Wages around the globe
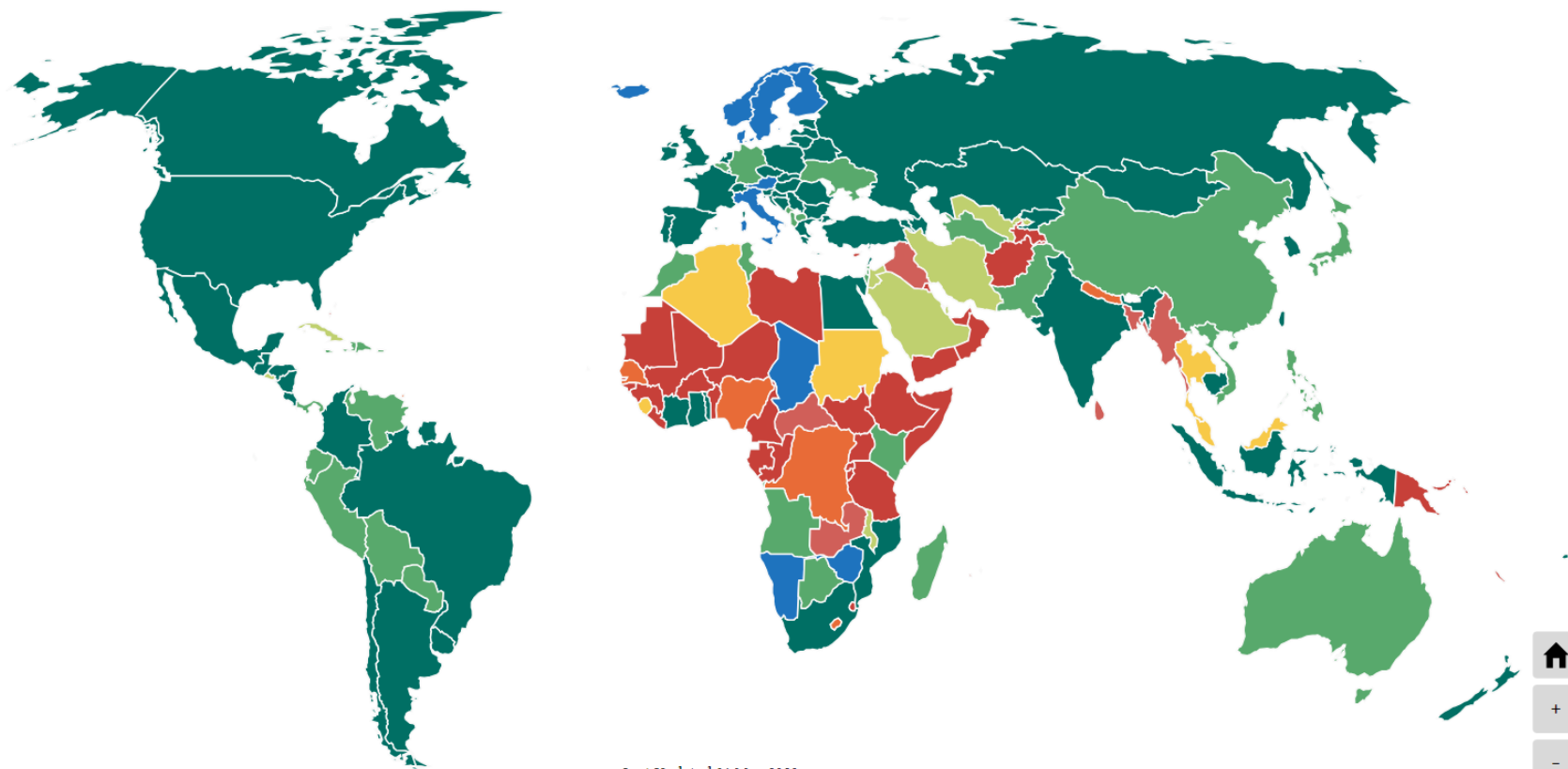
Martin GUZI

Masaryk University

martin.guzi@econ.muni.cz

When was the Minimum Wage last updated in your country?
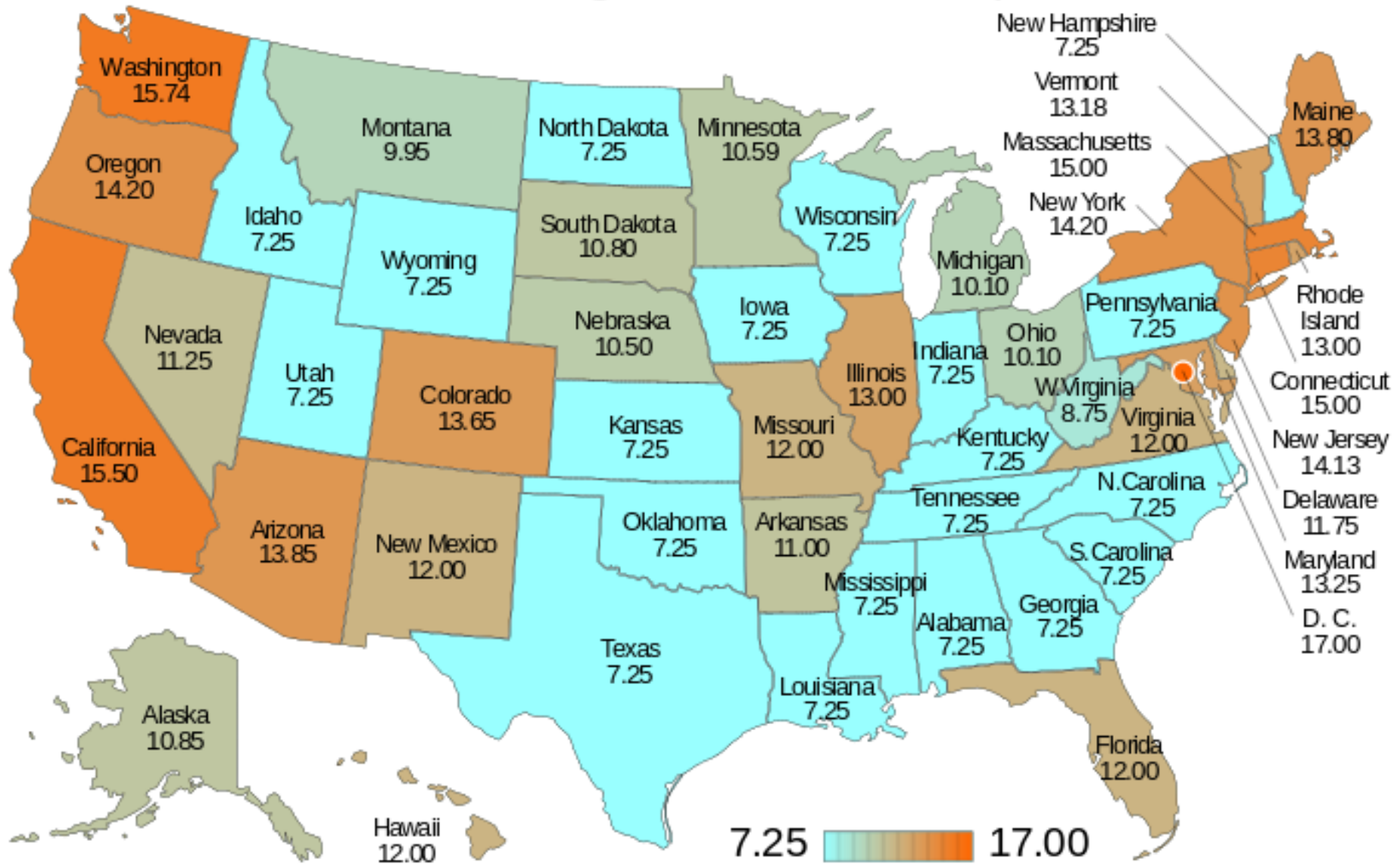
WageIndicator.org

Last Updated 01 May 2023

2023	2022	2021	2020	2019	2018	2017 or before	Collectively negotiated

* Venetian Red colour indicates those countries which last updated minimum wages in 2017 or earlier.

** In countries where minimum wages are collectively negotiated, the last updated date is merely arbitrary and the actual date of minimum wage revision may be different.

State minimum wages, in dollars. Sept 30, 2023

Washington 15.74
Oregon 14.20
California 15.50
Nevada 11.25
Idaho 7.25
Montana 9.95
Wyoming 7.25
Utah 7.25
Arizona 13.85
New Mexico 12.00
Colorado 13.65
North Dakota 7.25
South Dakota 10.80
Nebraska 10.50
Kansas 7.25
Oklahoma 7.25
Texas 7.25
Minnesota 10.59
Iowa 7.25
Missouri 12.00
Arkansas 11.00
Louisiana 7.25
Wisconsin 7.25
Illinois 13.00
Indiana 7.25
Mississippi 7.25
Alabama 7.25
Michigan 10.10
Ohio 10.10
Kentucky 7.25
Tennessee 7.25
Georgia 7.25
W.Virginia 8.75
Virginia 12.00
N.Carolina 7.25
S.Carolina 7.25
Florida 12.00
Pennsylvania 7.25
New Hampshire 7.25
Vermont 13.18
Massachusetts 15.00
New York 14.20
Maine 13.80
Rhode Island 13.00
Connecticut 15.00
New Jersey 14.13
Delaware 11.75
Maryland 13.25
D. C. 17.00
Alaska 10.85
Hawaii 12.00

7.25 ▭ 17.00

As of August 2022, 30 states had a minimum wage higher than the federal minimum.
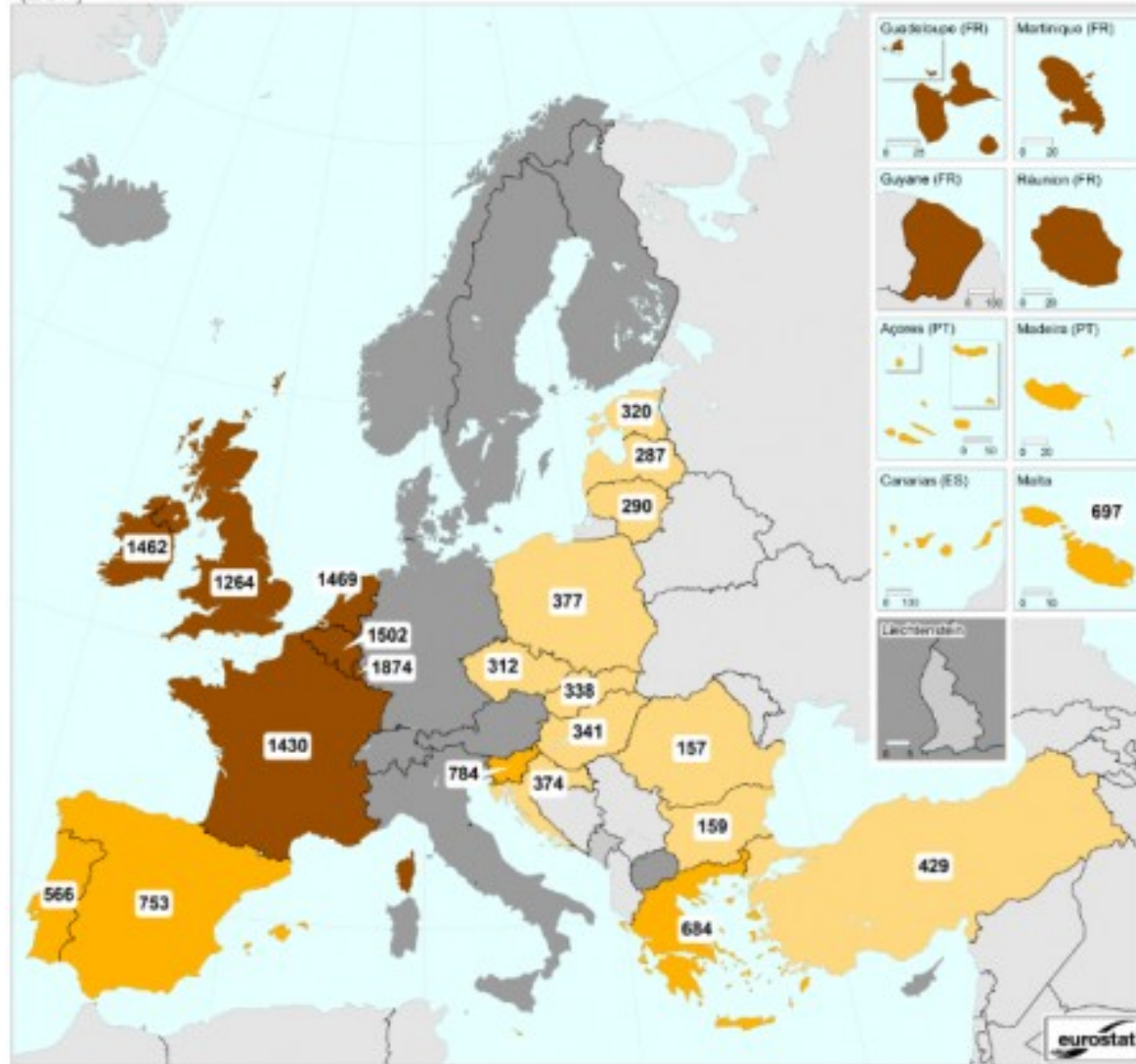
Minimum wage in US makes people poor in 2023

- Individuals earning below $14,580 per year are considered poor

- Poverty threshold is $30,000 per year for family 2+2.

- Federal minimum wage of **$7.25** per hour provides a full-time worker with $15,000 annual income (working 40 hours per week for 52 weeks).

- Family depending on minimum income (determined by government) is therefore considered poor by the same government.

http://livingwage.mit.edu/metros/42660
https://www.thebalance.com/federal-poverty-level-definition-guidelines-chart-3305843
https://www.healthcare.gov/glossary/federal-poverty-level-fpl/

Minimum Wages – 2013
Data as on 1st of January
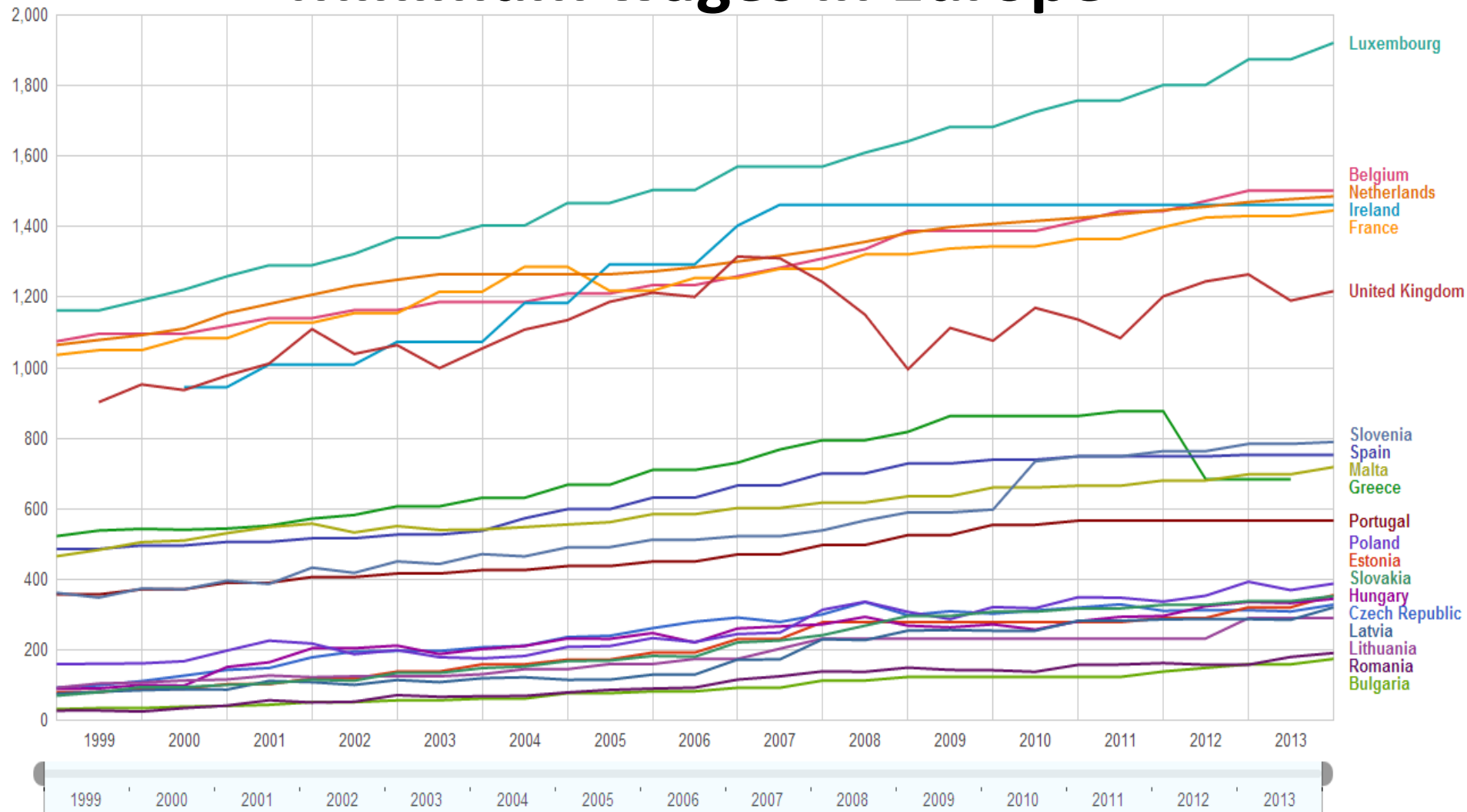In the European Union, Croatia, EFTA and Candidate Countries
(EUR)

Guadeloupe (FR)

Martinique (FR)

Guyane (FR)

Réunion (FR)

Açores (PT)

Madeira (PT)

Canarias (ES)

Malta

697

Liechtenstein

320

287

290

1462

1264

1469

1502

1874

377

312

338

341

157

784

374

159

1430

429

566

753

684

(EUR)

No statutory minimum wage

< 500

500 – 1 000

> 1 000

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
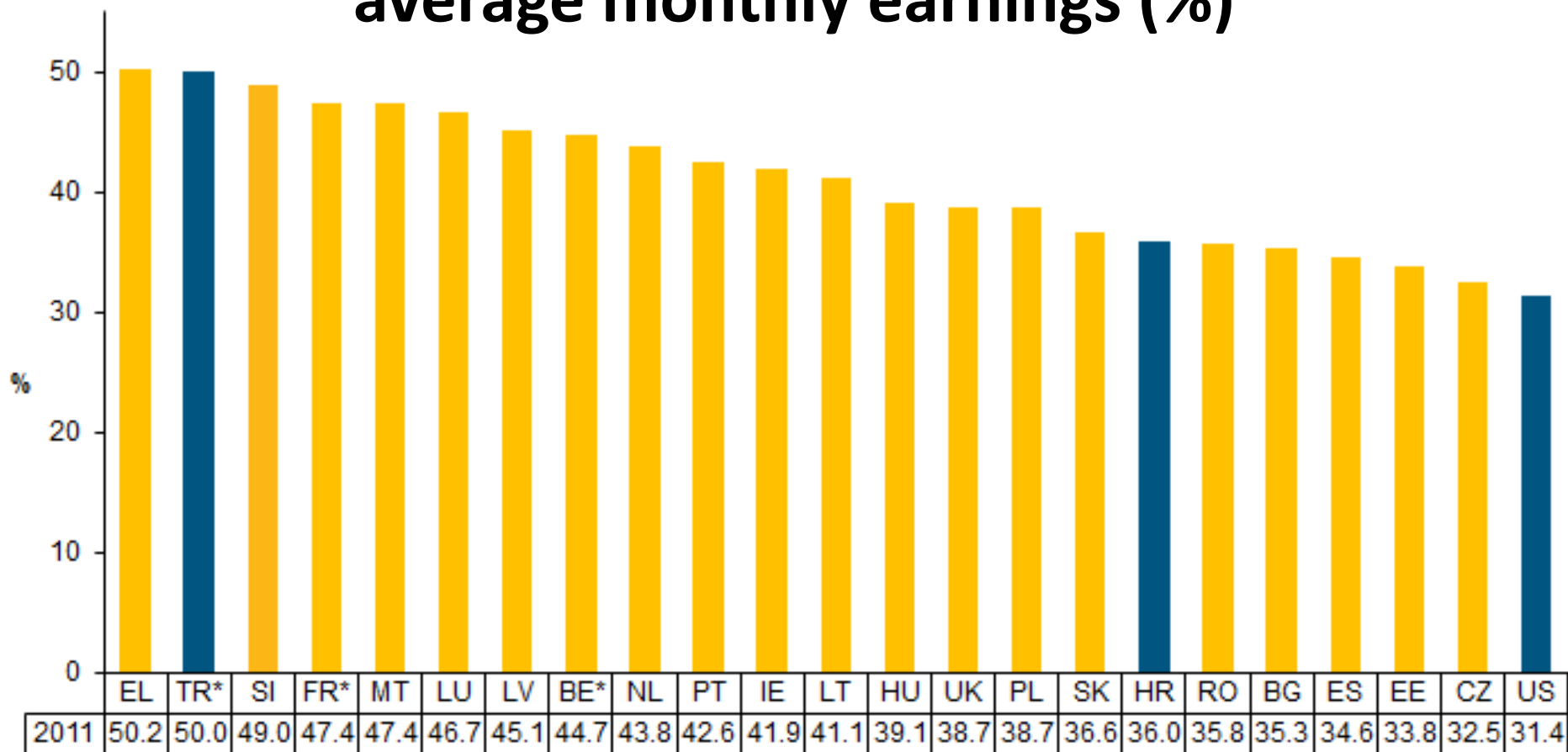Cartography: Eurostat — GISCO, 02/2013

0   200   400   600   800 km

eurostat

Minimum wages in Europe

Minimum Wage - Euro ?

Luxembourg
Belgium
Netherlands
Ireland
France
United Kingdom
Slovenia
Spain
Malta
Greece
Portugal
Poland
Estonia
Slovakia
Hungary
Czech Republic
Latvia
Lithuania
Romania
Bulgaria

Data from Eurostat   Last updated: Mar 9, 2014

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Monthly minimum wage as a proportion of average monthly earnings (%)

	EL	TR*	SI	FR*	MT	LU	LV	BE*	NL	PT	IE	LT	HU	UK	PL	SK	HR	RO	BG	ES	EE	CZ	US
2011	50.2	50.0	49.0	47.4	47.4	46.7	45.1	44.7	43.8	42.6	41.9	41.1	39.1	38.7	38.7	36.6	36.0	35.8	35.3	34.6	33.8	32.5	31.4

*BE, FR and TR: 2010. BE, EL: B-S without section O.

Source: Eurostat, 2011

Note: Monthly minimum wage as a proportion of average monthly earnings in industry and services.

These 10 low-paid jobs are:
- domestic cleaners
- cleaners and helpers in offices
- shop sales assistants
- waiters and bartenders
- cooks
- home-based personal care workers
- childcare workers
- agricultural, forestry and fishery labourers
- couriers and newspaper or parcel deliverers

Collectively agreed minimum wages for low-paid jobs

Figure 7: Collectively agreed average and median monthly wages (€) in 10 low-paid jobs, January 2022
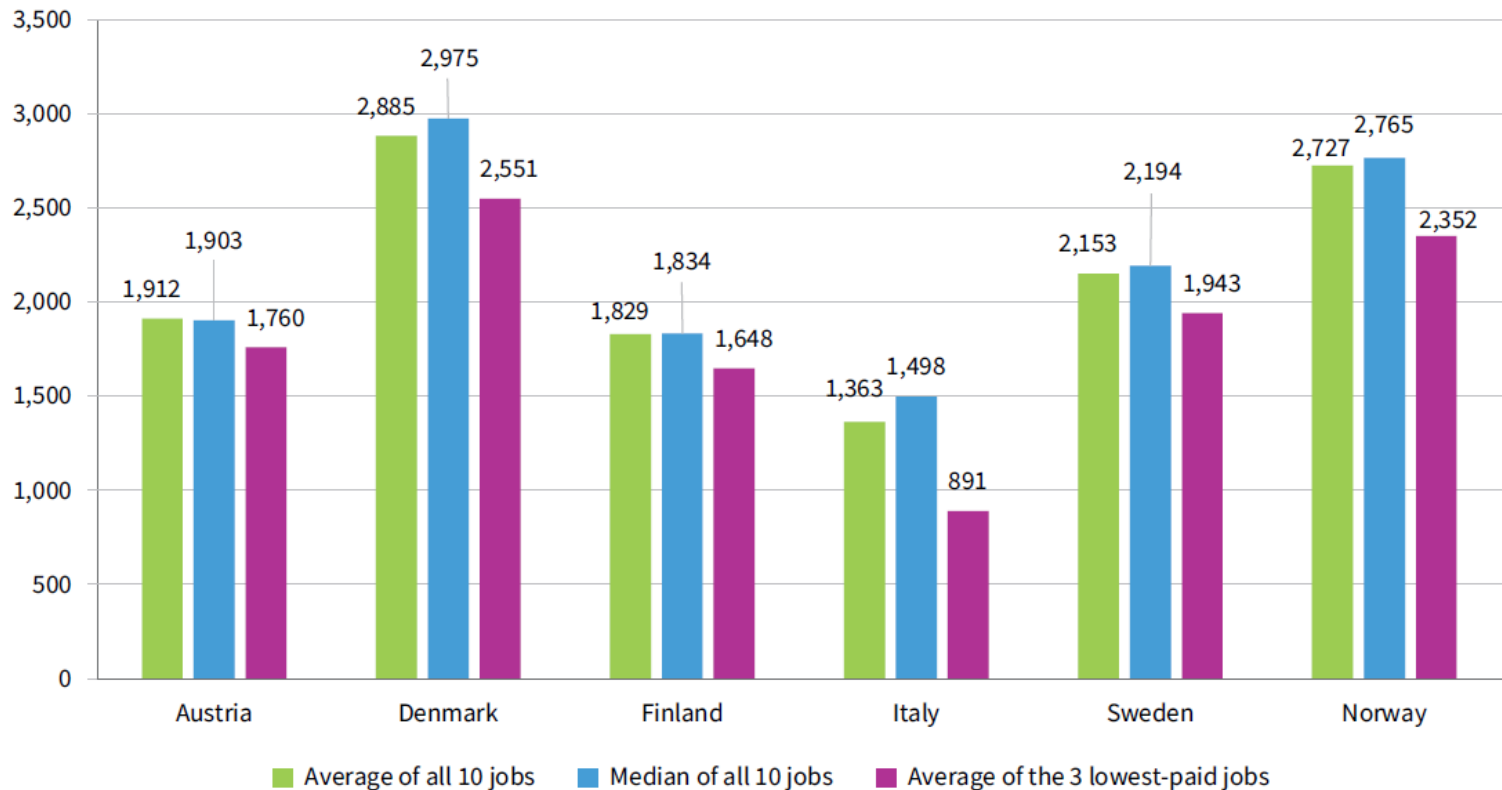
Note: *Rates for countries with more than 12 wage payments per year were converted by dividing the annual sum of the minimum wage by 12 calendar months. Hourly rates were converted to monthly rates by applying the average number of usual weekly hours.*
Source: *Network of Eurofound Correspondents, based on pay rates set in the largest collective agreements related to the 10 jobs*

Proportion of EU employees earning close to the minimum wage (%), by sociodemographic and employment characteristics, EU, 2018
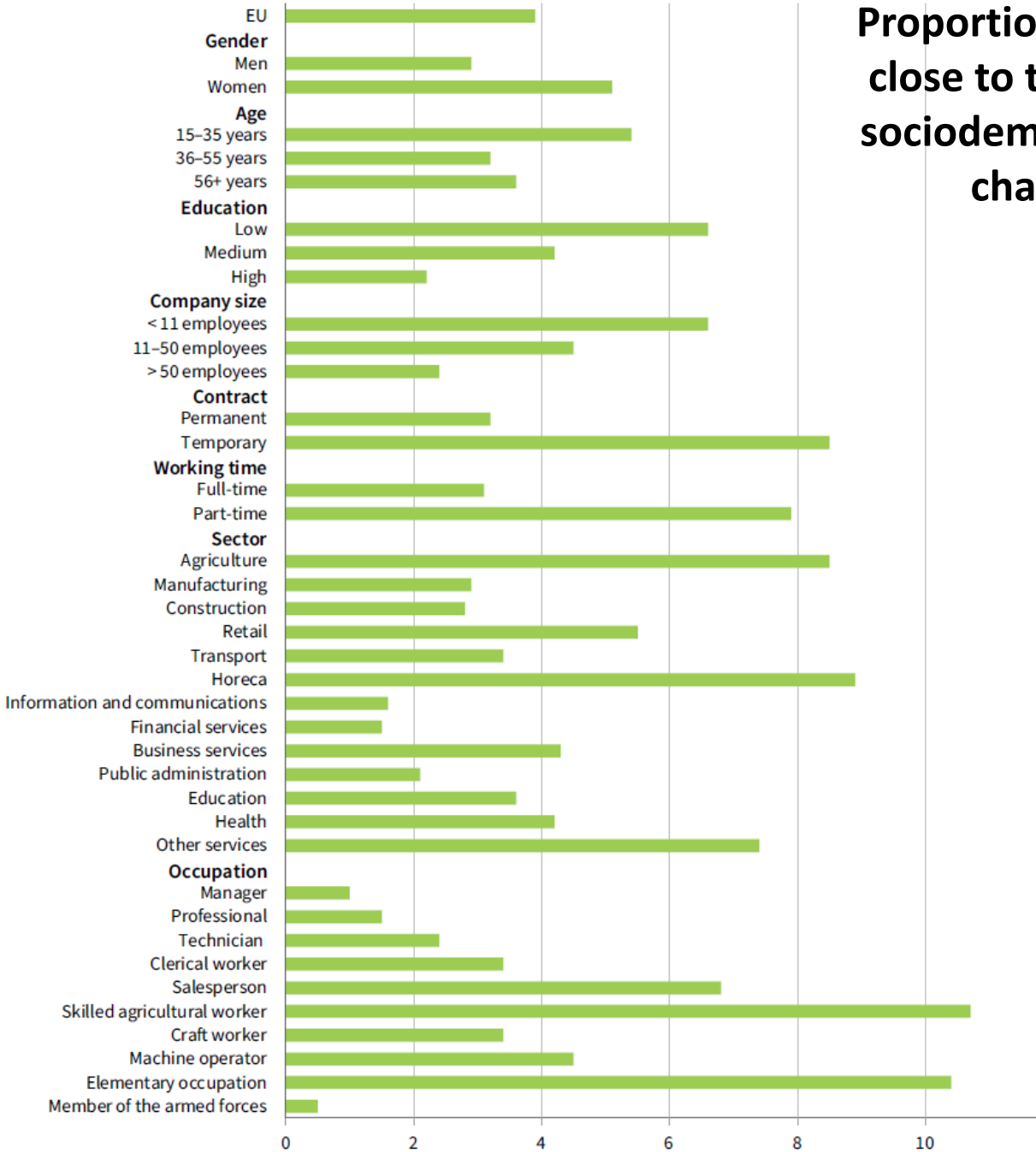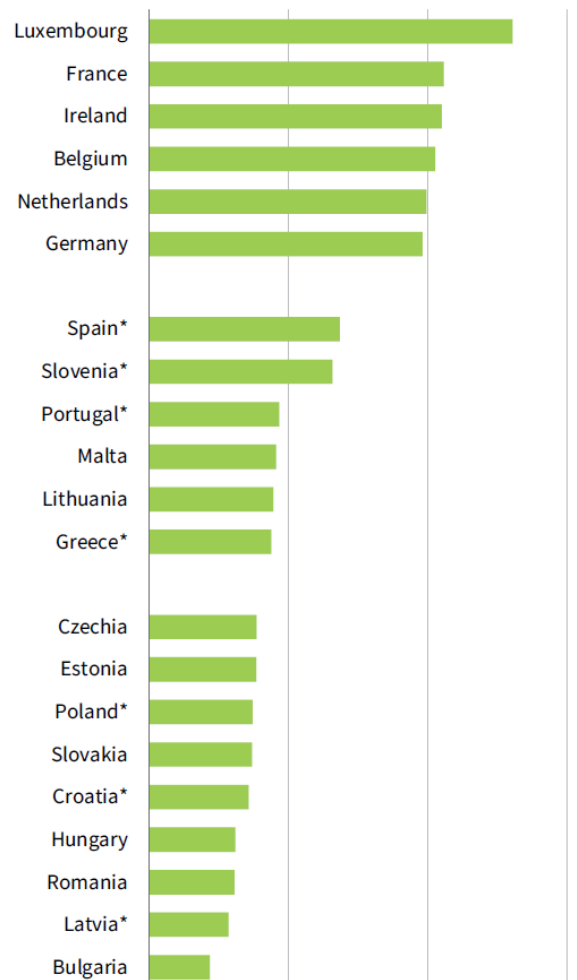
Figure 2: Hourly minimum wages (€), 21 EU Member States, 2022

Note: *The EU aggregate excludes Bulgaria, Croatia and Romania. These Member States provide wage information in net terms and the conve into gross terms cannot be done because OECD tax data on employee social security contributions and personal income tax are not available.*

How do we compare economies?

– comparison of one country vs. another

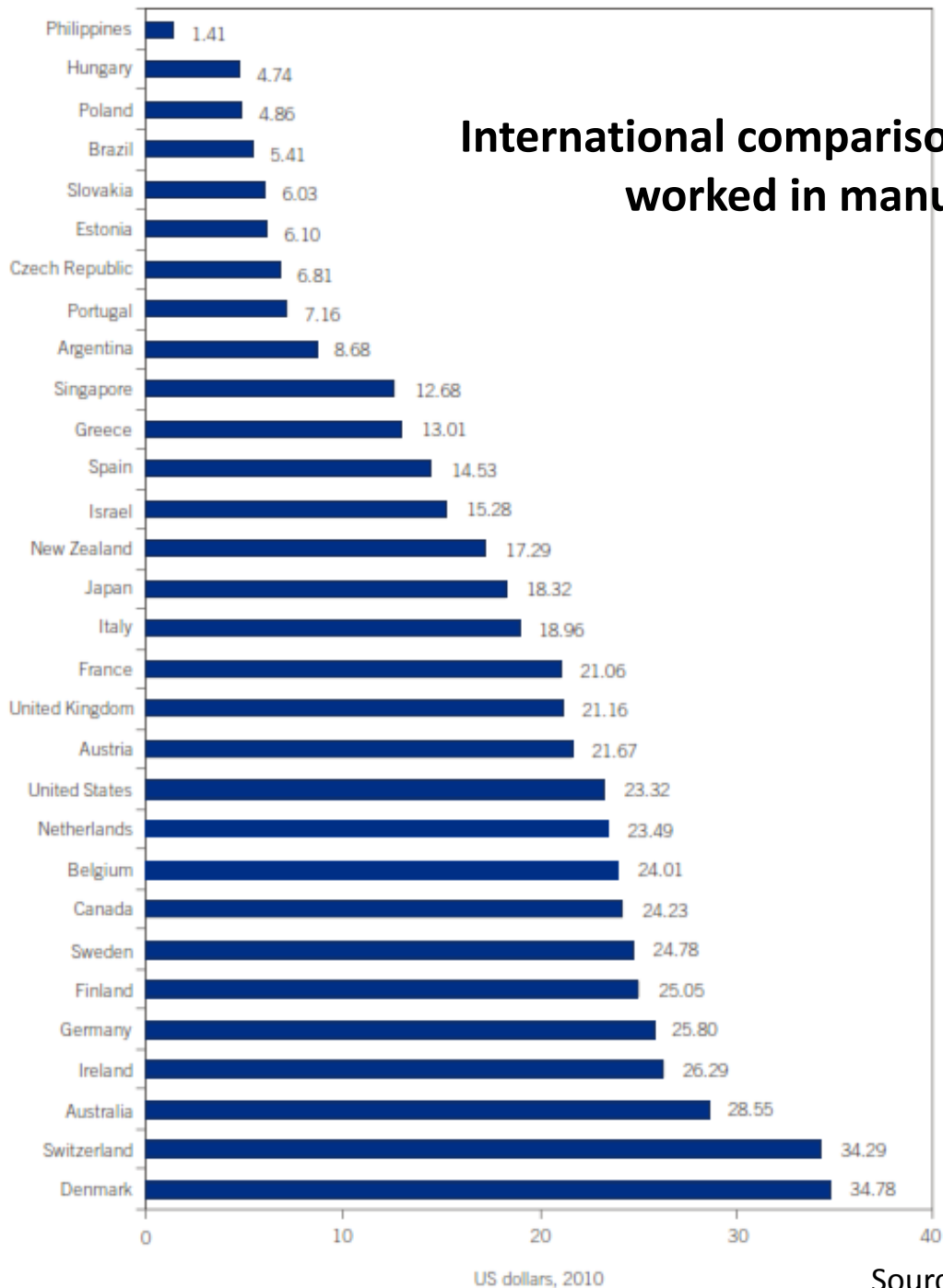– comparison of same country at different time

We look at:

☐ GDP

☐ Inflation

☐ Unemployment

☐ **Wage rates**

International comparison of hourly direct pay for time worked in manufacturing, 2010 (US$)

Country	US dollars, 2010
Philippines	1.41
Hungary	4.74
Poland	4.86
Brazil	5.41
Slovakia	6.03
Estonia	6.10
Czech Republic	6.81
Portugal	7.16
Argentina	8.68
Singapore	12.68
Greece	13.01
Spain	14.53
Israel	15.28
New Zealand	17.29
Japan	18.32
Italy	18.96
France	21.06
United Kingdom	21.16
Austria	21.67
United States	23.32
Netherlands	23.49
Belgium	24.01
Canada	24.23
Sweden	24.78
Finland	25.05
Germany	25.80
Ireland	26.29
Australia	28.55
Switzerland	34.29
Denmark	34.78

US dollars, 2010

Source: Adapted from ILO Global Wage Report 2012/13

Prof. Orley Ashenfelter (Princeton University)

"The best indicator of country development is the wage rate of ordinary people"

Orley pioneered empirical testing of economic hypotheses and creative data collection. He used data on wage rates of workers at McDonald's restaurants around the world, for a simple convincing measure of comparable wage rates.

He also works on non-labor topics - the study of wine prices and quality determinants or an analysis of the famous 'Judgement of Paris.'

Ashenfelter's study

- Measurements of wages for:
  - Identical jobs
  - Producing identical products
  - Firms with identical technology

- Units of Measurements:
  - ☐ The price of BigMac
  - ☐ Wage rate in the basic entry-level job at McDonald's restaurants
  - ☐ *McWage* expressed in **Big Macs per Hour**

McDonald's Restaurants

- Reasons for selection
  - Standardized protocol for employee w
  - Little/no variation in food ingredients
  - Little/no variation in food preparation
  - Same technology
  - Standard work operations manual
  - U.S.-style work practices (franchise)
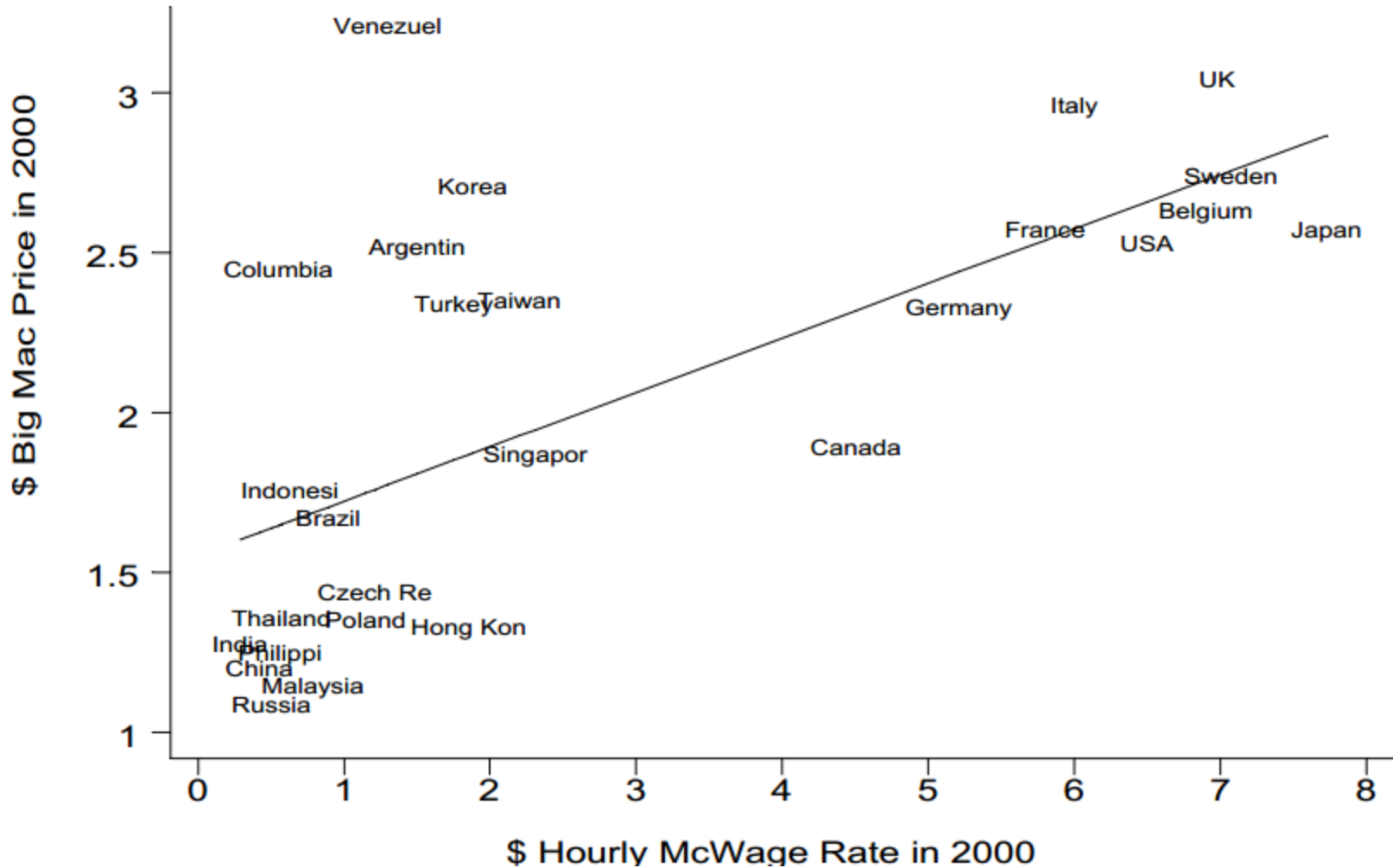 - The Big Mac is a standardized hamburger sandwich

Result of Study

Extraordinary differences in wage rates of workers doing the same job in countries at different level of economic development.

Western Europe, US, Japan rates are
- ☐ 3 – 5 times higher than Eastern Europe, Korea, Brazil
- ☐ More than 5x higher than China, India, Colombia

McDonald's Prices and Wages

Empirical Findings

- Great variance in overall wage rates
  - From **$0.29** in India to **$7.73** in Japan
- Relative equality within developed countries
  - Western Europe (e.g. Italy **$6.00**, Sweden **$7.07**), USA **$6.50**, Japan **$7.73**
- Prices of Big Mac vary less than wages
  - From **$1.07** in Russia to **$3.19** in Venezuela

Big Macs /hour of McDonald's Employee Labor
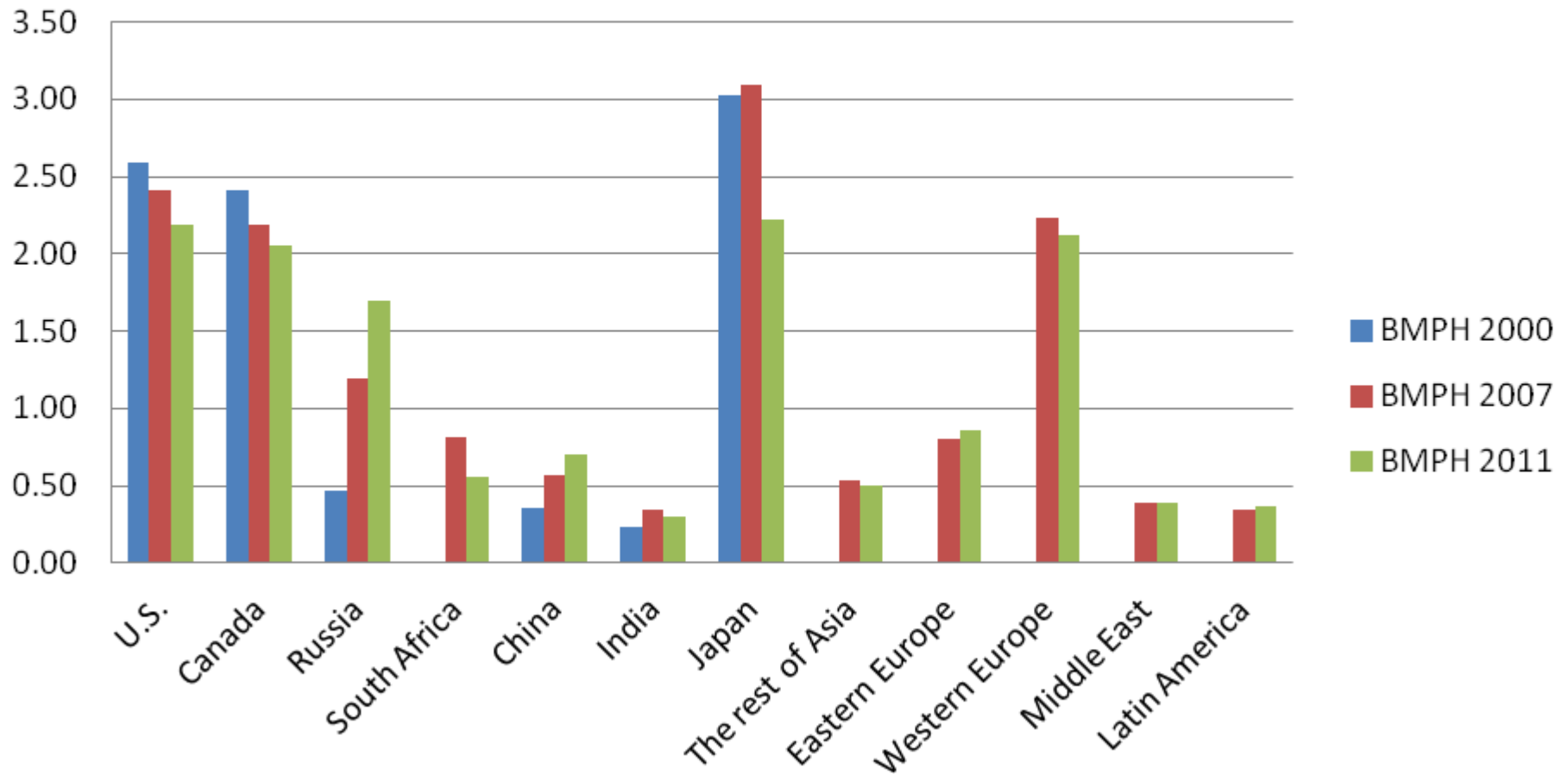
Limitation of study

- The reported wages are "gross wages" without tax adjustments
  (while personal income taxes are different across countries, the adjusted data will have the same order of ranking).

- The impact of minimum wage legislation, affect reporting of the wage data.

- The BigMac price is affected by local prices (e.g. rental prices, energy prices)

Do pay levels of low-skilled respond to minimum wage legislation?

- Entry-level wages of crew from 10 thousand McDonald's restaurants in the US (2016-2020)

- Variation in min. wages across US counties

- Possible effects of minimum wage increase
  - Product price increase
  - Technology introduction
  - Employment effects

The effects of min. wage increase

- Restaurants preserve pay 'premium' above the (increasing) minimum wage level
- Touch-screen ordering kiosks were not introduced in response to min. wage increase.
- Very little effect on prices of Big Mac sandwich
- Literature documents no/small min. wage employment effects in the fast food industry

What is wage?

Wage is monetary compensation paid by an employer to an employee in exchange for work done.

What determines wages?

- Country and region
- Productivity (education, experience)
- Gender
- Firm characteristics
- Job characteristics
- Public/private sector
- Institutions (e.g. minimum wage, unions)
- Other: appearance, ethnicity, agility, motivation, persistence, creativity, ingenuity, ect.

The Earnings Function

- Main tool for looking at wage inequality is the earnings function (first used by Mincer 1958) – a regression of log hourly wages on some characteristics:

- Earnings functions contain information about both absolute and relative wages but we will focus on latter
- Think of the equation as an estimate of the expectation of log wages conditional on x

Results of wage equation for Czechia

	(1)	(2)		(1)	(2)
Female	-0.24	-0.26	*Industry relat. to Agriculture*		
Educ. Relat. to Primary			Mining	0.26	0.32
Apprenticeship	0.08	0.07	Manufacturing	0.21	0.21
Secondary w/ GCE	0.34	0.32	Utilities	0.39	0.36
College and University	0.82	0.82	Construction	0.22	0.21
Post-graduate	1.04	1.04	Retail	0.10	0.08
Age	0.04	0.04	Hotels	0.07	0.15
Age squared	-0.04	-0.04	Transport	0.25	0.25
Part-time	-0.05	-0.05	Banks	0.54	0.63
Firm size (employment)	0.06	0.07	RealEstate+R&D.	-0.02	-0.03
Firm size squared	-0.02	0.04	Other Services	0.12	0.11
			_const	3.49	3.48
			Trade unions		0.004
			N	1m	0.5m

Stylized facts to be deduced from this earnings function

- women earn less than men
- ethnic minorities earn less than whites
- education is associated with higher earnings
- wages are a concave function of experience, first increasing and then decreasing slightly
- wages are a concave function of job tenure
- wages are related to 'family' characteristics
- wages are related to employer characteristics e.g. industry, firm size, private/public
- union workers tend to earn more

The variables included here are common but there are many others factors affecting wage

- Labour market conditions – e.g. unemployment rate, 'cohort' size
- Other employer characteristics e.g. profitability
- Computer use- e.g. Krueger, QJE 1993
- Beauty – Hamermesh and Biddle, AER 1994
- Height – Persico, Postlewaite, Silverman, JPE 2004
- Sexual orientation – Arabshebaini et al., 2005
- R^2 in wage equation is not very high – rarely above 0.5 and often about 0.3. So, there is a lot of unexplained wage variation

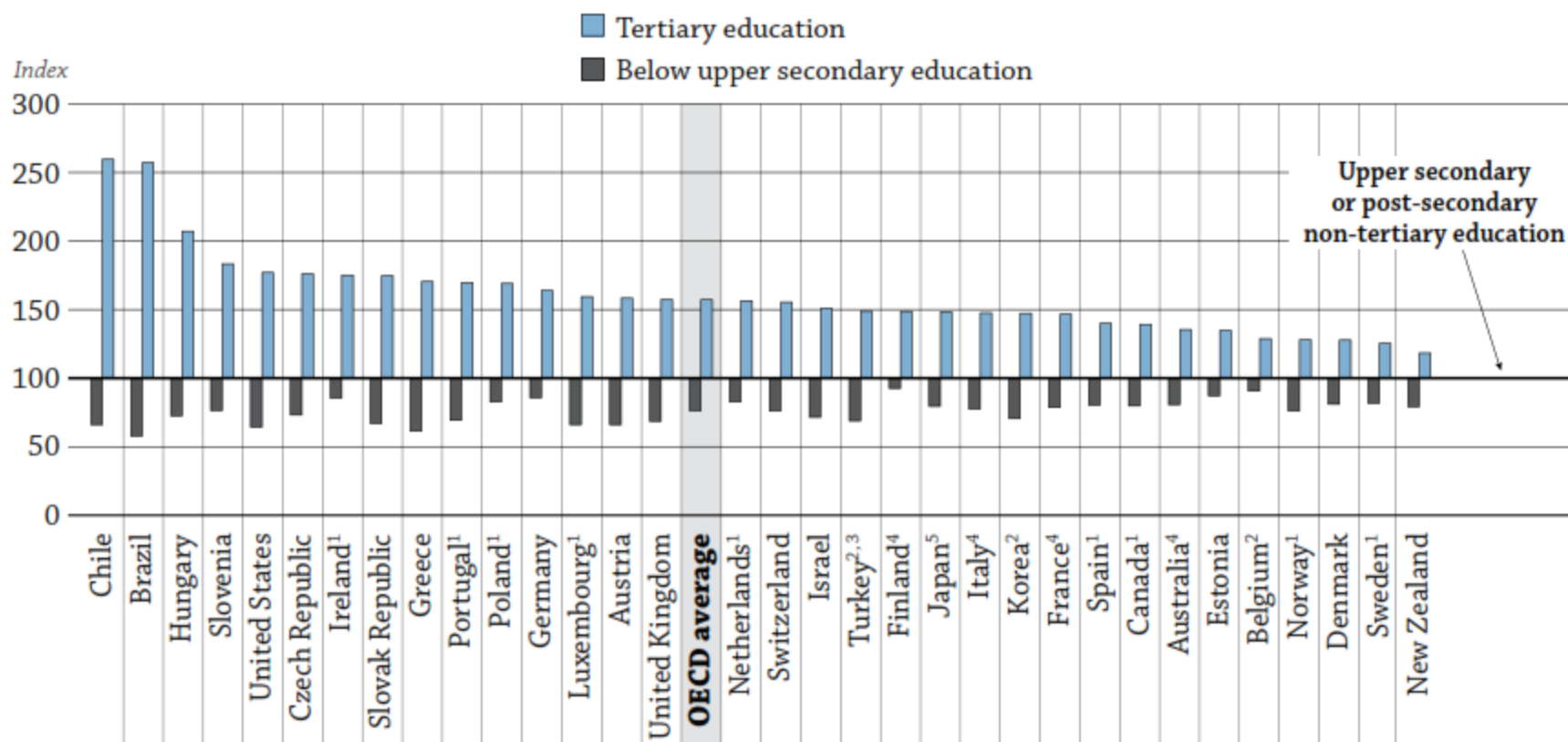# Problems with Interpreting Earnings Functions

- Earnings functions are regressions so potentially have all usual problems:
  - endogeneity e.g. correlation between job tenure and wages
  - omitted variable e.g. 'ability'
  - selection – not everyone works e.g. the earnings of women with very young children
- Tell us about correlation but we are interested in causal effects and 'correlation is not causation'

Learn More, Earn More

- Having a tertiary degree is linked to higher pay
- Diploma as a signal of high-ability or more human capital (quality of education)
- Education is access to better occupations
- Less education often means fewer choices
- With more graduates returns to education decline

Chart A6.1. Relative earnings of 25-64 year-old workers, by educational attainment (2011)

Upper secondary or post-secondary non-tertiary education = 100

- ■ Tertiary education
- ■ Below upper secondary education

Index

Upper secondary or post-secondary non-tertiary education

Countries (left to right): Chile, Brazil, Hungary, Slovenia, United States, Czech Republic, Ireland[1], Slovak Republic, Greece, Portugal[1], Poland[1], Germany, Luxembourg[1], Austria, United Kingdom, **OECD average**, Netherlands[1], Switzerland, Israel, Turkey[2,3], Finland[4], Japan[5], Italy[4], Korea[2], France[4], Spain[1], Canada[1], Australia[4], Estonia, Belgium[2], Norway[1], Denmark, Sweden[1], New Zealand

1. Year of reference 2010.
2. Earnings net of income tax.
3. Year of reference 2005.
4. Year of reference 2009.
5. Year of reference 2007.

Countries are ranked in descending order of the relative earnings of 25-64 year-olds with tertiary education.

Source: OECD. Table A6.1. See Annex 3 for notes (*www.oecd.org/edu/eag.htm*).

StatLink ⟍⟋ http://dx.doi.org/10.1787/888932846557

How do returns to education differ with the country development?

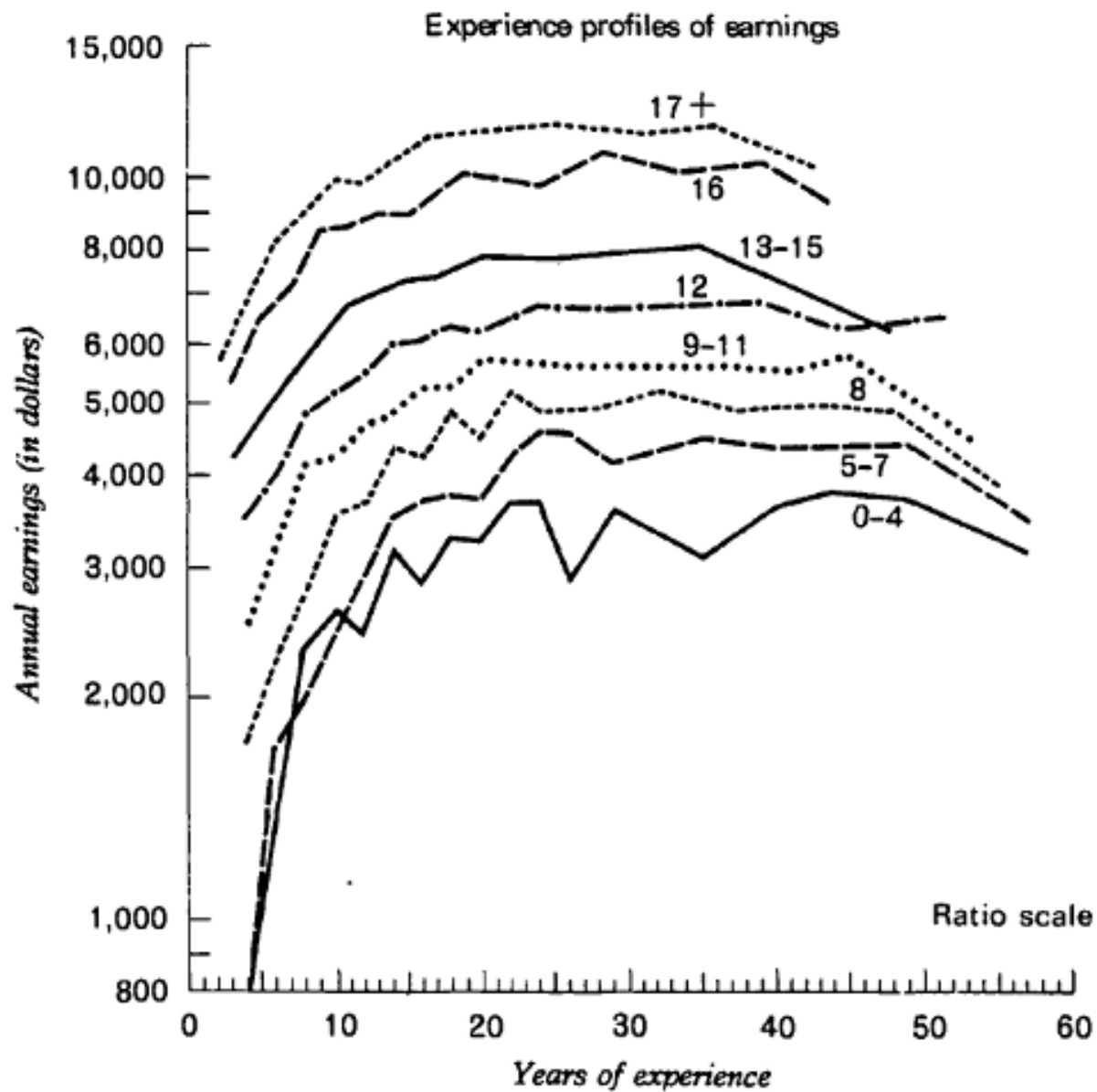FIGURE 1.9 *Returns to education are higher in poorer countries*
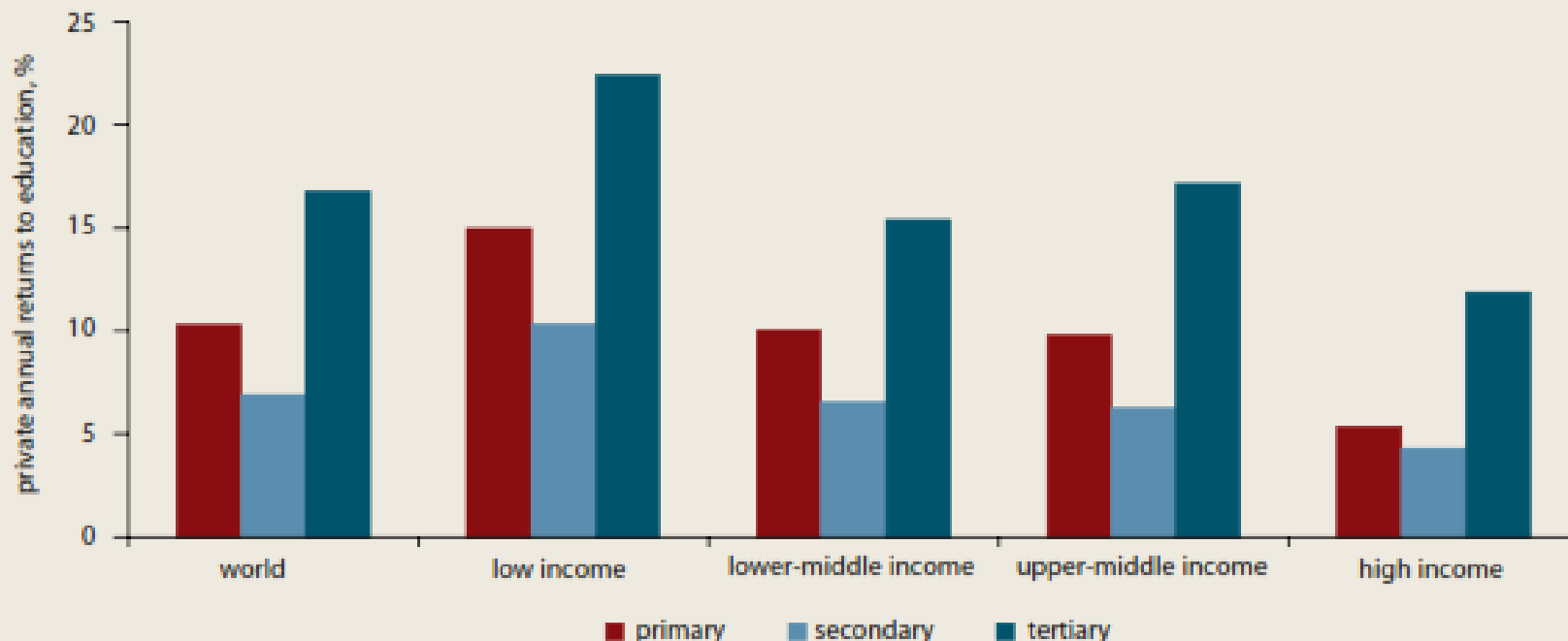
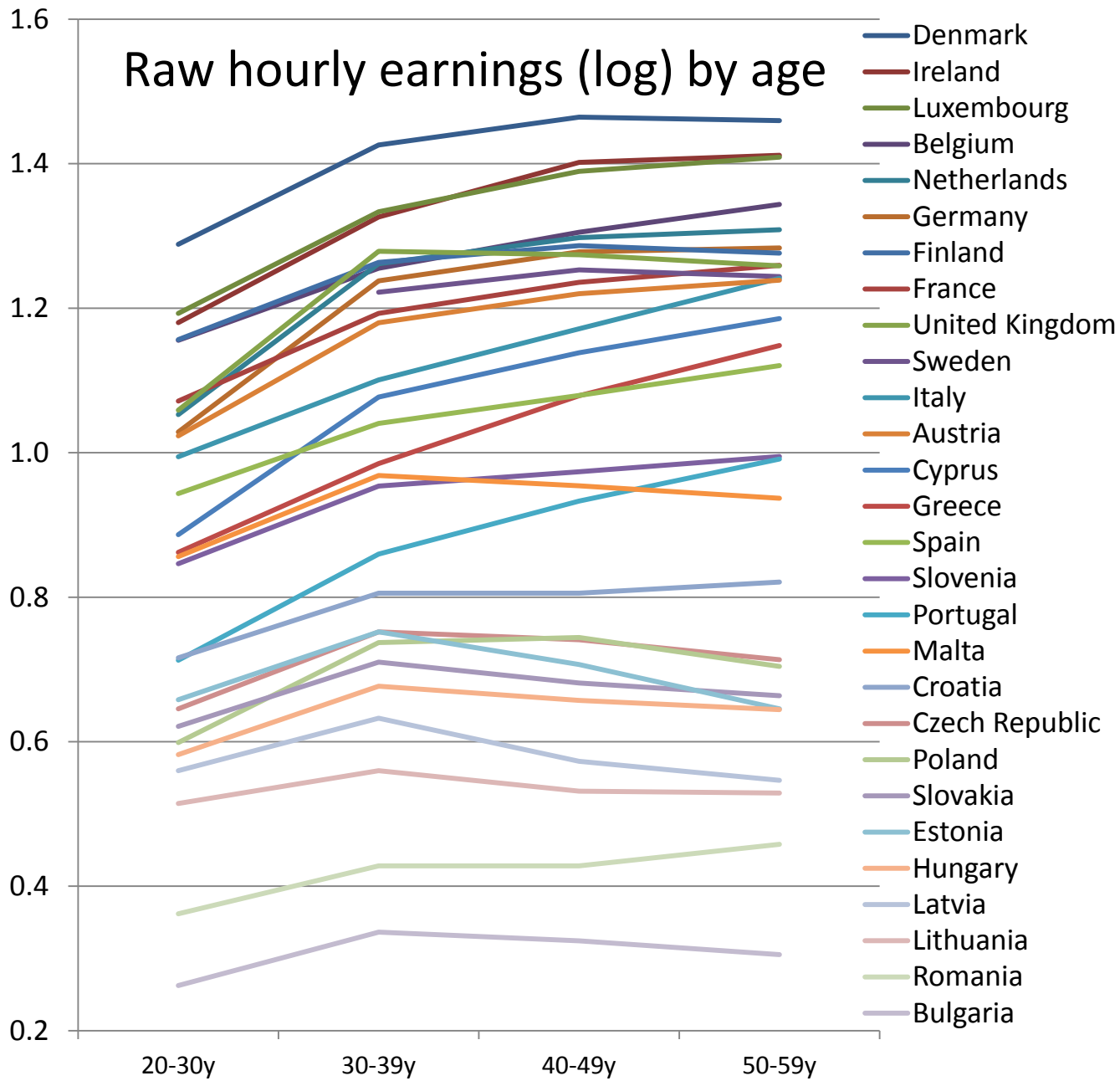Source: Montenegro and Patrinos 2012 for the World Development Report 2013.
Note: Reported figures are unweighted averages of country-level private returns, for the most recent year within the period 2000–10 in a sample of 69 countries.

Work experience

- How do earnings vary with work experience?

- When do young people earn more than old?

- Workers and firms engage in long-term relationships in which the worker is initially underpaid – the wage is lower than the value of the marginal product – but later on in life the worker is overpaid.

Experience profiles of earnings

SOURCE: Mincer (1974, Chart 4, p. 68).

Raw hourly earnings (log) by age

Denmark
Ireland
Luxembourg
Belgium
Netherlands
Germany
Finland
France
United Kingdom
Sweden
Italy
Austria
Cyprus
Greece
Spain
Slovenia
Portugal
Malta
Croatia
Czech Republic
Poland
Slovakia
Estonia
Hungary
Latvia
Lithuania
Romania
Bulgaria

Source: Eurostat, SES, 2010

The role of the private sector

- The private sector is the main engine of job creation and the source of almost 9 of every 10 jobs in the world.

- Programs targeted to small business owners with entrepreneurial potential are vital and likely to improve living standards and productivity.

- Firms are vulnerable to economic downturns.

- Most people prefer job security to higher earnings.

Firm characteristics

- Do foreign or domestic company pay more?

- Do multinationals pay more?

- Is there link between the size of firm and earnings?

- Firm size is positively linked with some dimension of worker quality
(e.g. productivity, motivation, prestige)
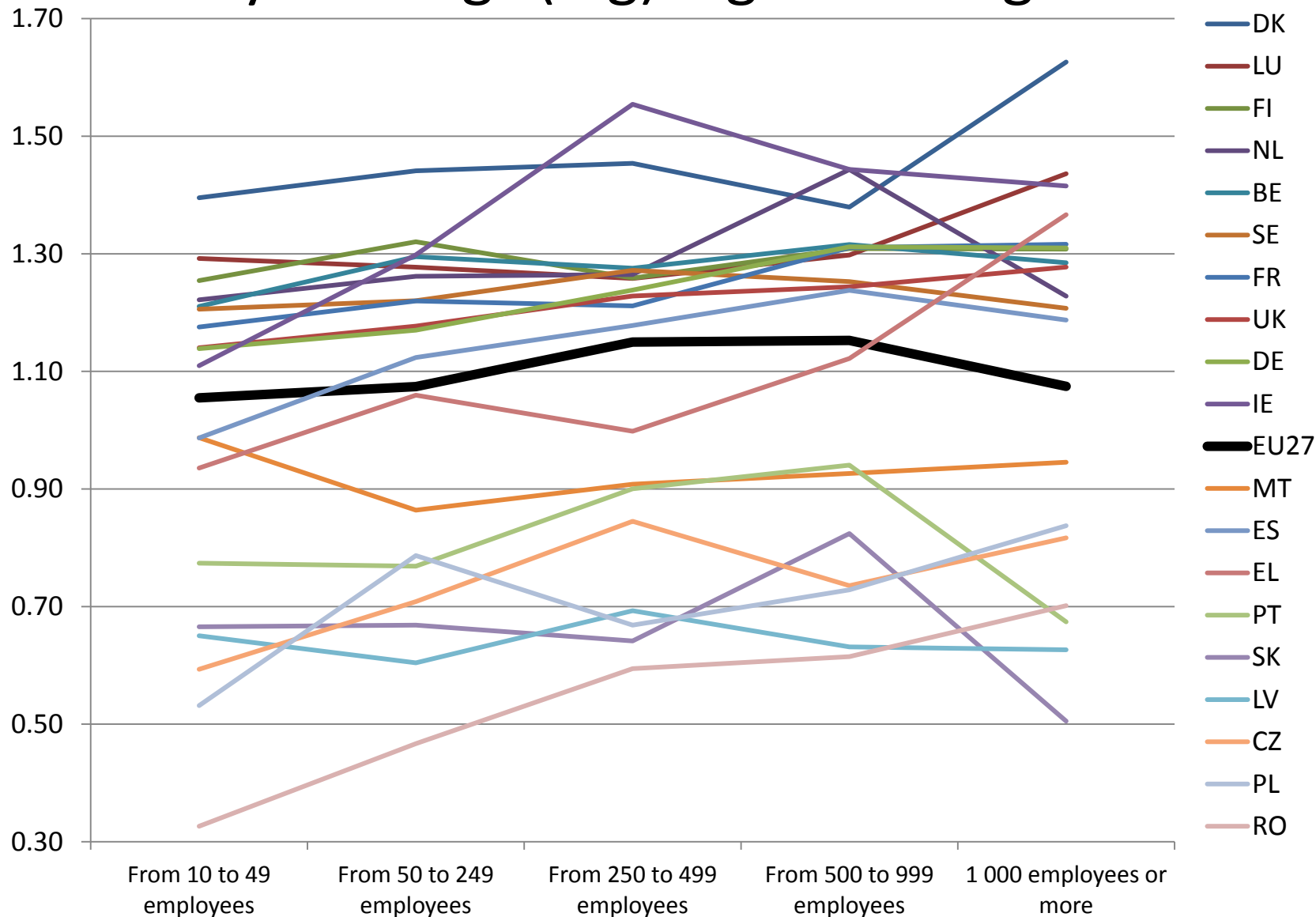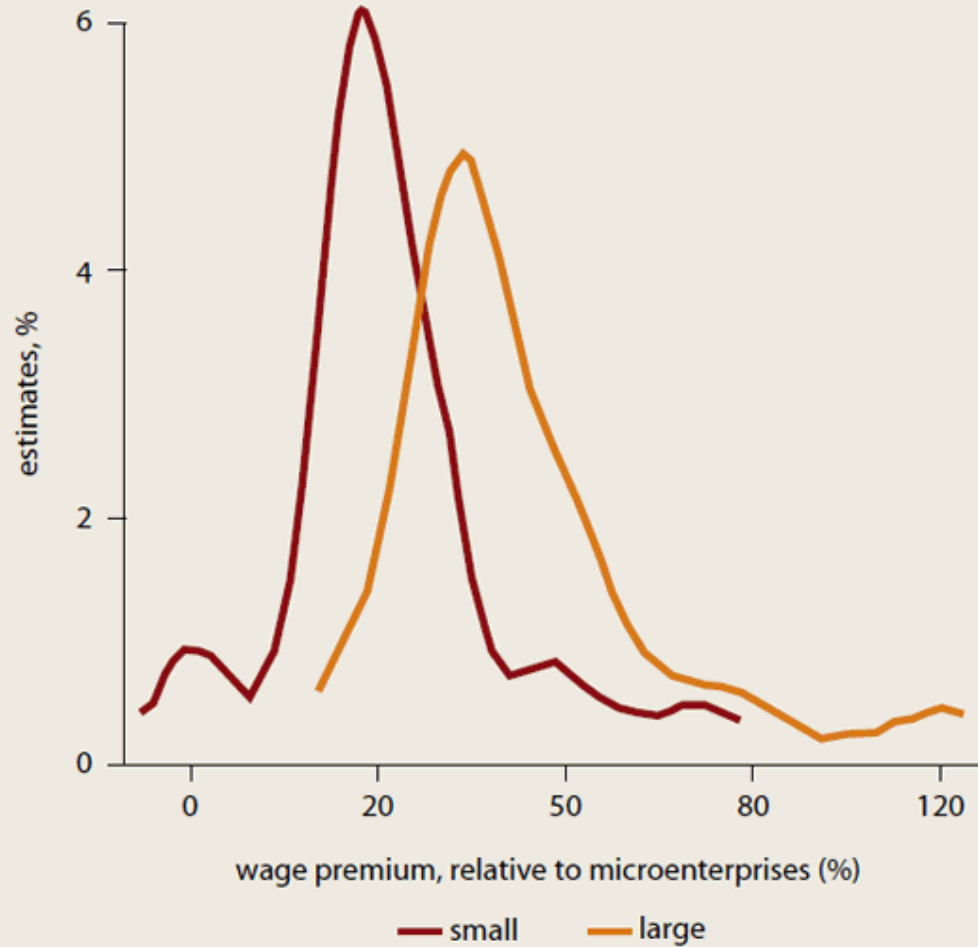
Hourly earnings (log) higher in larger firms

Legend:
- DK
- LU
- FI
- NL
- BE
- SE
- FR
- UK
- DE
- IE
- EU27
- MT
- ES
- EL
- PT
- SK
- LV
- CZ
- PL
- RO

X-axis categories:
- From 10 to 49 employees
- From 50 to 249 employees
- From 250 to 499 employees
- From 500 to 999 employees
- 1 000 employees or more

Y-axis values: 0.30, 0.50, 0.70, 0.90, 1.10, 1.30, 1.50, 1.70

Source: Eurostat, SES, 2010

FIGURE 8 *Larger firms pay higher wages*

Note: The figure uses 138 household and labor force surveys spanning 33 countries over 1991–2010. The horizontal axis reports the estimated wage premium of small firms (10 to 50 workers) and large firms (more than 50 workers) relative to microenterprises, controlling for worker characteristics.

Protecting workers or protecting jobs?

- Institutional indicators include union density, minimum wage legislation, unemployment benefits, coverage, severance pay, or employment protection legislation.

- Unions help workers' to negotiate a larger share of the pie for labour compensation.

- Unemployment benefit can have an impact on workers' reservation wages

- Protecting jobs in times of crises

Check your wage before accepting a job offer

www.WageIndicator.org

WageIndicator.org