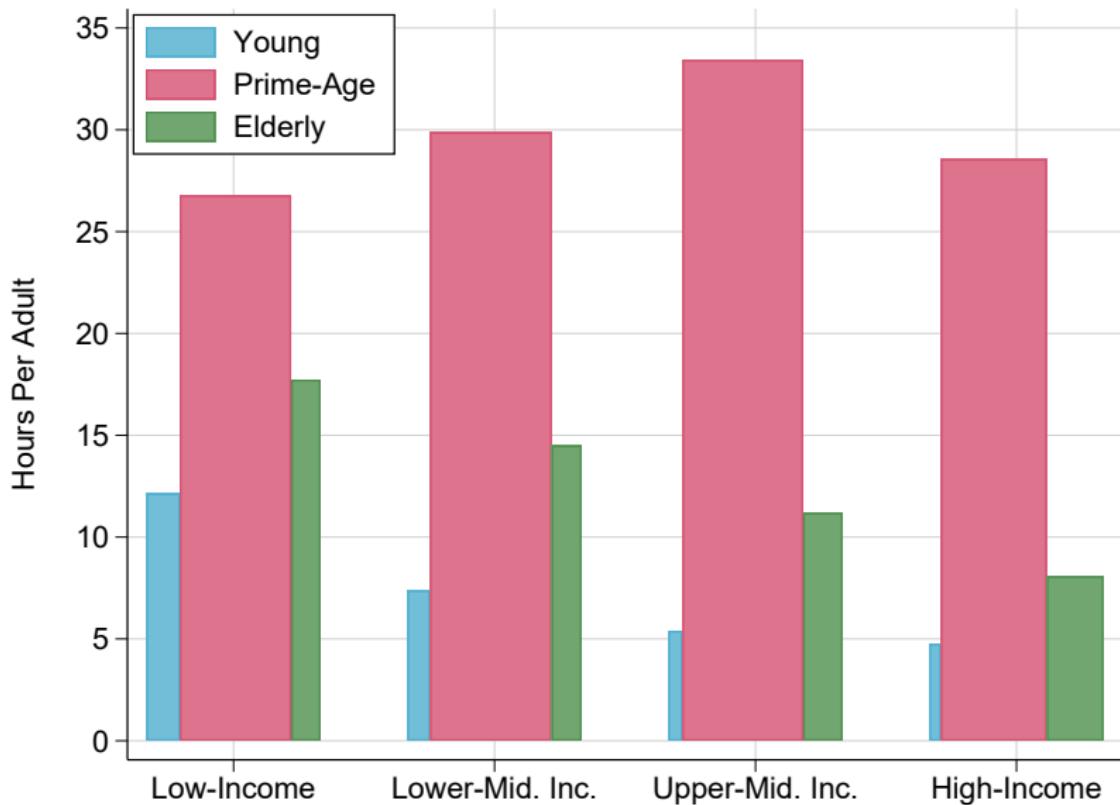
Hours by Gender and Development: Extensive Margin



Hours by Gender and Development: Intensive Margin



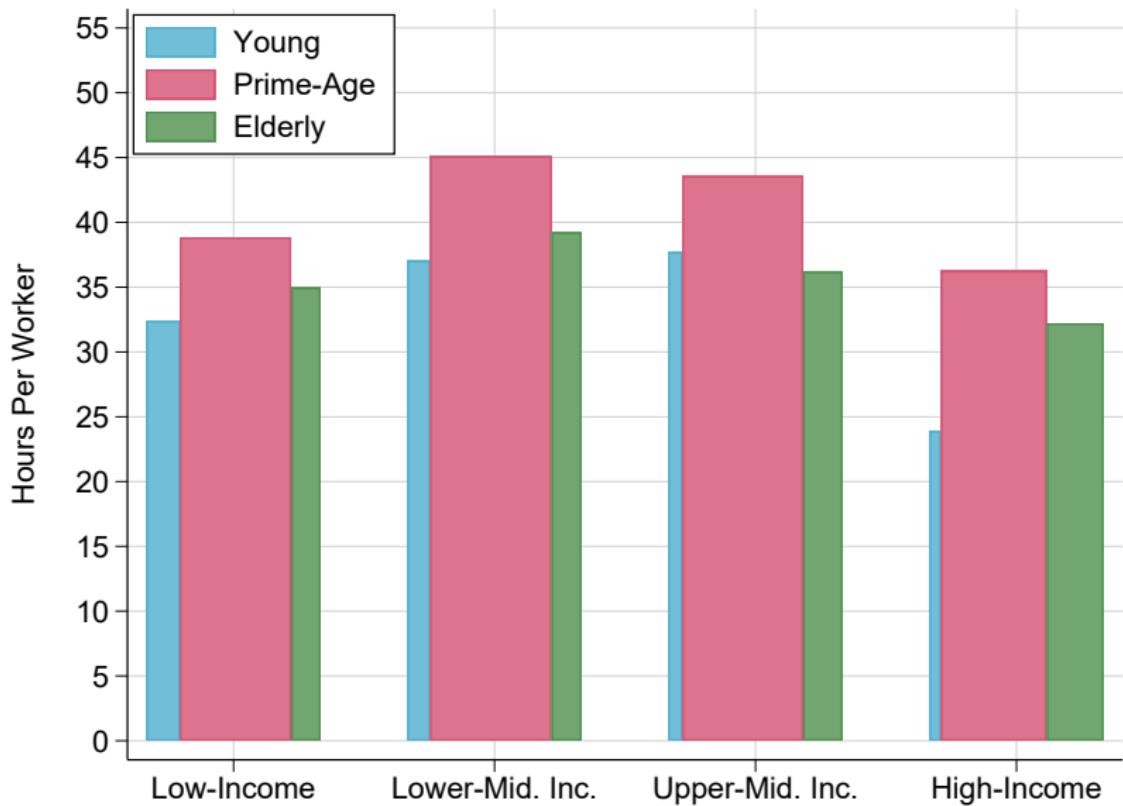
Hours by Age and Development



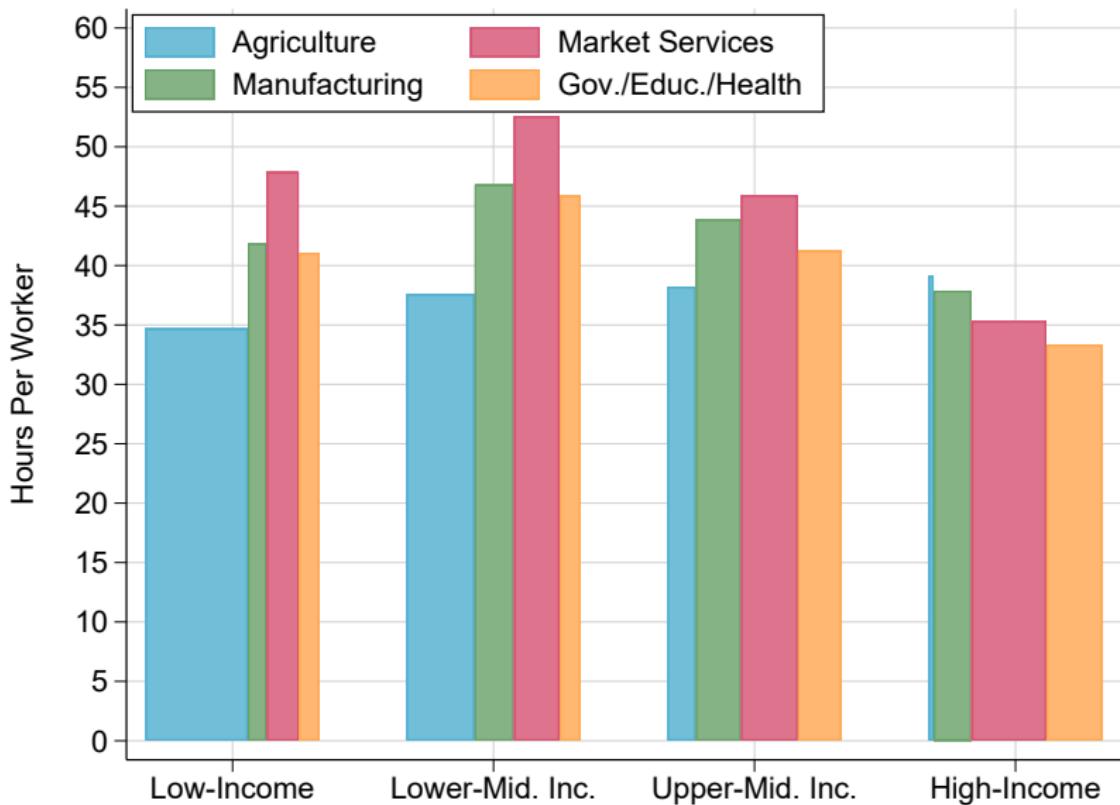
Hours by Age and Development: Extensive Margin



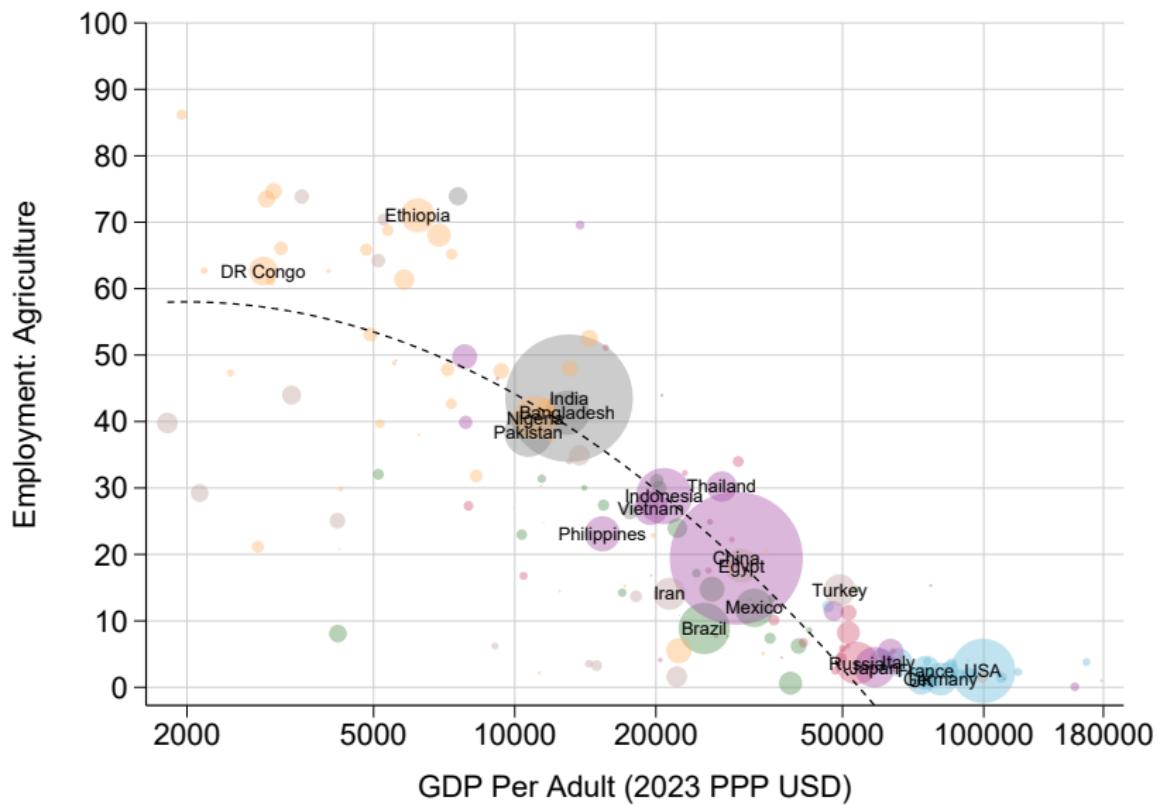
Hours by Age and Development: Intensive Margin



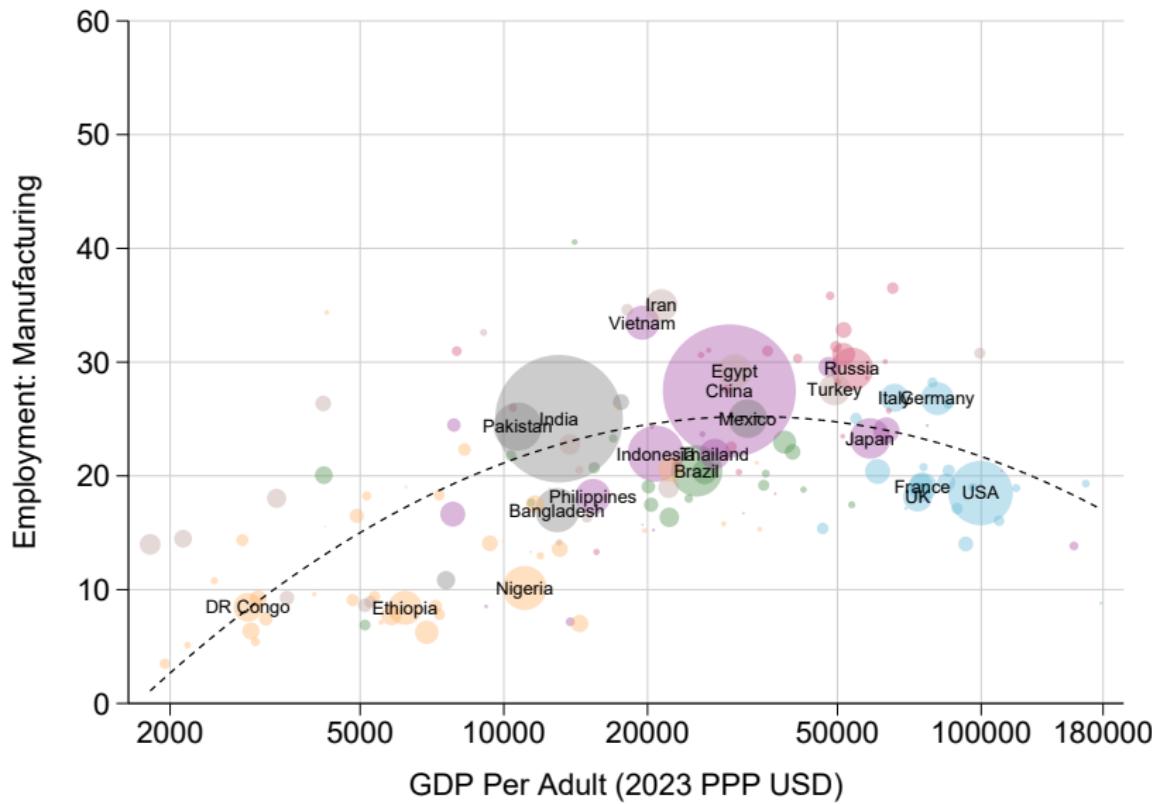
Hours by Sector and Development



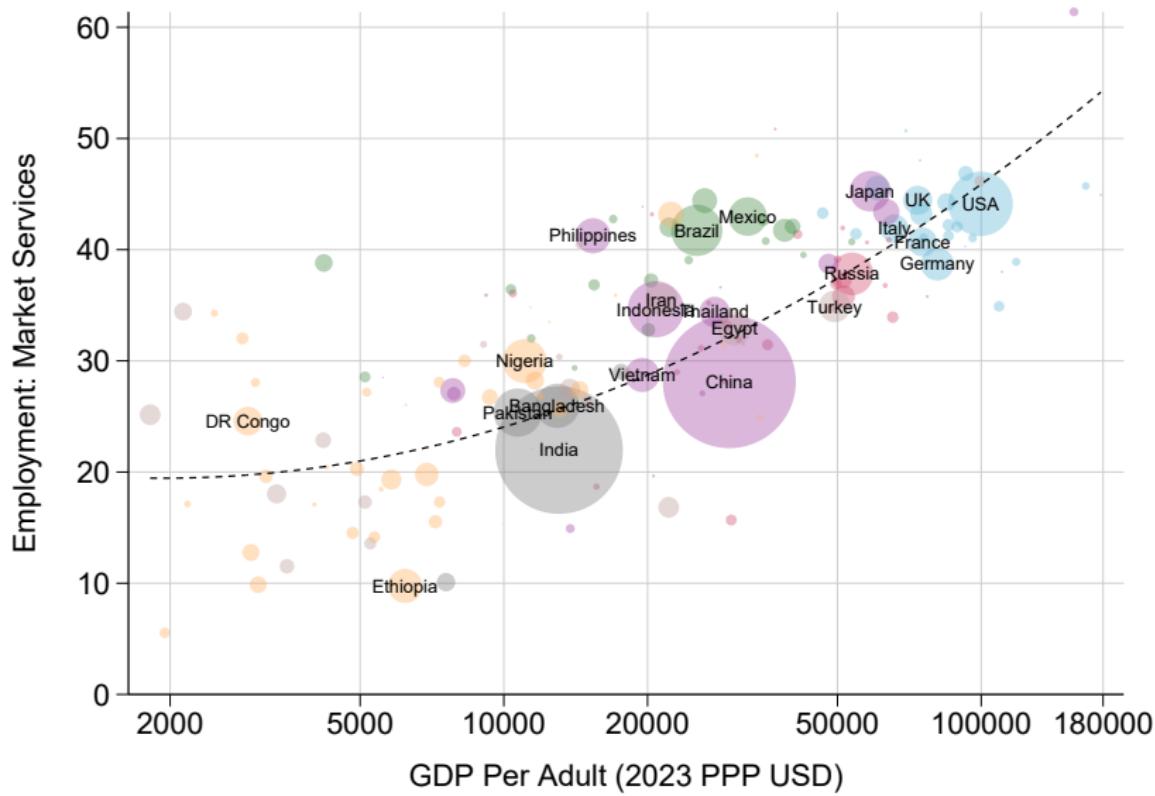
Employment by Sector: Agriculture



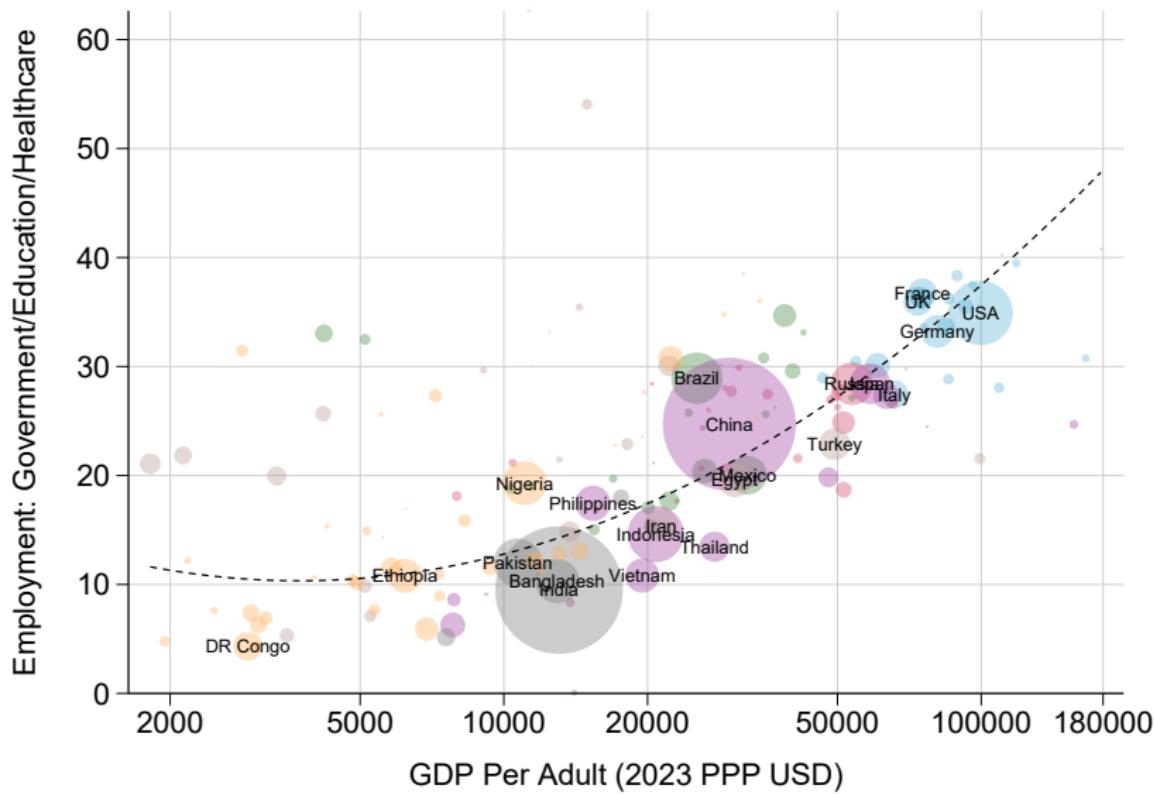
Employment by Sector: Manufacturing



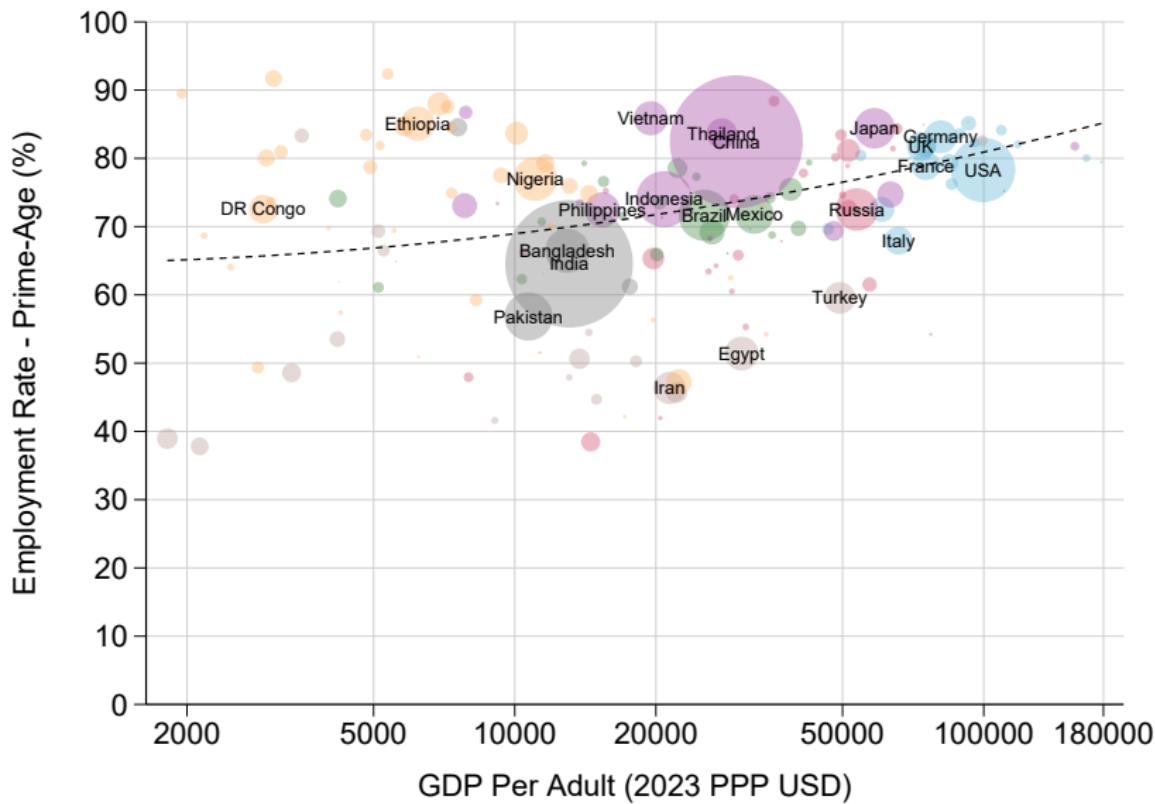
Employment by Sector: Market Services



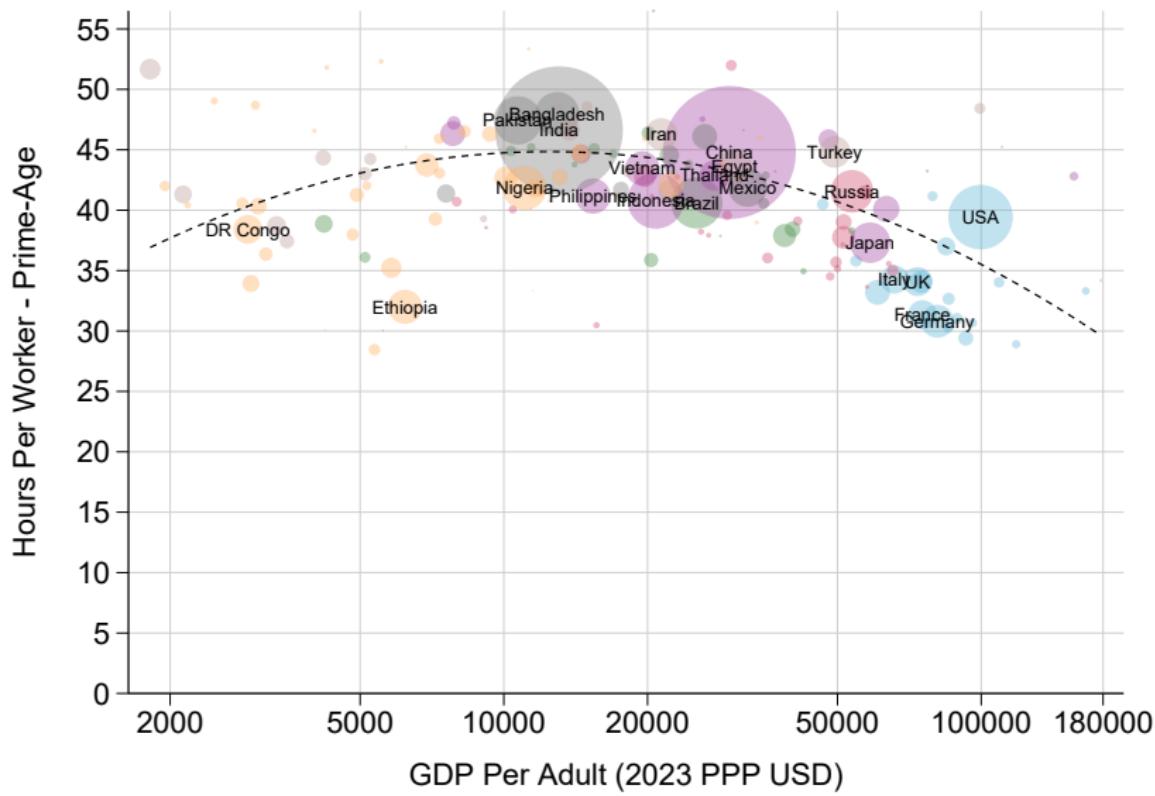
Employment by Sector: Non-Market Services



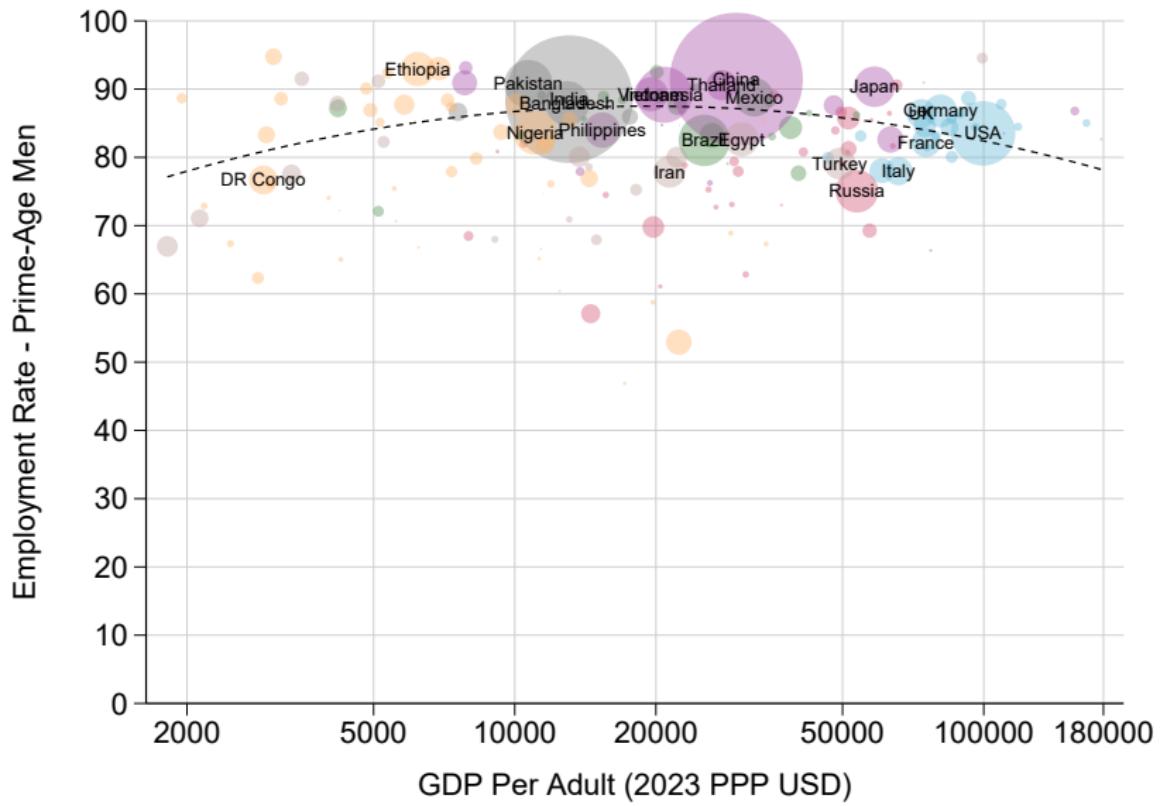
Prime-Age Hours and Development: Extensive Margin



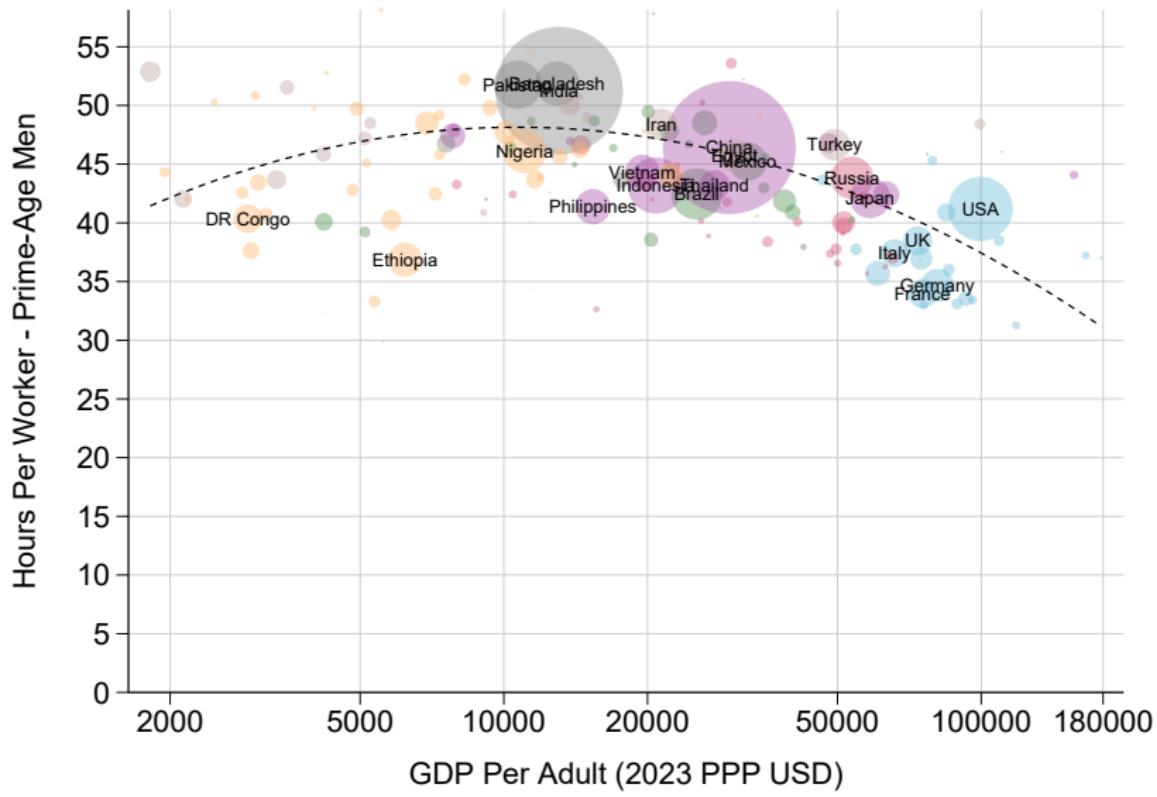
Prime-Age Hours and Development: Intensive Margin



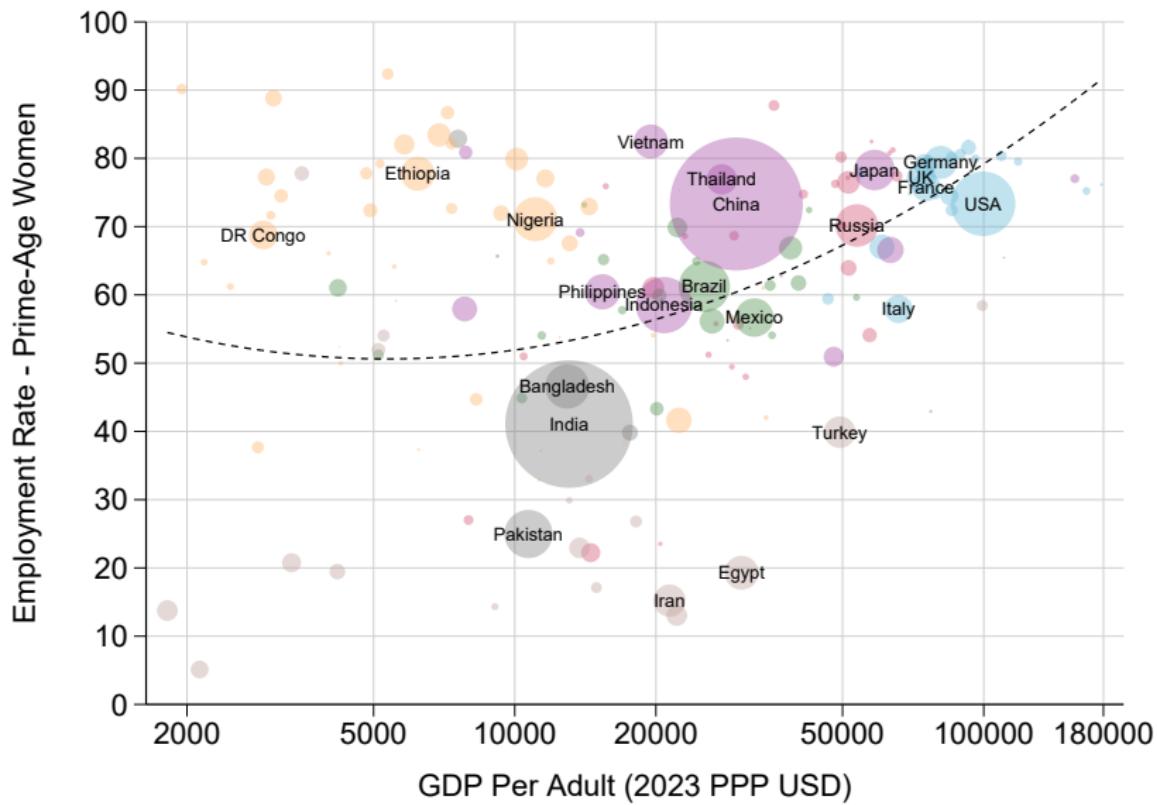
Prime-Age Male Hours and Dvt: Extensive Margin



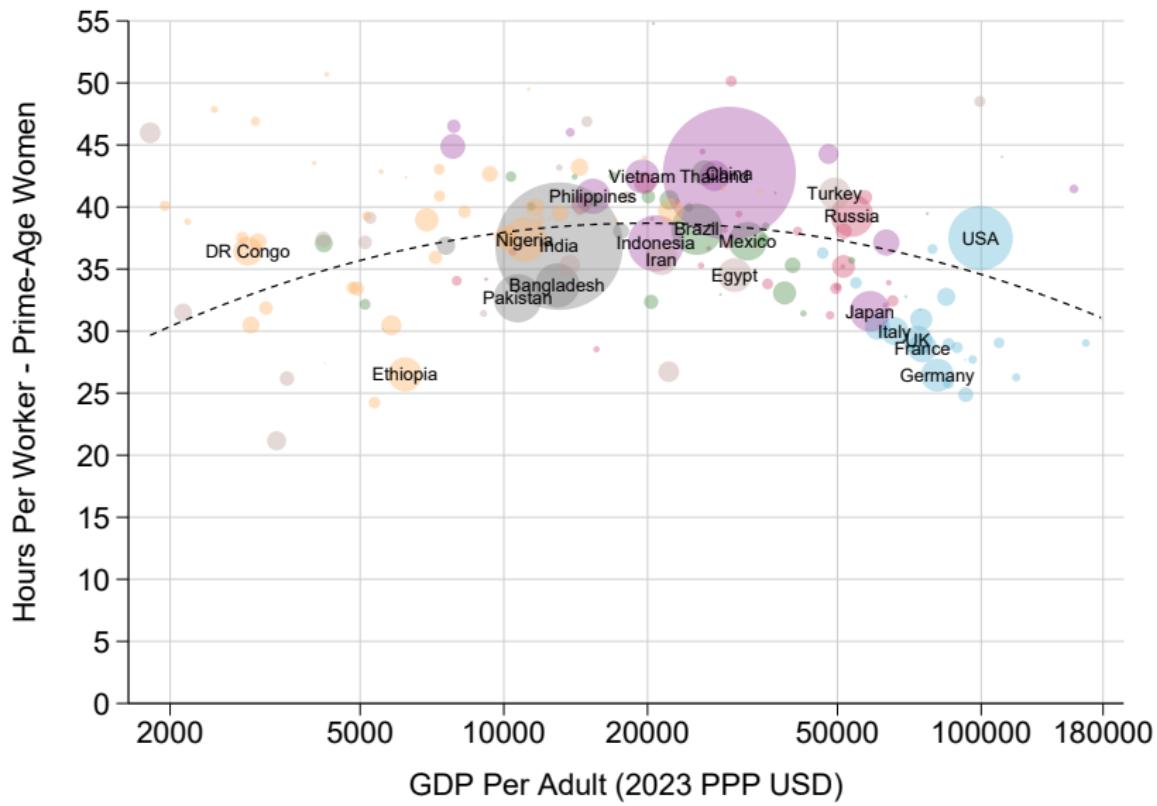
Prime-Age Male Hours and Dvt: Intensive Margin



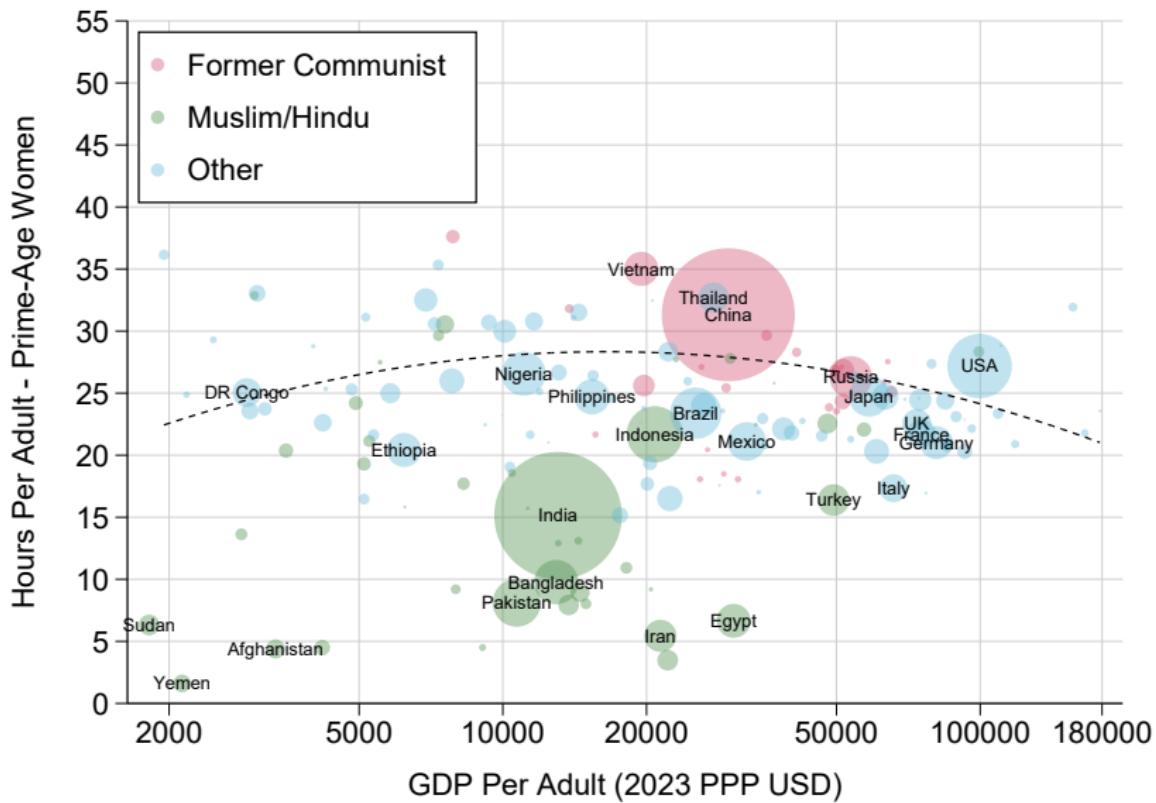
Prime-Age Female Hours and Dvt: Extensive Margin



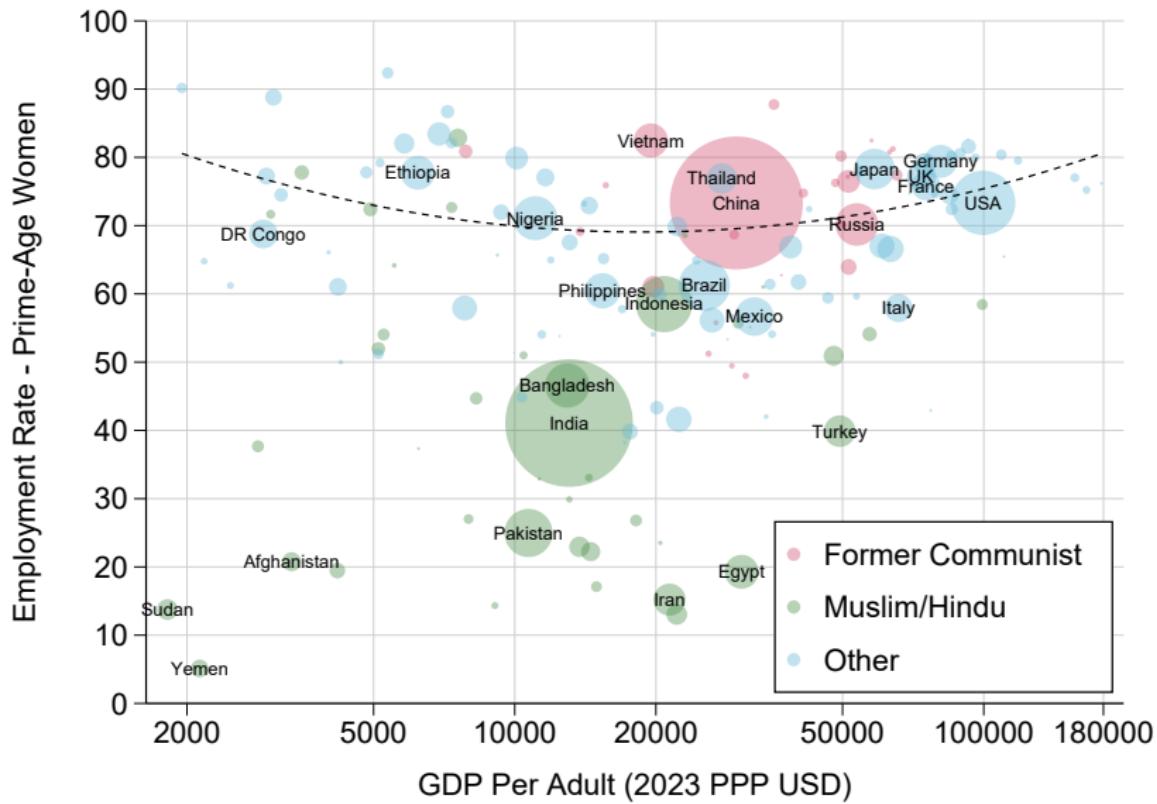
Prime-Age Female Hours and Dvt: Intensive Margin



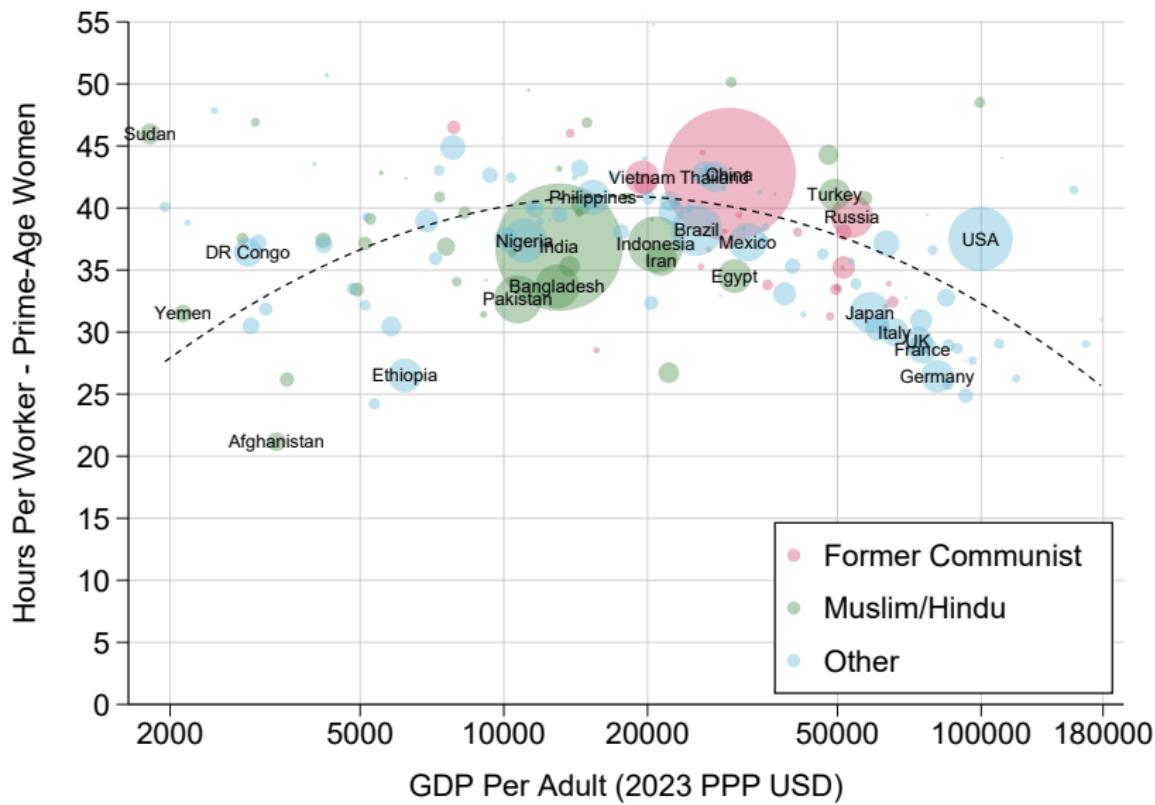
Female Hours excl. Muslim/Hindu



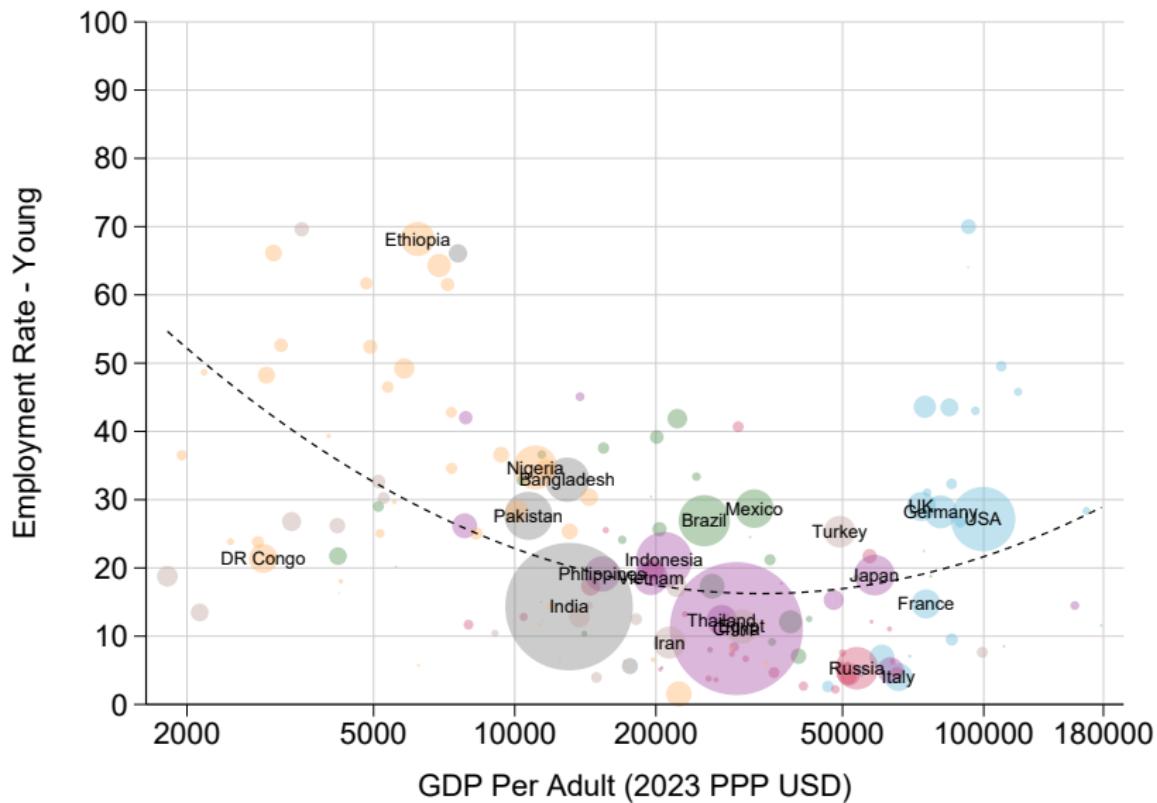
Female Hours excl. Muslim/Hindu: Extensive Margin



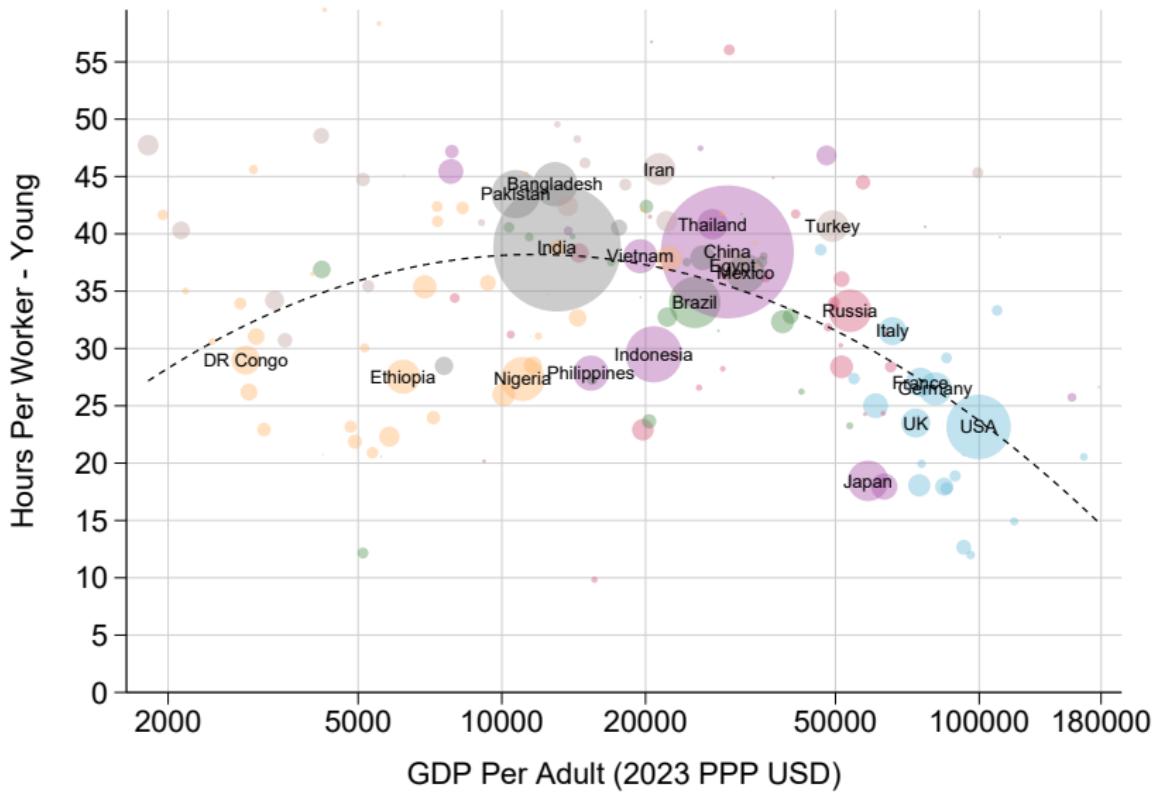
Female Hours excl. Muslim/Hindu: Intensive Margin



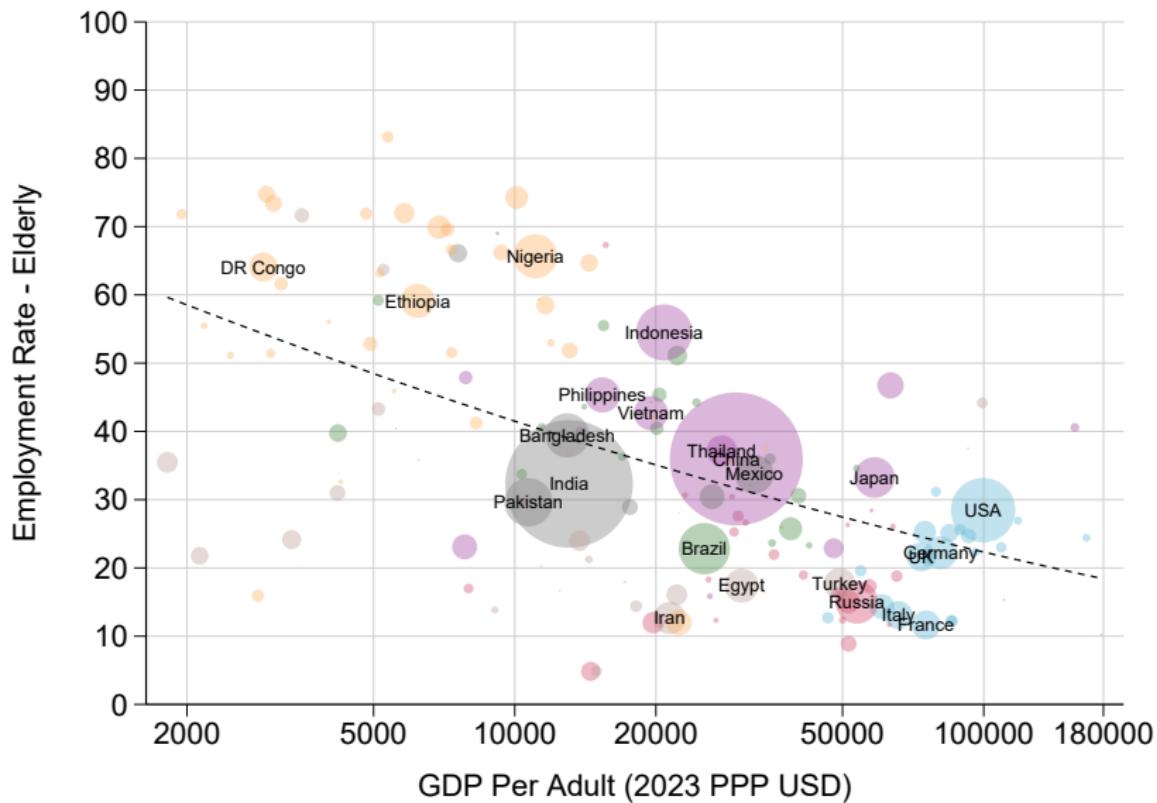
Young Hours and Development: Extensive Margin



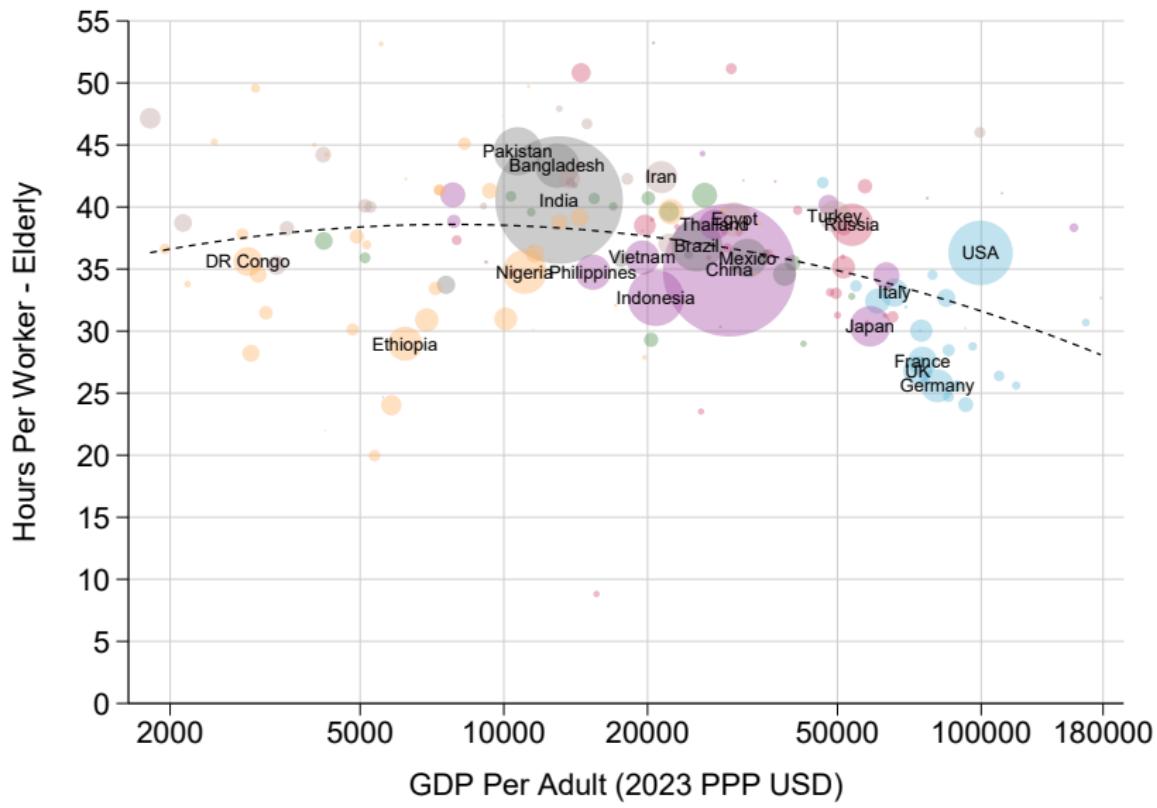
Young Hours and Development: Intensive Margin



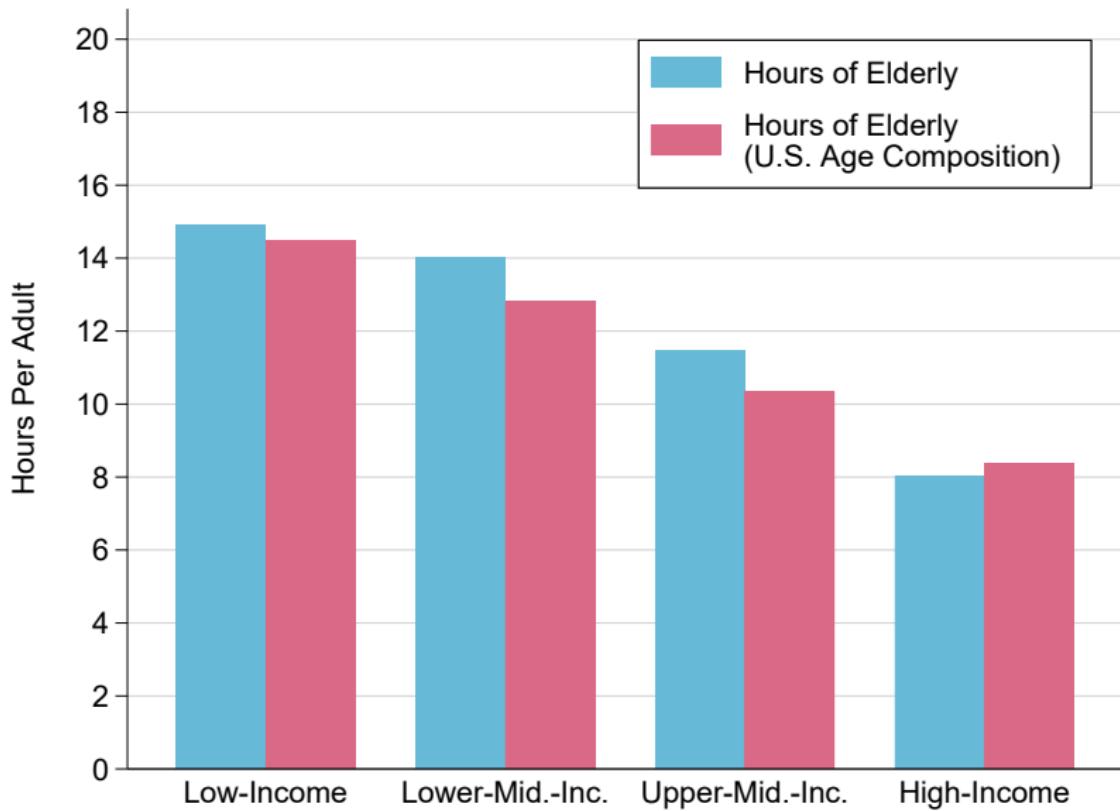
Elderly Hours and Development: Extensive Margin



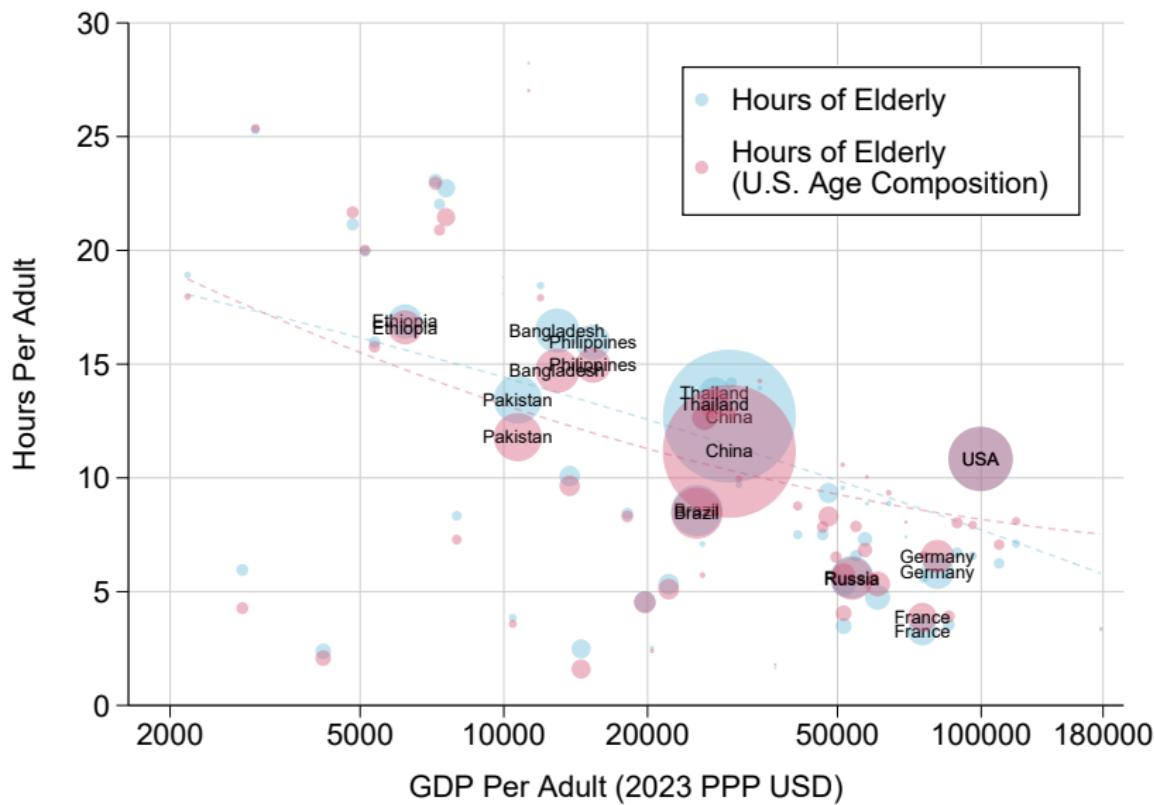
Elderly Hours and Development: Intensive Margin



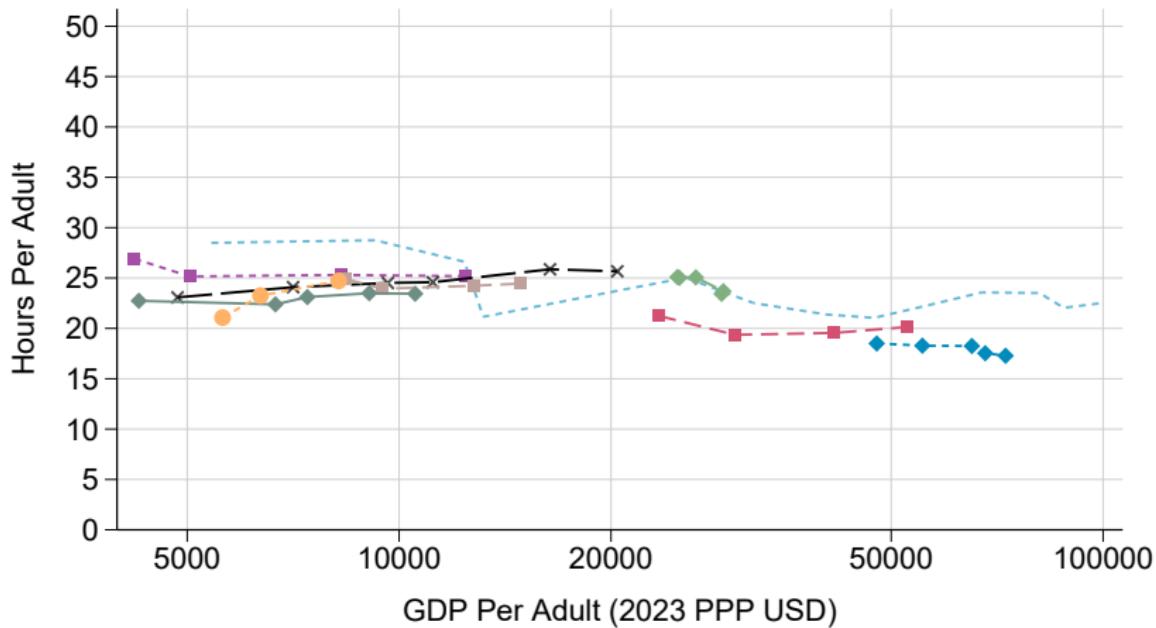
Hours of the Elderly and the Age Structure



Hours of the Elderly and the Age Structure

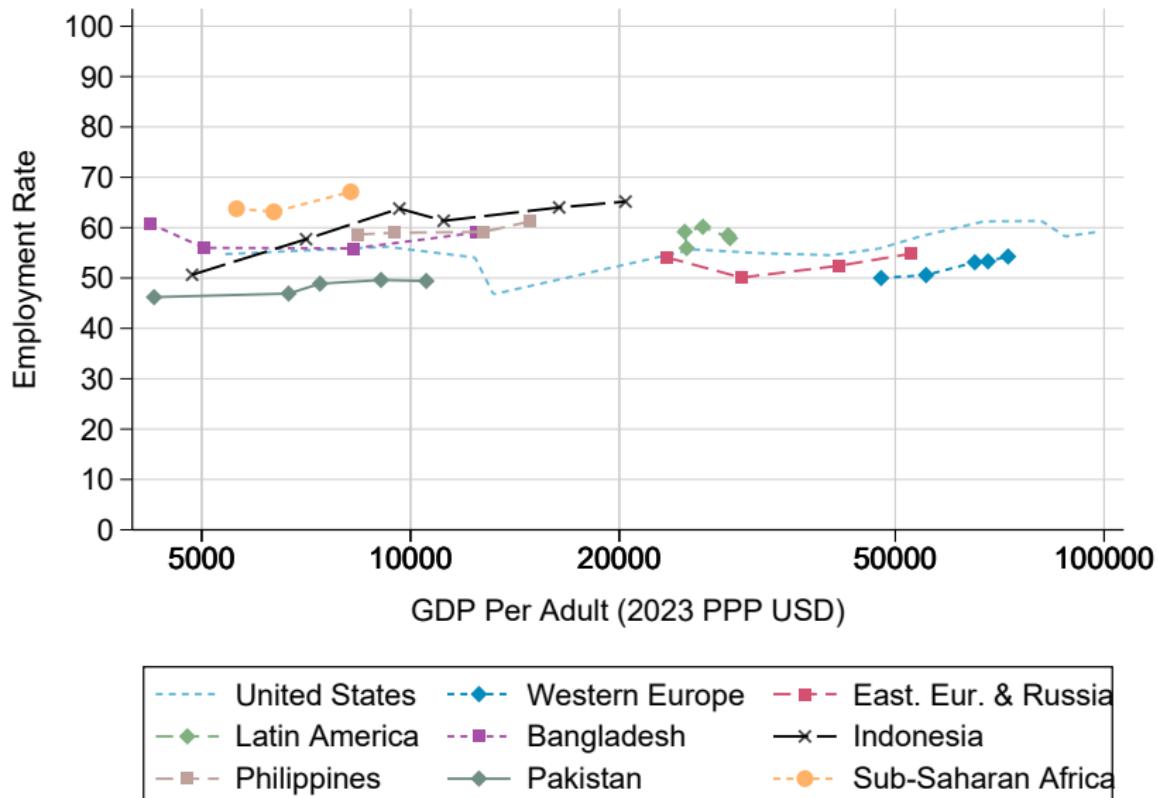


Trends in Hours per Adult

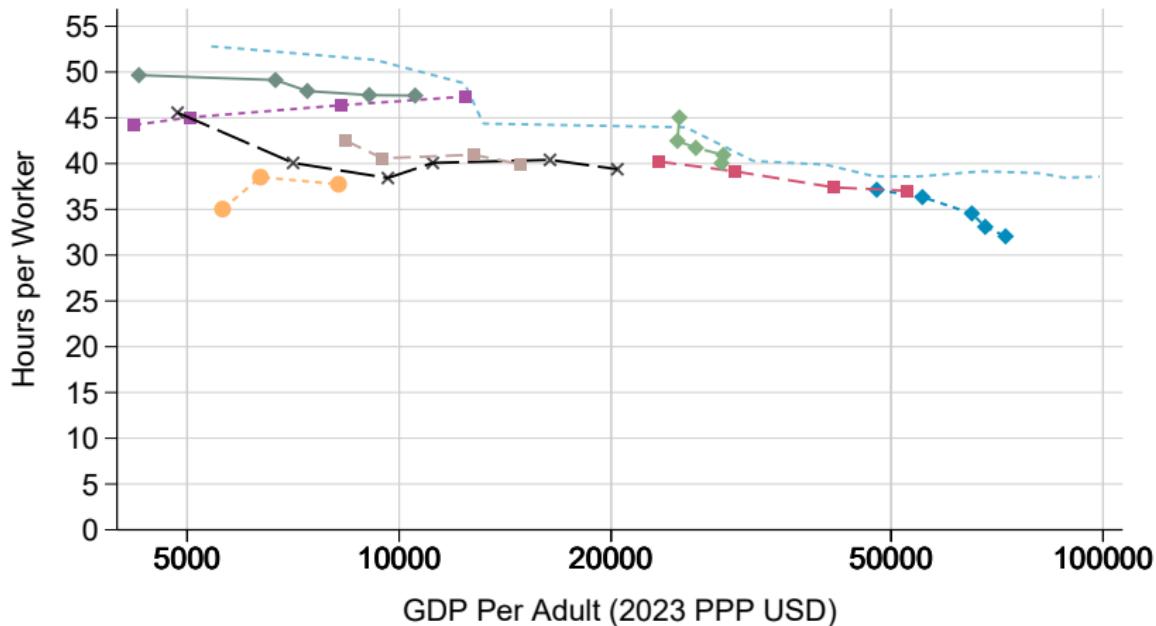


-----	United States	-----	Western Europe	-----	East. Eur. & Russia
-◆-		-◆-		-■-	
-◆-	Latin America	-◆-	Bangladesh	-◆-	Indonesia
-■-	Philippines	-◆-	Pakistan	-○-	Sub-Saharan Africa

Trends in Hours per Adult: Extensive Margin

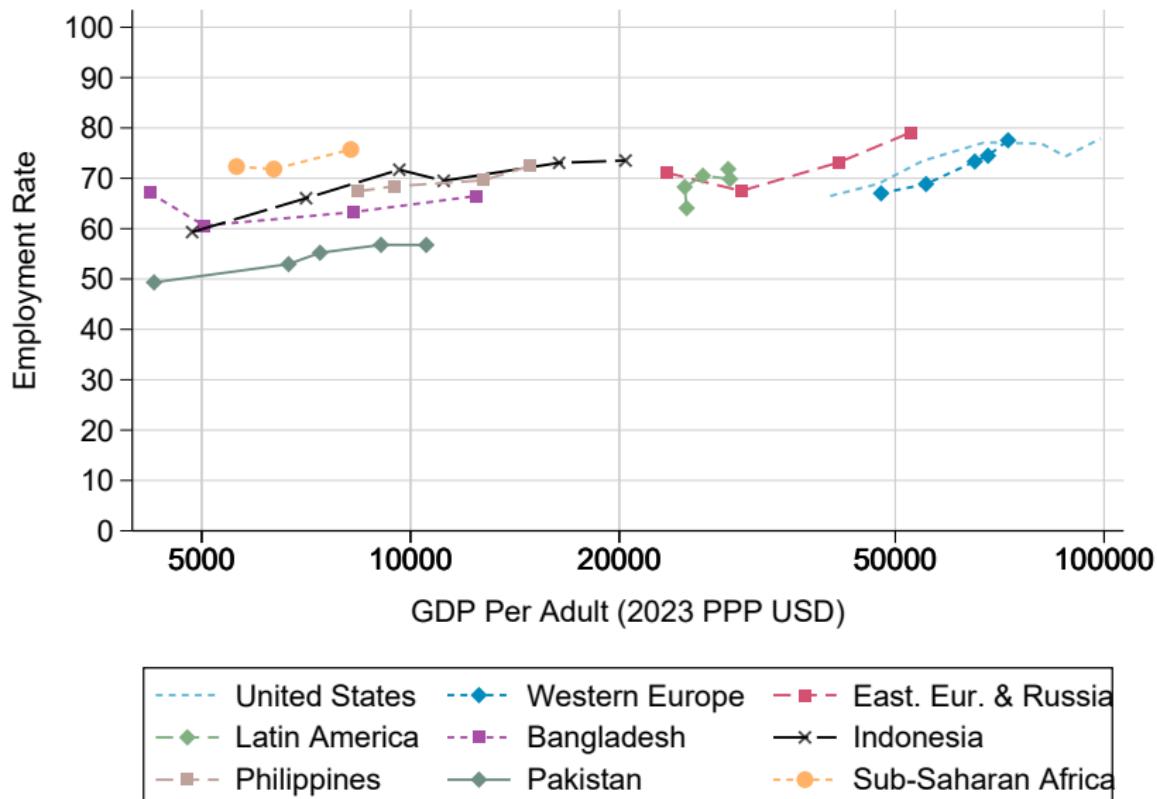


Trends in Hours per Adult: Intensive Margin

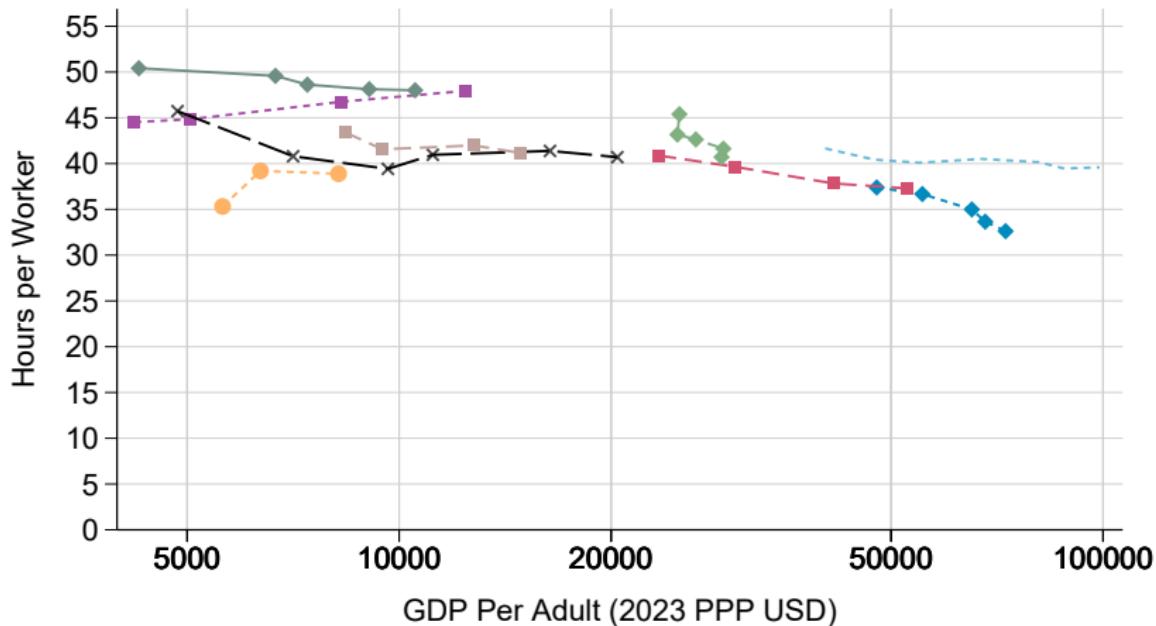


United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Trends in Prime-Age Hours: Extensive Margin

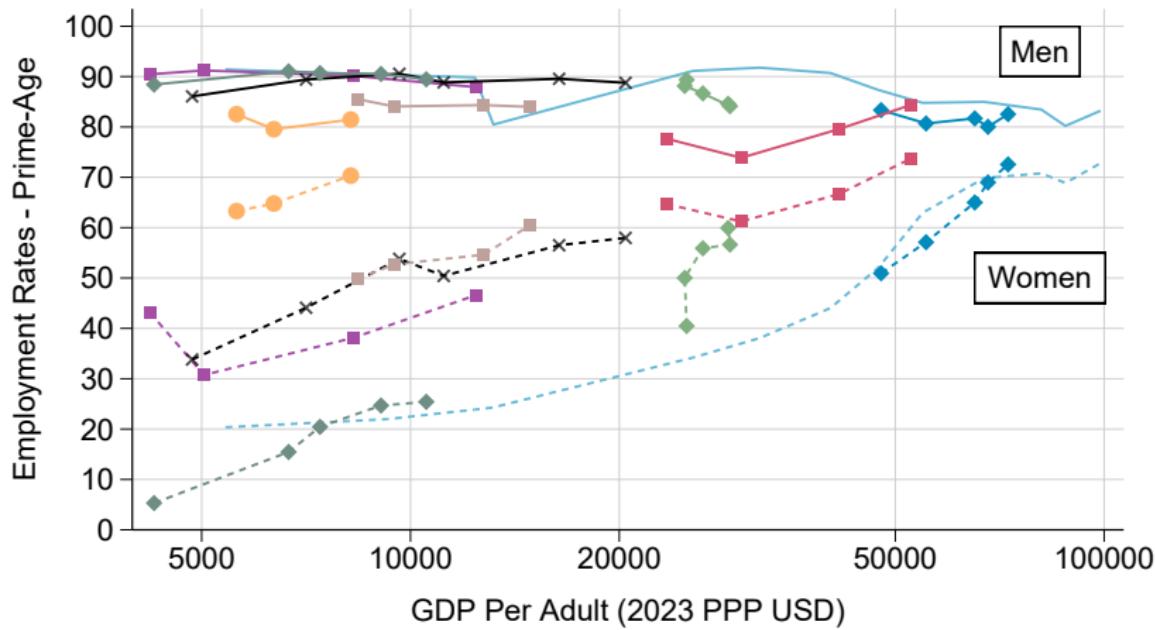


Trends in Prime-Age Hours: Intensive Margin



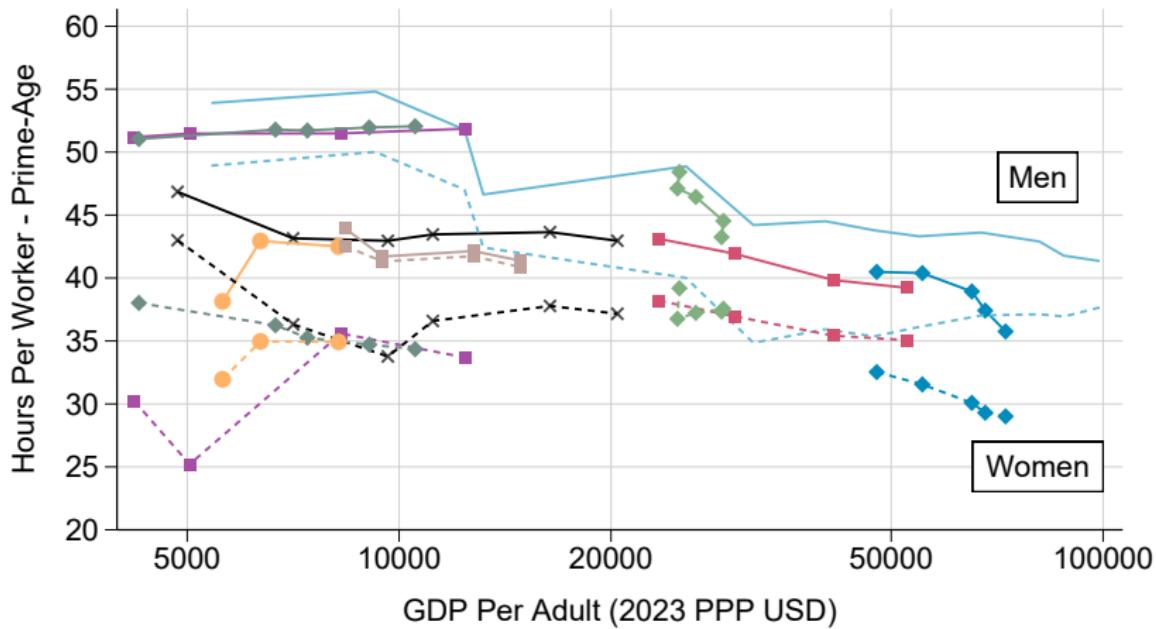
United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

A Great Gender Reshuffling: Employment Rates

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United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

A Great Gender Reshuffling: Hours per Worker

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- | | | |
|---------------|----------------|---------------------|
| United States | Western Europe | East. Eur. & Russia |
| Latin America | Bangladesh | Indonesia |
| Philippines | Pakistan | Sub-Saharan Africa |

Gender Reshuffling, US/Europe/Latin America

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Panel A: Cross Section

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	-1.93* (0.98)	1.87* (1.02)	-2.94*** (1.07)	-2.96** (1.47)	1.44 (1.41)	11.00*** (2.28)
Mean DepVar	33.6	23.5	41.0	35.5	82.3	67.2
N	76	76	76	76	76	76

Panel B: Panel Data

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	-5.91*** (0.47)	8.89*** (0.48)	-4.58*** (0.37)	-0.89** (0.42)	-4.79*** (0.76)	26.79*** (1.23)
Mean DepVar	34.9	21.4	42.3	35.1	82.8	62.0
N	1,756	1,756	1,756	1,756	1,756	1,756

Gender Reshuffling, Rest of the World

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Panel A: Cross Section

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	0.65 (0.97)	4.60* (2.61)	-0.56 (0.89)	2.66* (1.36)	2.33* (1.28)	7.11 (5.42)
Mean DepVar	41.3	21.9	47.2	38.3	87.6	56.8
N	84	84	84	84	84	84

Panel B: Panel Data

	Hours per Adult		Hours per Worker		Employment Rates	
	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women
Log GDP Per Adult	-3.30*** (0.52)	2.07*** (0.59)	-3.32*** (0.55)	-1.35* (0.73)	-1.01** (0.47)	9.02*** (1.20)
Mean DepVar	39.4	20.0	46.0	38.3	85.7	52.1
N	410	410	410	410	410	410

Household Gender Reshuffling, Women Hours Per Worker

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Panel A: Cross Section

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	0.28 (0.84)	0.40 (0.88)	-0.09 (0.70)	0.09 (0.80)
Mean DepVar	38.0	37.8	38.3	39.9
N	129	129	129	129

Panel B: Panel Data

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	-0.85** (0.39)	-0.50 (0.42)	-1.83*** (0.35)	-0.89*** (0.34)
Mean DepVar	36.1	35.6	37.4	38.8
N	1,611	1,611	1,611	1,611

Household Gender Reshuffling, Women Employment

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Panel A: Cross Section

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	5.64** (2.45)	6.25** (2.43)	4.07* (2.36)	4.53* (2.66)
Mean DepVar	64.5	63.5	65.5	73.2
N	129	129	129	129

Panel B: Panel Data

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	20.69*** (1.35)	23.15*** (1.59)	13.10*** (0.84)	6.04*** (1.18)
Mean DepVar	59.1	58.0	62.7	71.1
N	1,614	1,614	1,614	1,614

Household Gender Reshuffling, Men Per Adult

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Panel A: Cross Section

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-1.55* (0.86)	-0.60 (0.87)	-3.06*** (0.95)	-2.16* (1.15)
Mean DepVar	38.1	38.0	37.3	39.1
N	129	129	129	129

Panel B: Panel Data

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-5.00*** (0.41)	-4.52*** (0.41)	-5.61*** (0.44)	-2.10*** (0.60)
Mean DepVar	36.0	36.7	33.9	34.4
N	1,613	1,613	1,613	1,613

Household Gender Reshuffling, Men Hours Per Worker

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Panel A: Cross Section

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-1.72** (0.71)	-1.18 (0.75)	-1.93** (0.76)	-1.90** (0.85)
Mean DepVar	44.3	44.2	43.9	44.8
N	129	129	129	129

Panel B: Panel Data

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-4.09*** (0.32)	-4.09*** (0.33)	-3.95*** (0.34)	-1.93*** (0.61)
Mean DepVar	43.4	43.6	42.6	42.7
N	1,613	1,613	1,613	1,613

Household Gender Reshuffling, Men Employment

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Panel A: Cross Section

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-0.18 (0.90)	0.98 (0.89)	-3.47*** (0.99)	-1.45 (1.37)
Mean DepVar	86.0	86.1	84.8	87.2
N	129	129	129	129

Panel B: Panel Data

	(1) All Prime-Age Men	(2) Living With Prime-Age Women	(3) Living Without Prime-Age Women	(4) Living Alone
Log GDP Per Adult	-3.52*** (0.67)	-2.21*** (0.64)	-5.89*** (0.77)	-1.47* (0.86)
Mean DepVar	83.2	84.4	79.5	80.5
N	1,613	1,613	1,613	1,613

Gender Reshuffling and Households, US/EU/LatAm

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Panel A: Cross Section

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	1.86* (1.07)	2.16* (1.11)	0.43 (1.07)	-0.57 (1.15)
Mean DepVar	23.4	22.8	25.1	28.1
N	64	64	64	64

Panel B: Panel Data

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	9.44*** (0.50)	10.71*** (0.59)	5.57*** (0.32)	1.96*** (0.66)
Mean DepVar	21.5	20.7	23.6	27.8
N	1,355	1,355	1,355	1,355

Gender Reshuffling and Households, ROW

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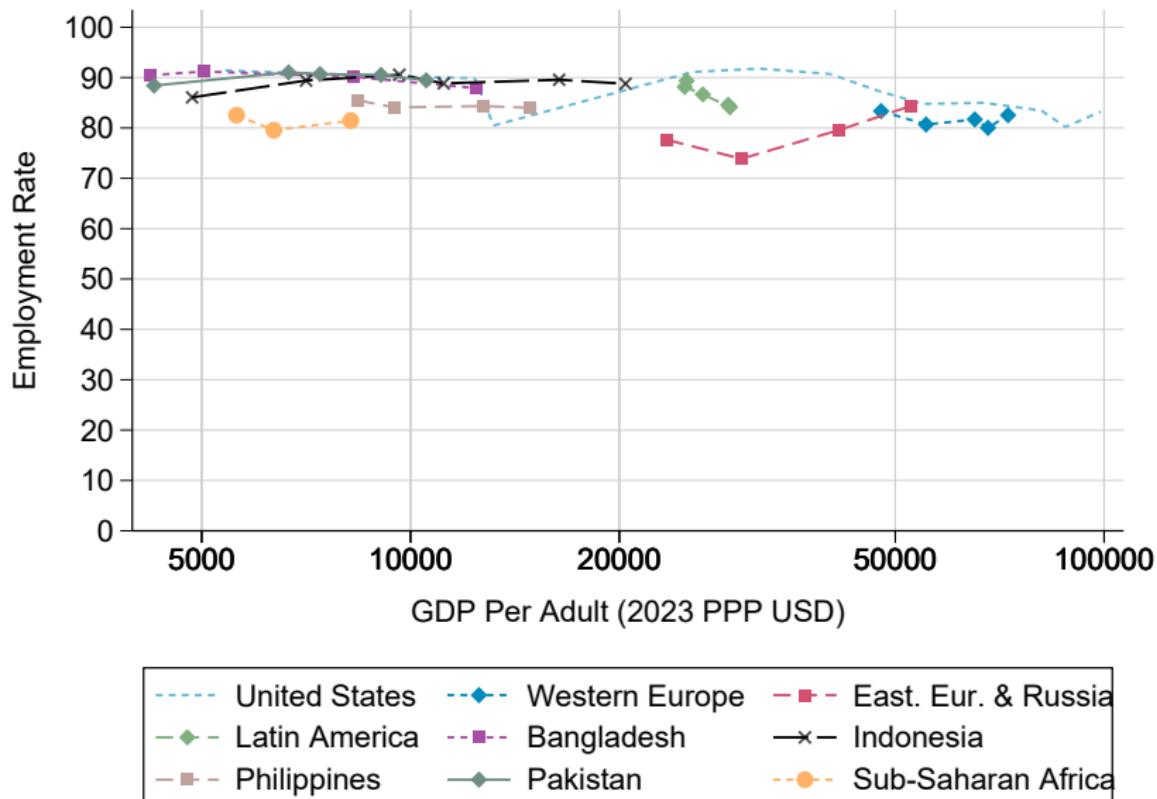
Panel A: Cross Section

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	4.68* (2.37)	5.22** (2.54)	2.73 (1.88)	4.53* (2.41)
Mean DepVar	25.0	24.4	24.8	29.9
N	65	65	65	65

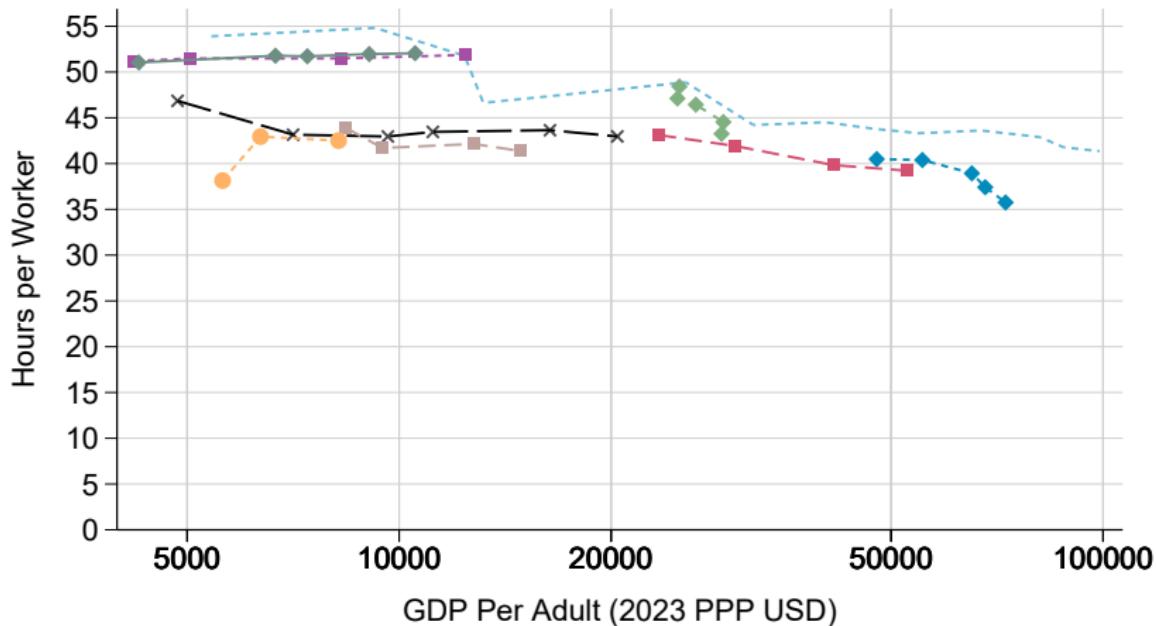
Panel B: Panel Data

	(1) All Prime-Age Women	(2) Living With Prime-Age Men	(3) Living Without Prime-Age Men	(4) Living Alone
Log GDP Per Adult	-0.56 (0.80)	-0.71 (0.83)	-1.65** (0.82)	0.91 (1.00)
Mean DepVar	19.1	18.5	21.5	25.8
N	259	259	259	259

Trends in Prime-Age Male Hours: Extensive Margin



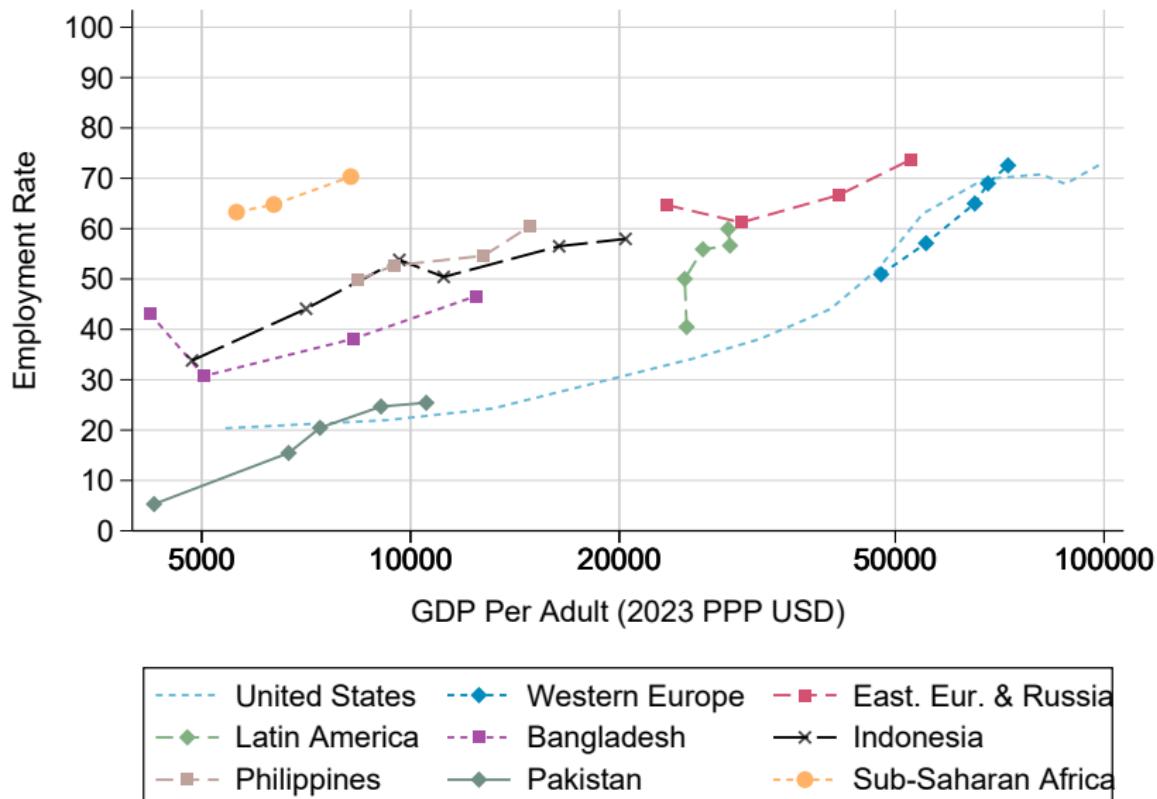
Trends in Prime-Age Male Hours: Intensive Margin



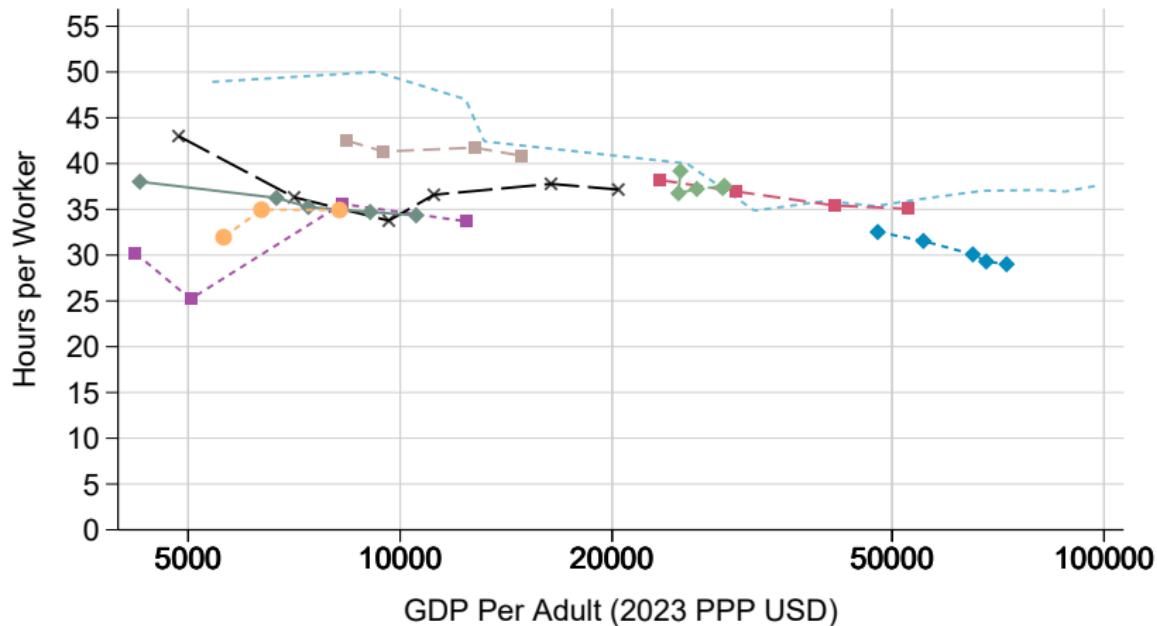
Legend:

- United States
- Latin America
- Philippines
- Western Europe
- Bangladesh
- Pakistan
- East. Eur. & Russia
- Indonesia
- Sub-Saharan Africa

Trends in Prime-Age Female Hours: Extensive Margin

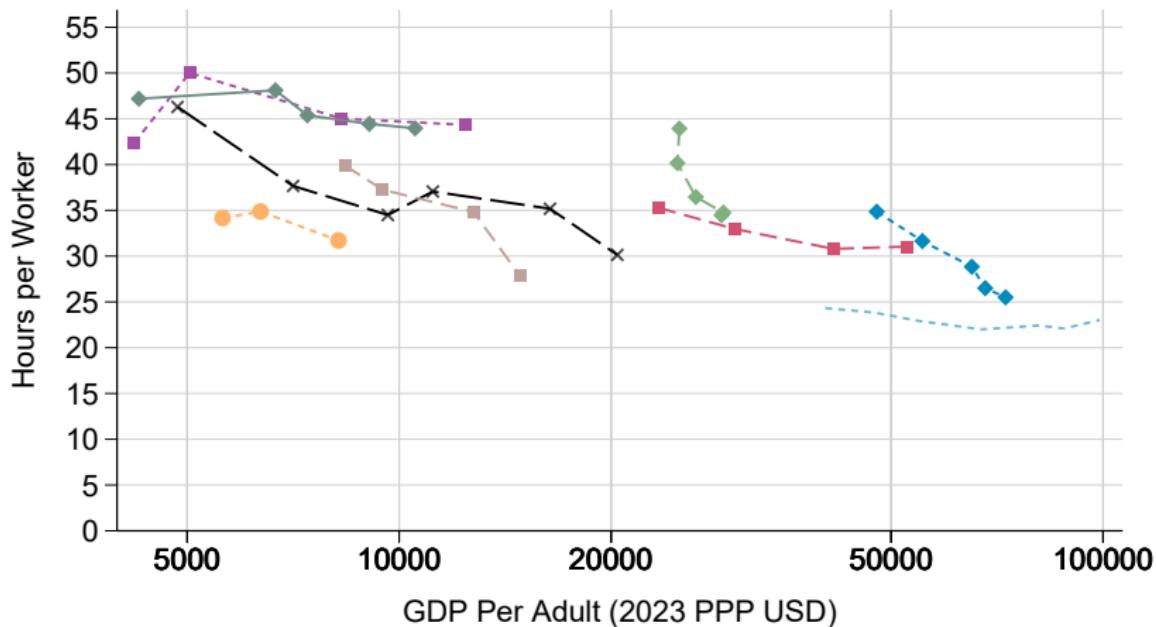


Trends in Prime-Age Female Hours: Intensive Margin



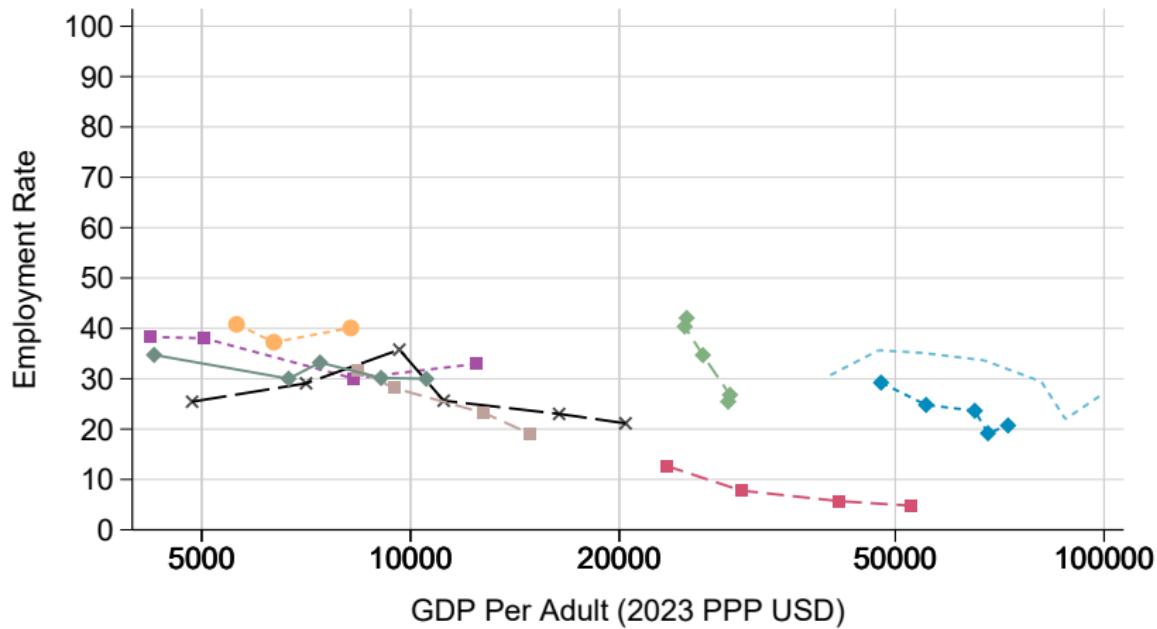
- | | | |
|---------------|----------------|---------------------|
| United States | Western Europe | East. Eur. & Russia |
| Latin America | Bangladesh | Indonesia |
| Philippines | Pakistan | Sub-Saharan Africa |

Trends in Young Hours: Intensive Margin



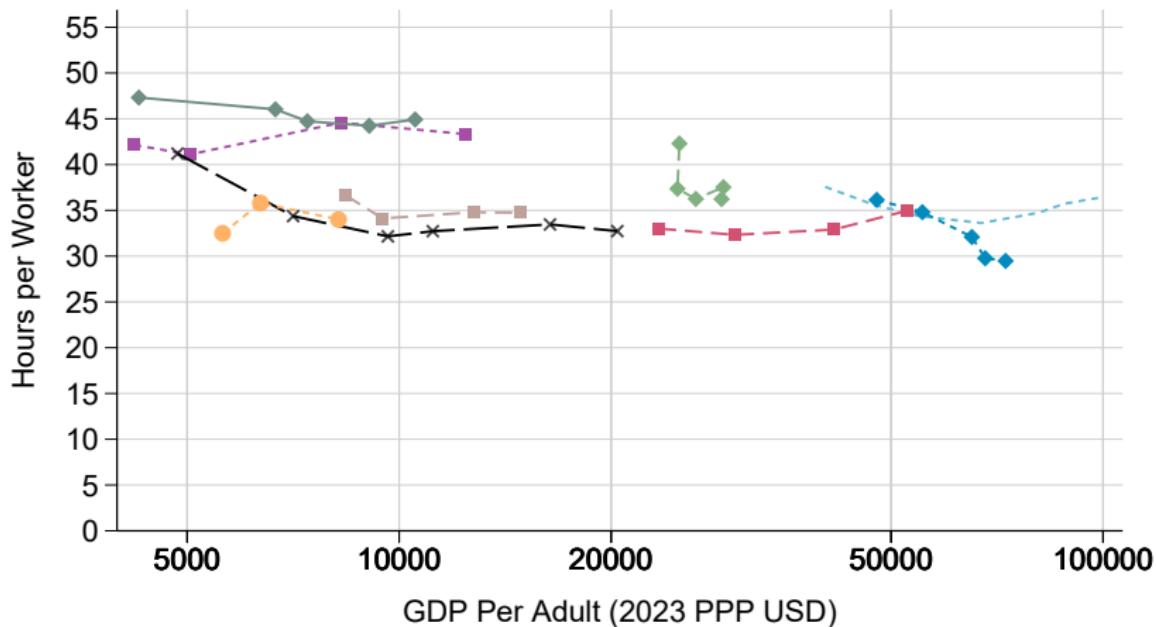
United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Trends in Young Hours: Extensive Margin



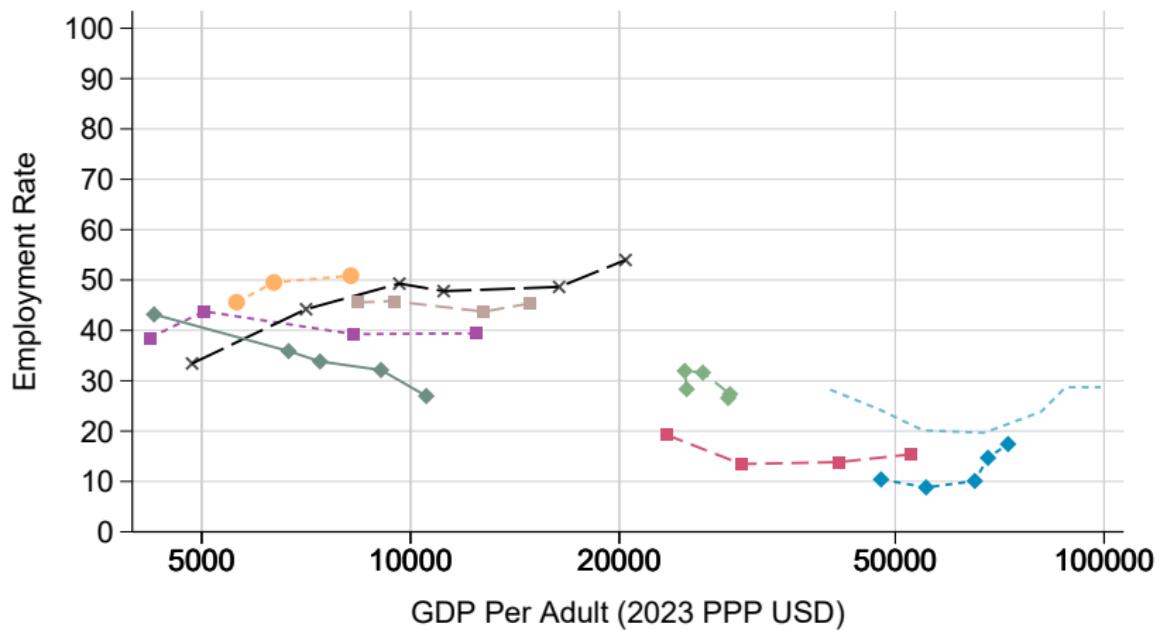
United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Trends in Elderly Hours: Intensive Margin



United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

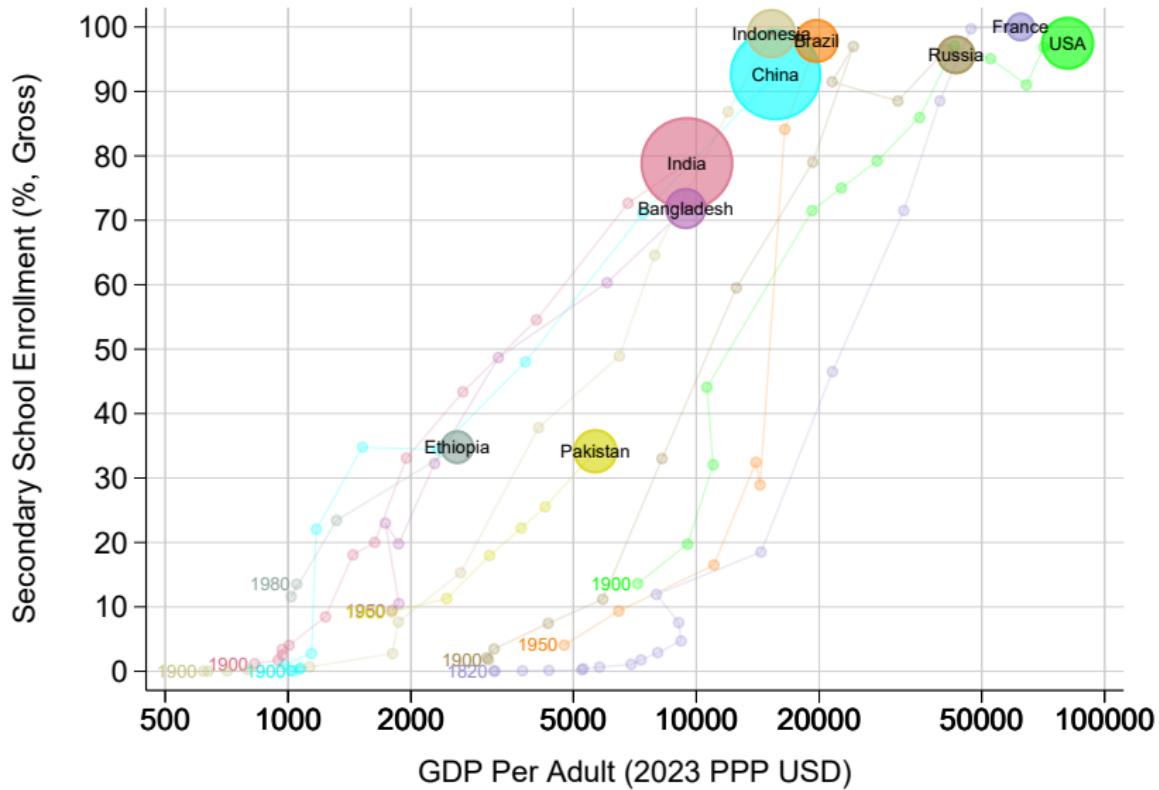
Trends in Elderly Hours: Extensive Margin



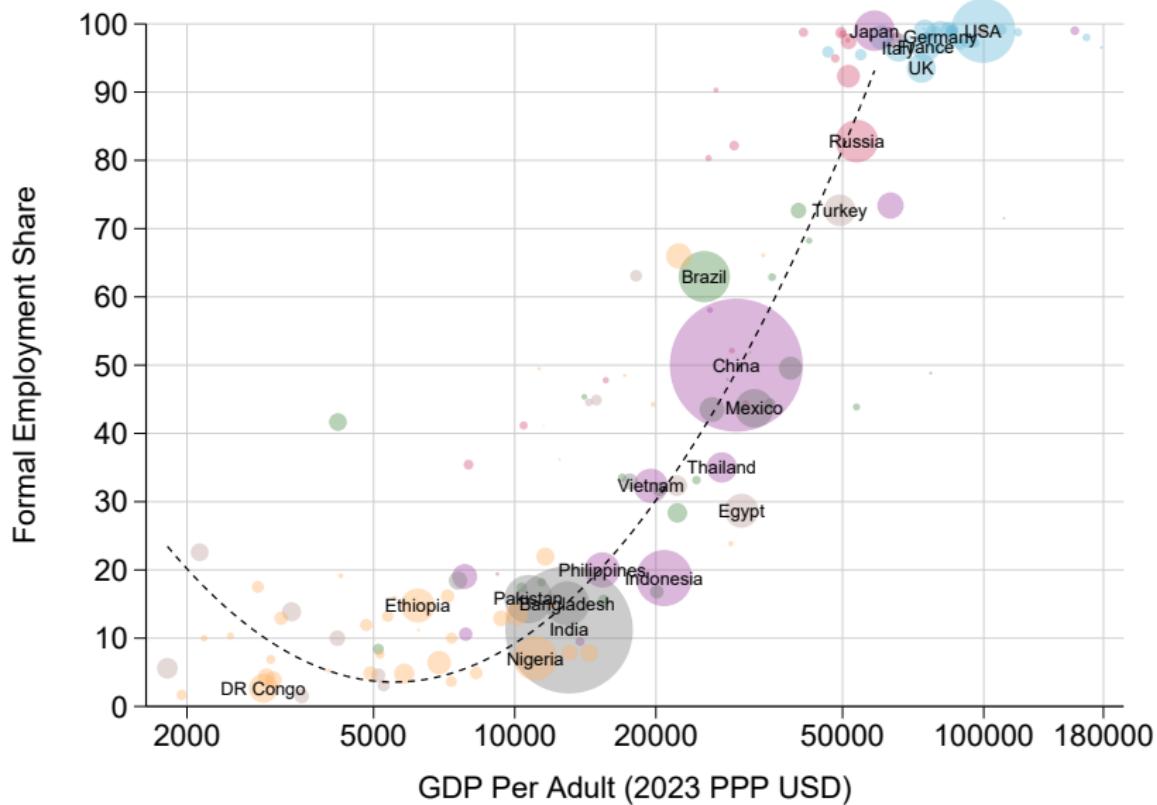
United States	Western Europe	East. Eur. & Russia
Latin America	Bangladesh	Indonesia
Philippines	Pakistan	Sub-Saharan Africa

Schooling and Development in the Long Run [Go Back](#)

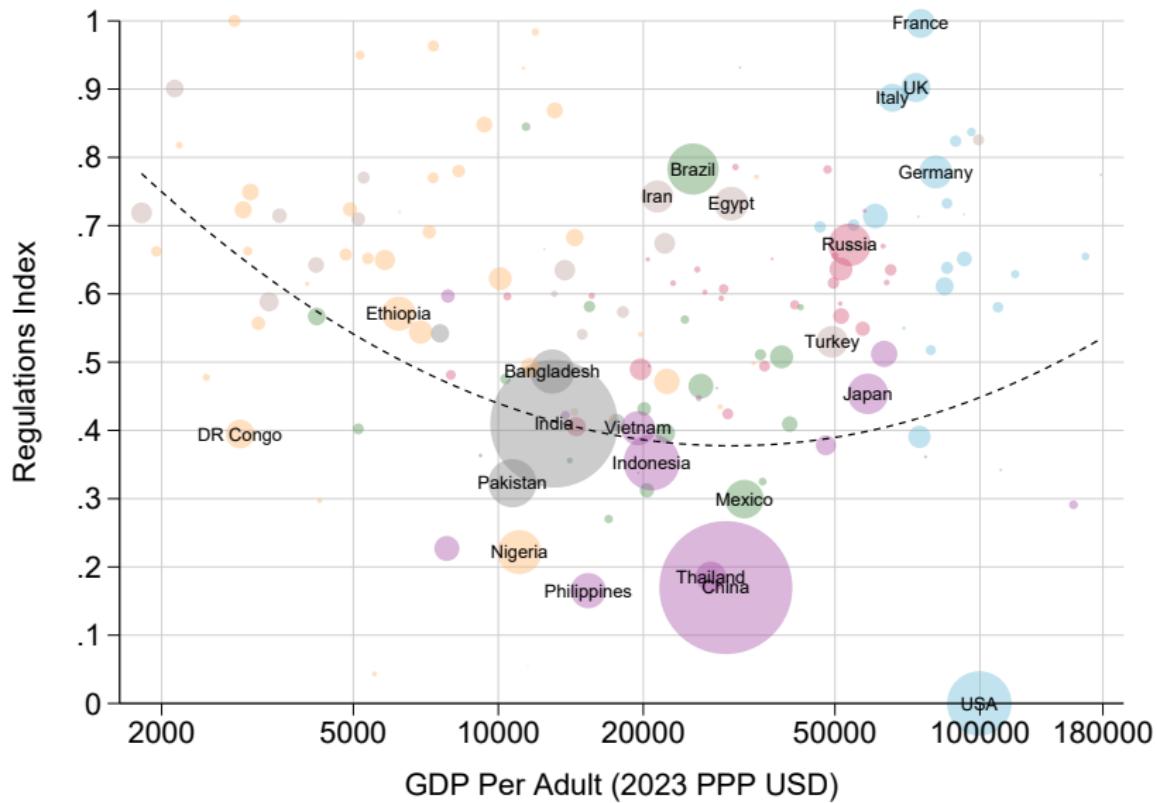
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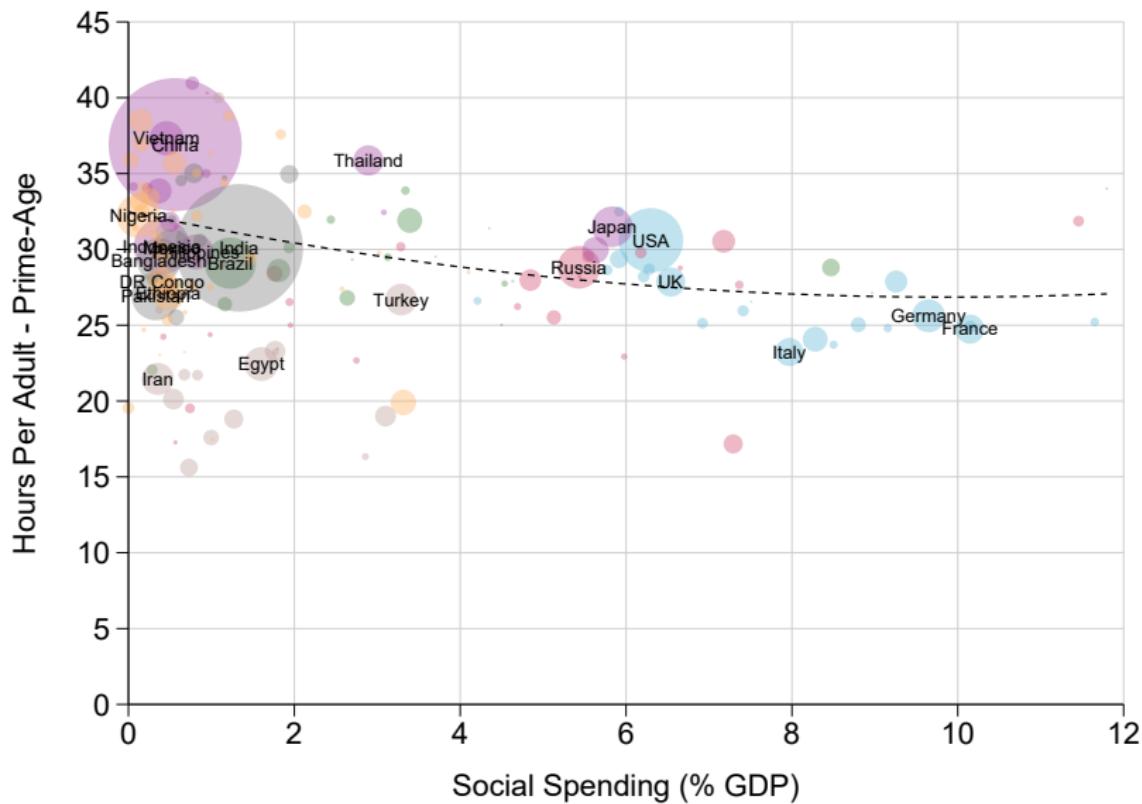
Formal Employment Share vs. GDP



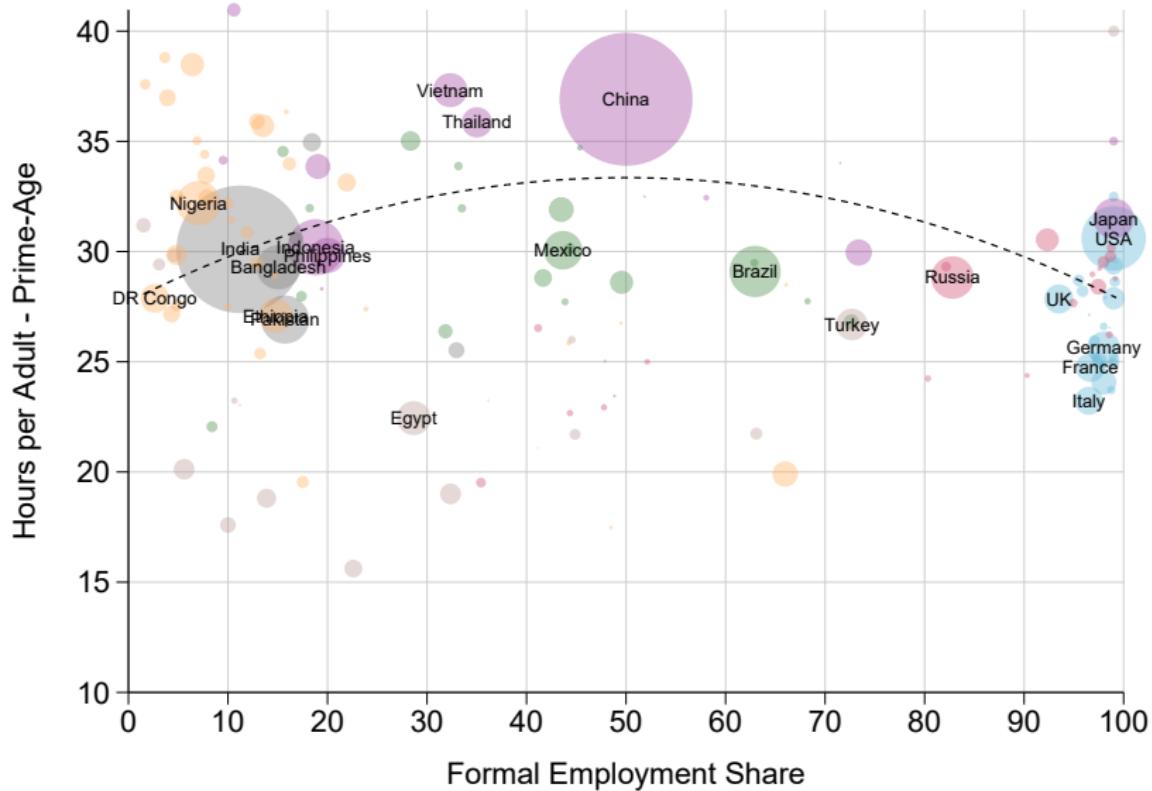
Regulations Index vs. GDP



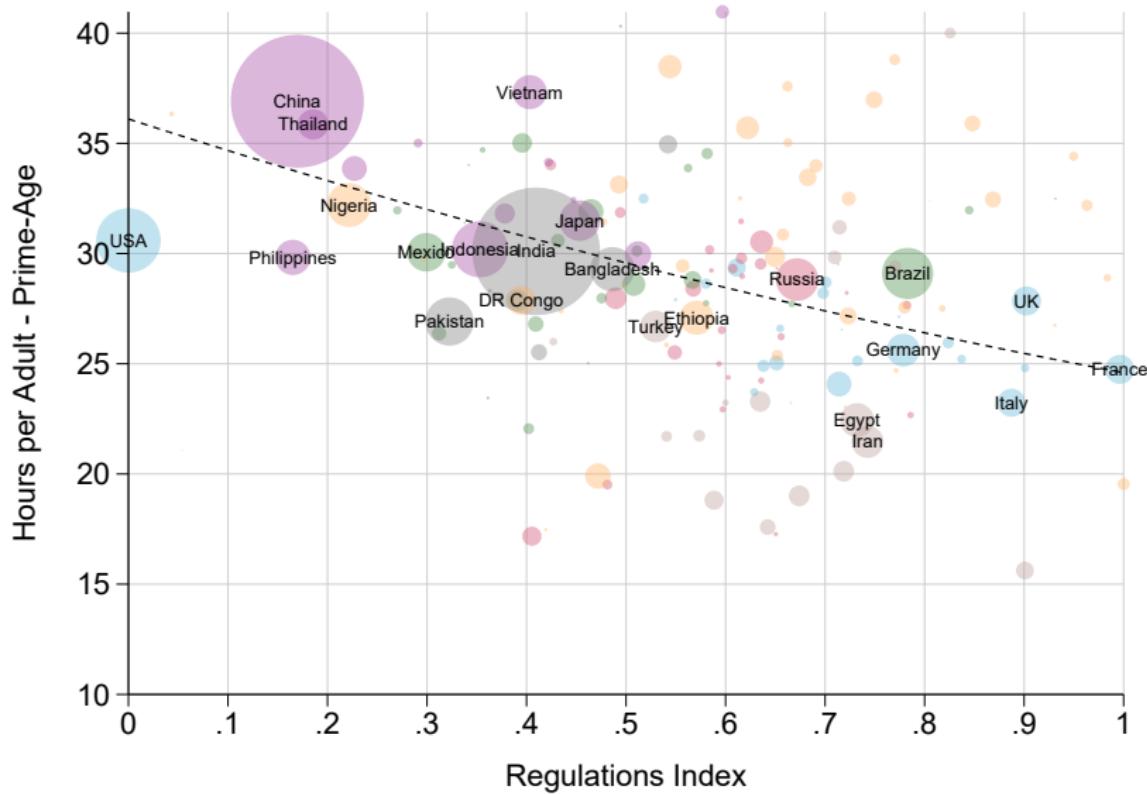
Social Protection Spending vs. Prime-Age Hours



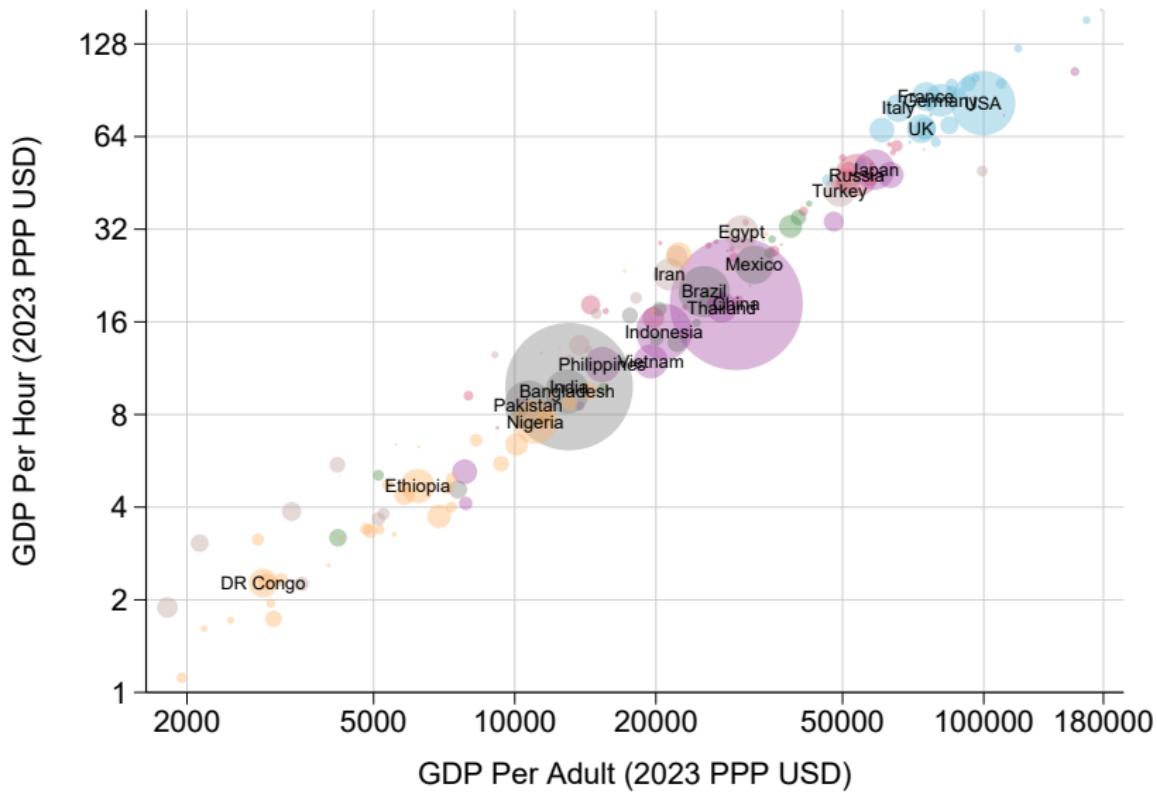
Formal Employment Share vs. Prime-Age Hours



Regulations Index vs. Prime-Age Hours



GDP Per Adult Versus GDP Per Hour



A New Database on Global Hours Worked

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	Number of Countries	Earliest Year	Number of Surveys	Sample Size	Population Covered (Last Year)
Western Europe and Anglosphere	24	1963	849	166,945,598	99.4%
Eastern Europe and ex-USSR	28	1991	503	38,104,614	100%
Latin America	24	1971	515	92,713,370	97.2%
East and Southeast Asia	20	1976	246	113,788,289	96.8%
South Asia	6	1973	64	11,507,960	100%
Middle East and North Africa	18	1991	167	36,774,156	85.3%
Sub-Saharan Africa	40	1987	159	10,280,886	98.5%
World	160	1963	2,503	470,114,873	97.3%

Survey Data Sources

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Source	Sample Size	Number of Countries	Number of Surveys	Time Period
I2D2	14,433,434	57	195	1977-2017
GMD	944,662	4	4	2011-2022
GLD	116,780,229	20	246	1981-2022
ILO	198,727,545	102	974	1976-2023
EU-LFS	114,141,576	29	908	1983-2022
Other	25,159,168	25	178	1960-2023

Prime-Age Log Hours and Taxes in Panel

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	Hours Per Adult	Hours Per Worker	Employment Rate	Prime-Age Men	Prime-Age Women
$\log 1 - \tau(L)$	0.27*** (0.08)	0.42*** (0.05)	-0.16*** (0.05)	0.37*** (0.07)	0.17 (0.13)
Log GDP Per Adult	0.11*** (0.02)	0.05*** (0.01)	0.06*** (0.02)	0.16*** (0.02)	0.02 (0.04)
N	1963	1963	1963	1963	1963
Adjusted R2	0.83	0.89	0.89	0.90	0.91

Regressions include time trend and country fixed effects.

Medium size elasticity of hours wrt $1 - \tau_L$ and small elasticity wrt to GDP: consistent with small uncompensated labor supply elasticity and medium income effects.

Hours Worked by the Young (unweighted) [Go Back](#)

	(1)	(2)	(3)	(4)
Log GDP Per Adult	-2.18*** (0.33)		-0.06 (0.33)	1.75*** (0.39)
Young School Attendance		-23.33*** (1.77)	-23.06*** (2.31)	-20.06*** (2.07)
Employment: Agriculture				12.41*** (2.09)
Employment: Manufacturing				-3.26 (4.11)
Mean DepVar	7.1	7.1	7.1	7.1
N	150	150	150	150
Adjusted R2	0.22	0.54	0.53	0.65

Hours Worked by the Elderly (unweighted) [Go Back](#)

	(1)	(2)	(3)	(4)	(5)
Log GDP Per Adult	-5.04*** (0.51)			-1.98** (0.82)	-0.06 (0.97)
Pension Spending		-61.84*** (19.28)		-44.42** (17.16)	-38.27** (15.19)
Elderly Population Share		-32.06*** (7.50)		6.32 (9.64)	2.60 (9.30)
Pension Coverage			-14.65*** (1.23)	-8.72*** (2.14)	-4.71** (1.98)
Employment: Agriculture					15.59*** (4.08)
Employment: Manufacturing					-9.87 (7.12)
Mean DepVar	11.8	11.8	11.8	11.8	11.8
N	93	93	93	93	93
Adjusted R2	0.51	0.53	0.61	0.65	0.74

Hours Worked by Prime-Aged Women (unweighted)

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	(1)	(2)	(3)	(4)
Log GDP Per Adult	0.55 (0.58)		-0.81 (0.63)	2.60*** (0.76)
Muslim/Hindu Share		-9.93*** (1.38)	-10.21*** (1.40)	-8.60*** (1.24)
Former Communist Country		3.53*** (1.32)	3.57*** (1.32)	3.95*** (1.29)
% Women Living with Young Children		3.91 (2.79)	1.30 (3.44)	-1.91 (3.02)
Employment: Agriculture				19.53*** (3.74)
Employment: Manufacturing				-11.79 (8.49)
Mean DepVar	22.0	22.0	22.0	22.0
N	132	132	132	132
Adjusted R2	-0.00	0.32	0.33	0.50

Hours and Development (unweighted) [Go Back](#)

Panel A: Cross Section

	(1) All Adults	(2) Prime-Age Adults	(3) Prime-Age Men	(4) Prime-Age Women	(5) Young 15-19	(6) Elderly 60+
Log GDP Per Adult	-1.10*** (0.36)	0.00 (0.38)	-1.09*** (0.41)	0.73 (0.52)	-2.13*** (0.33)	-3.75*** (0.40)
Mean DepVar	24.7	30.7	39.3	22.3	6.6	12.5
Rich-Poor Gap	-4.4	0.0	-4.4	2.9	-8.5	-15.0
N	160	160	160	160	159	160
Adjusted R2	0.05	-0.01	0.04	0.01	0.20	0.35

Panel B: Panel Data

	(1) All Adults	(2) Prime-Age Adults	(3) Prime-Age Men	(4) Prime-Age Women	(5) Young 15-19	(6) Elderly 60+
Log GDP Per Adult	-0.86*** (0.16)	0.37** (0.17)	-3.47*** (0.24)	3.97*** (0.19)	-6.91*** (0.24)	0.58*** (0.16)
Mean DepVar	22.3	28.5	36.3	21.0	8.1	9.3
Rich-Poor Gap	-3.4	1.5	-13.9	15.9	-27.6	2.3
N	2,166	2,166	2,166	2,166	2,143	2,166
Within R2	0.01	0.00	0.09	0.18	0.28	0.01