UNIWERSYTET WARSZAWSKI
Wydział Nauk Ekonomicznych

Macroeconomics 1

Job Market

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Basics

- *Working age population*(POP) – population able to work, population aged 15 and over, population aged over 15 and under 60/65 (retirement age).

- Inactive(N) – part of the working-age population who does not work and is not looking for work (e.g. students, pensioners, etc.)

- *Active* (LF) – so-called Labor force - people who are of working age and are willing and able to work.

POP = LF + N

Basics

- *Working (E)* – everyone who performed work that brought earnings or income.

- *Unemployed (U)* – a person aged 15-65 who:
  - One did not work during the week in question,
  - is ready to start work in the next two weeks (including a person who is waiting for it to start),
  - has been actively looking for a job in the last four weeks.

$$LF = E + U$$

- Natural unemployment rate

Basics

- *Long-term unemployed* – Persons remaining in the register of the district labor office for a total period of more than 12 months in the last 2 years, excluding periods of internship and vocational training for adults in the workplace
- *Employer* – A person who runs a business on his own account and employs at least one employee.

- *Self-employed* – People who run their own farm or run a business on their own account, without employing hired workers.

Types of unemployment

- ***Structural unemployment*** – caused by a structural mismatch of demand and supply in the labor market. The structure of labor supply, i.e., for example, qualifications, education, experience, place of residence of employees looking for work, is different than the structure of labor demand, i.e. employers' expectations. This unemployment results from constant changes in the structure of the economy.

- ***Frictional unemployment*** – its source is constant changes in the labor market - at any moment in time someone in the economy changes jobs (e.g. a baker is fired from his job and goes to work in another bakery). However, each time it takes some time before they find another job and during this time a small percentage of professionally active people are temporarily unemployed. The minimum level of unemployment that cannot be reduced is part of natural unemployment.

Types of unemployment

- ***Bezrobocie keynsowskie lub koniunkturalne –*** wynika z niedostatecznego popytu na pracę. Powstaje w sytuacji, gdy produkcja danej gospodarki nie osiąga swego poziomu potencjalnego (pełne wykorzystane czynników produkcji).

- Według Keynesa powodem tego jest niedostateczny zagregowany popyt, któremu towarzyszą sztywne płace realne (np. z powodu ustalenia płac minimalnych) i ceny: chociaż jest wielu pracowników chcących zatrudnić się za płacę niższą niż obserwowana na rynku pracy dla ludzi o podobnych kwalifikacjach, to ofert pracy nie ma.

Types of unemployment

- ***Bezrobocie klasyczne*** – wynika ze sztucznego ustalania płac powyżej poziomu równoważącego popyt z podażą na rynku pracy. Na skutek działalność związków zawodowych lub ustawodawstwa określającego płace minimalne.
- Mimo dużej liczby pracowników chcących zatrudnić się za płacę niższą niż obserwowana na rynku pracy dla ludzi o podobnych kwalifikacjach, na skutek prawa i nacisków związków zawodowych nie mogą zostać zatrudnieni.

- Podobne do keynesowskiego, wynika z niezrównoważenia popytu i podaży pracy. Różne są jednak powody tych rozbieżności.

Labor market indicators

- *Economic activity coefficient*- the ratio of professionally active people to the working-age population

$$a = LF/POP$$

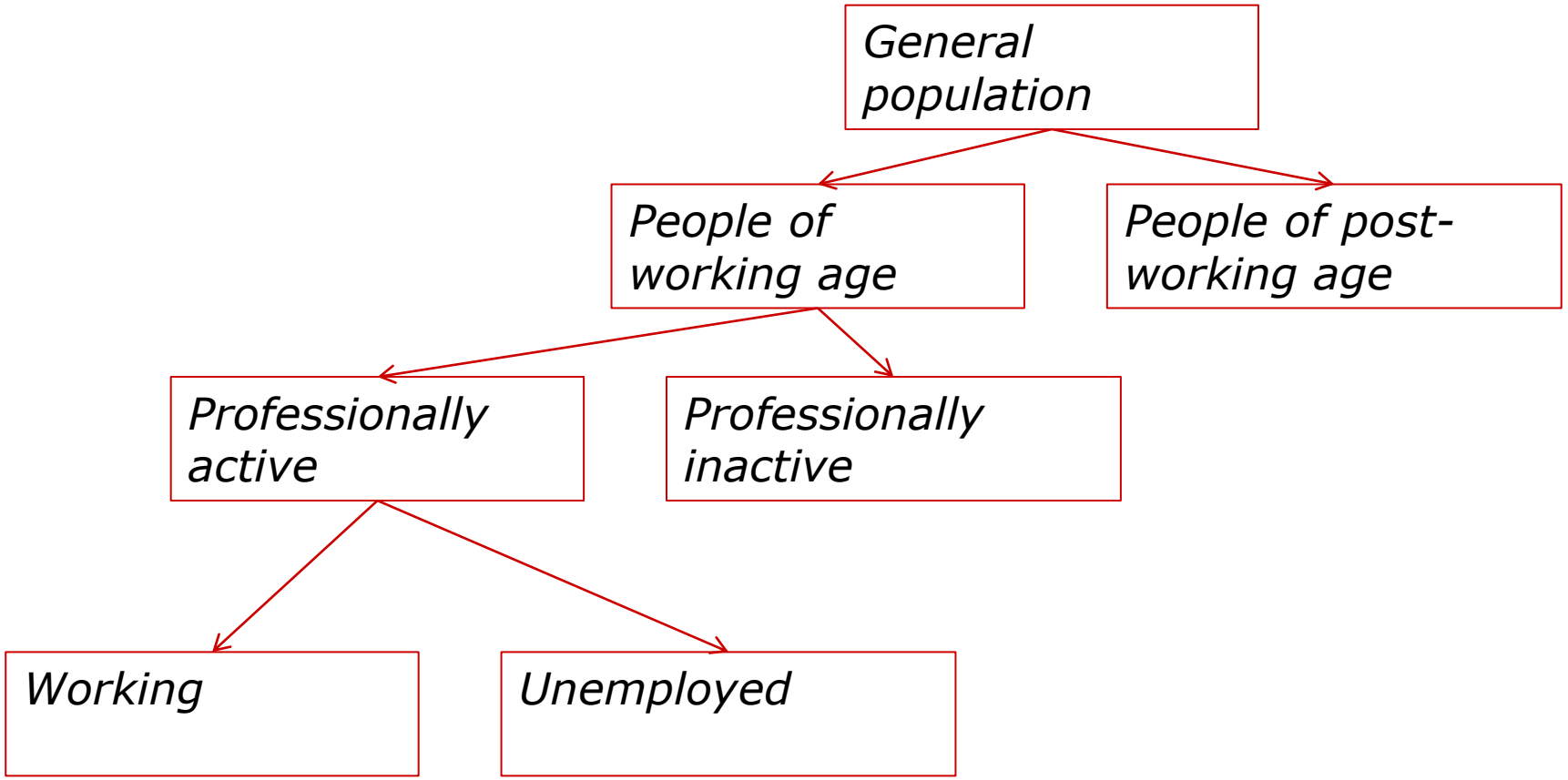
- *Employment rate*- the ratio of working people to the working-age population

$$e = E/POP$$

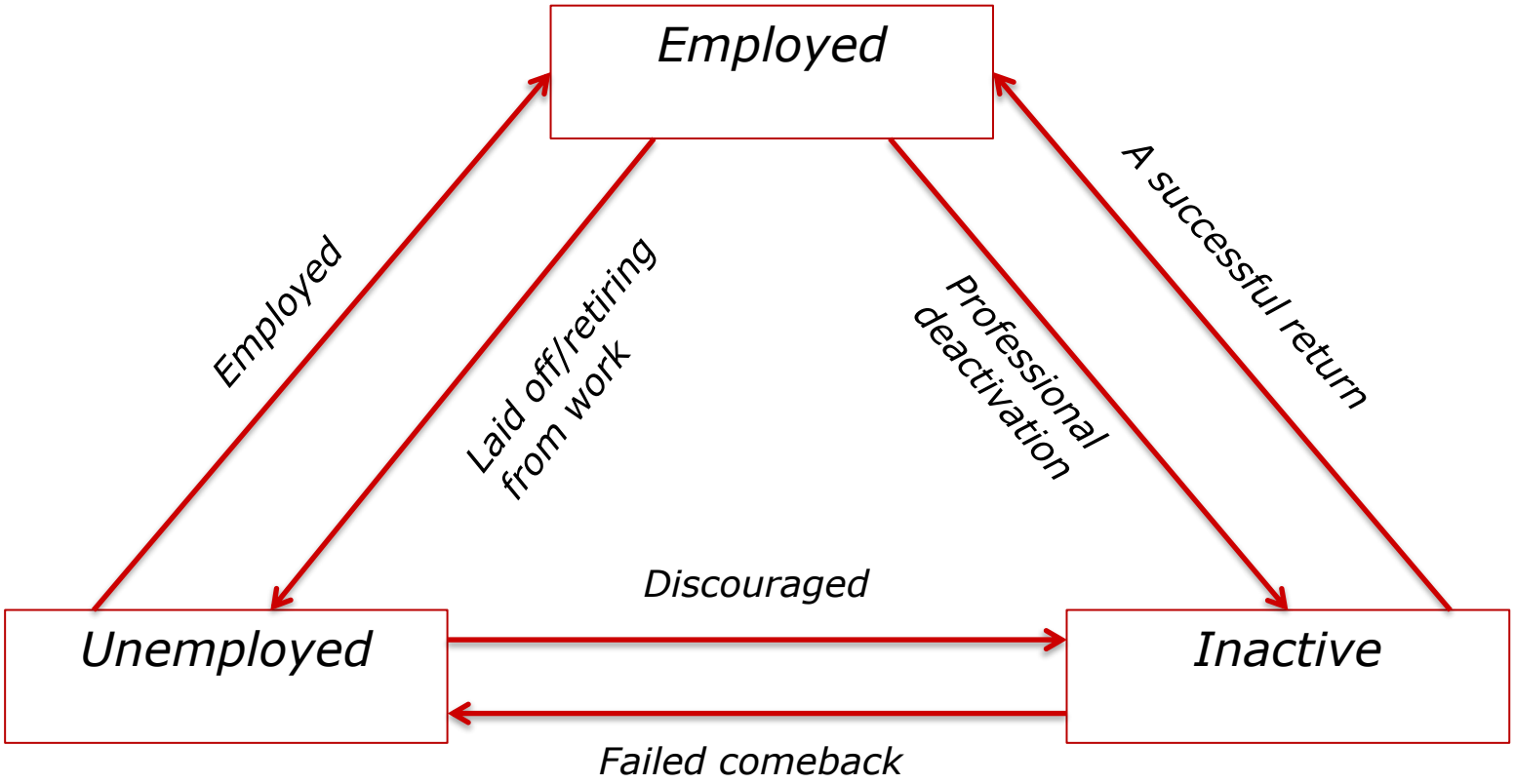
- *Unemployment rate*- ratio of the number of unemployed to the number of professionally active people

$$u = U/LF$$

Population breakdown



Flow in the labor market



Labor market
Labour supply

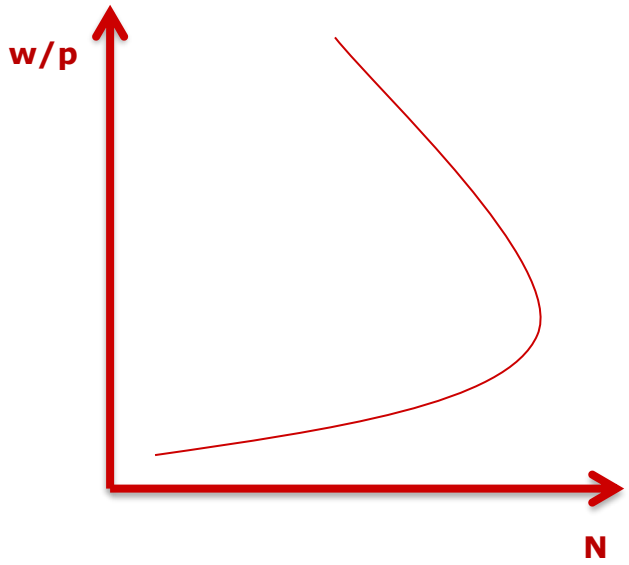
- Depends on employees' preferences
- time = work + rest
  - demand for free time
  - income level
  - price of free time (this will be the equivalent of the salary offered to the employee)
  - employee preferences

- Income effect
  - income increase
  - increase in demand for a given good (free time)
  - (caeteris paribus) decrease in labor supply

- Substitution effect
  - an increase in the price of a good, at a constant level of income
  - decrease in demand for a good (free time)
  - an increase in wages causes a decrease in demand for free time (increase in labor supply)

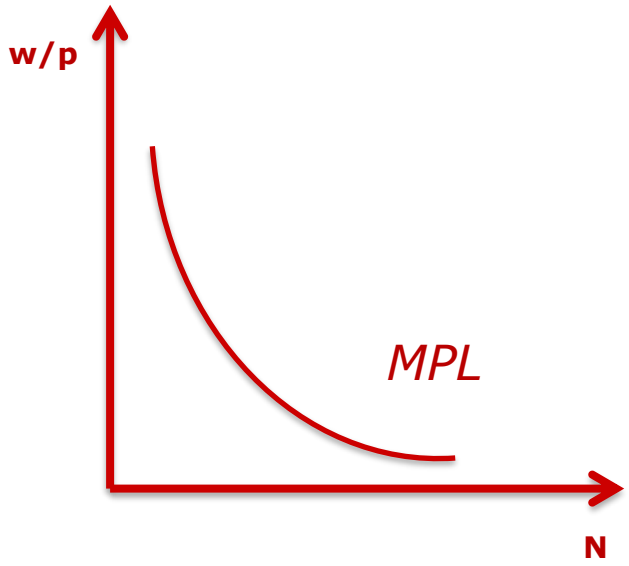
Labor market
Labour supply

- Increase in wages ↦ occurrence of both effects simultaneously
- Which of them will prevail?
-
  - substitution effect – stronger at a lower initial level of income
  - income effect – for a high level of real wages.

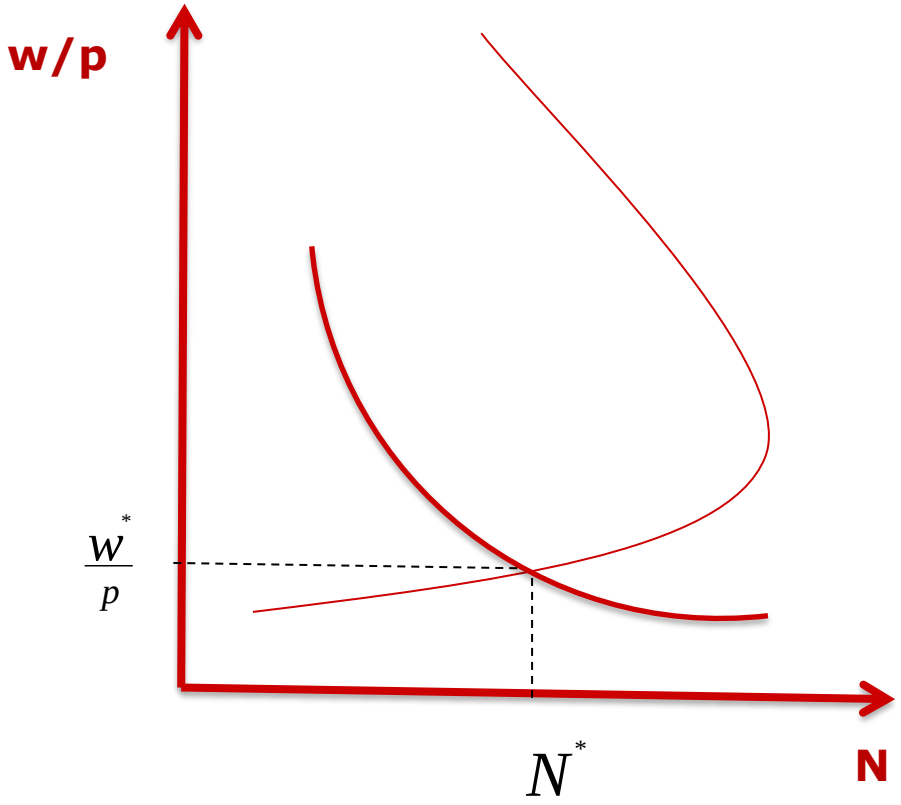


Labor market
Labour demand

- **Marginal product of labor (MPL)**
  - Increase in production resulting from the employment of an additional employee (caeteris paribus)
  - MPL > (w/p)
- Companies increase employment until MPL = (w/p)
- Increase in resources of other production factors (e.g. physical capital)
  - Shift of the curve upwards
  - Greater demand for work

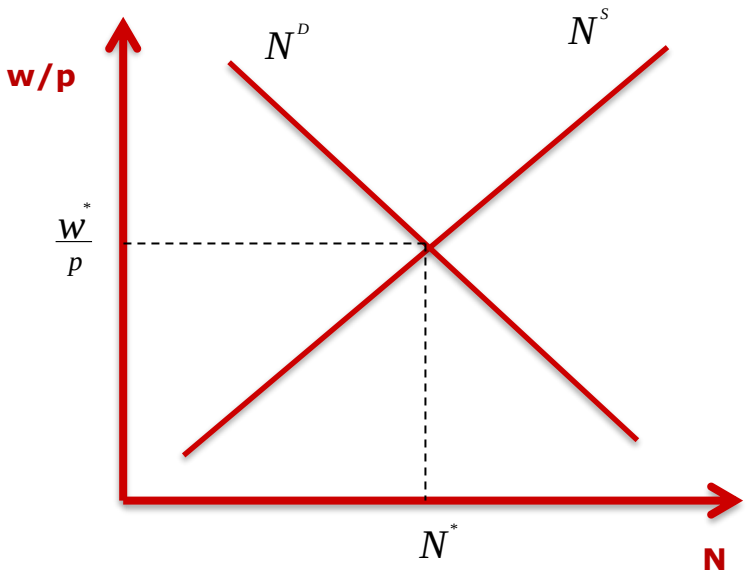


Labor market
Equilibrium



Institutions in the labor market

- Minimal wage
  (w/p)’ > (w/p)*
- Working unions
  - Negotiating the level *w*
- Tax wedge
  - Taxation of income affects N^D
  - Shift the curve to the left
  -
- Unemployment benefits
  - Increasing POP
  - Decreased willingness to work
  - Increase in the level of natural unemployment



Students financial expectations

Table 1. Students' expectations of monthly salary

Expected salary	Number of respondents	Minimum salary (in PLN)	Maximum salary (in PLN)	Average salary (in PLN)
Immediately after university	273	1,800	10,000	3,422.95
5 years after university	271	2,500	37,000	6,081.73
10 years after university	269	3,500	370,000	10,807.99

Table 6. Gender and financial expectations

Gender	Financial expectations (in PLN)		
	Immediately after university	5 years after university	10 years after university
Female	3,094.18	5,336.21	8,355.52
Male	3,800.91	6,939.68	13,675.81

https://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-ba962189-86b2-4c8a-9517-fe89c4060914

Students financial expectations

Table 2. Grade average and financial expectations

Grade average in:		Financial expectations (in PLN)		
		Immediately after university	5 years after university	10 years after university
Elementary school	≤4.5	3,500.00	5,794.29	8,600.00
	>4.5	3,425.93	6,148.46	11,233.85
Middle school	≤4.5	3,588.95	6,435.48	9,901.64
	>4.5	3,381.97	5,991.02	11,133.41
High school	≤4.5	3,439.97	6,021.23	9,297.93
	>4.5	3,432.63	6,250.42	12,960.68

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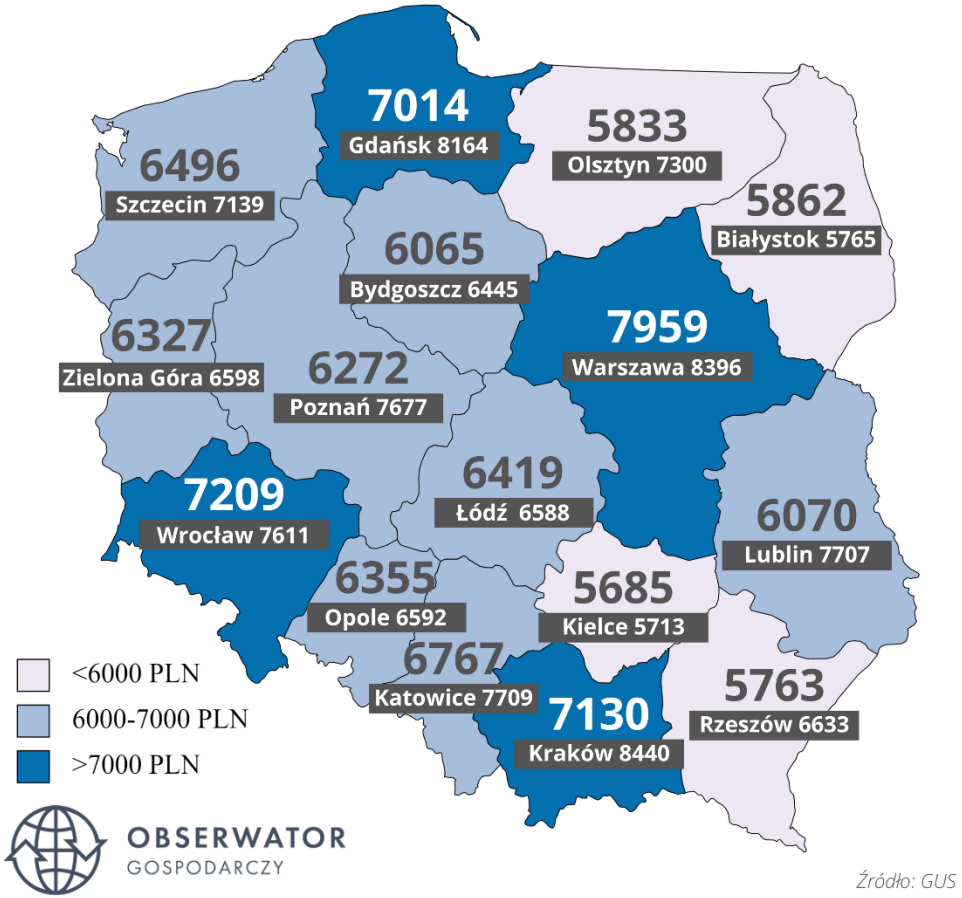
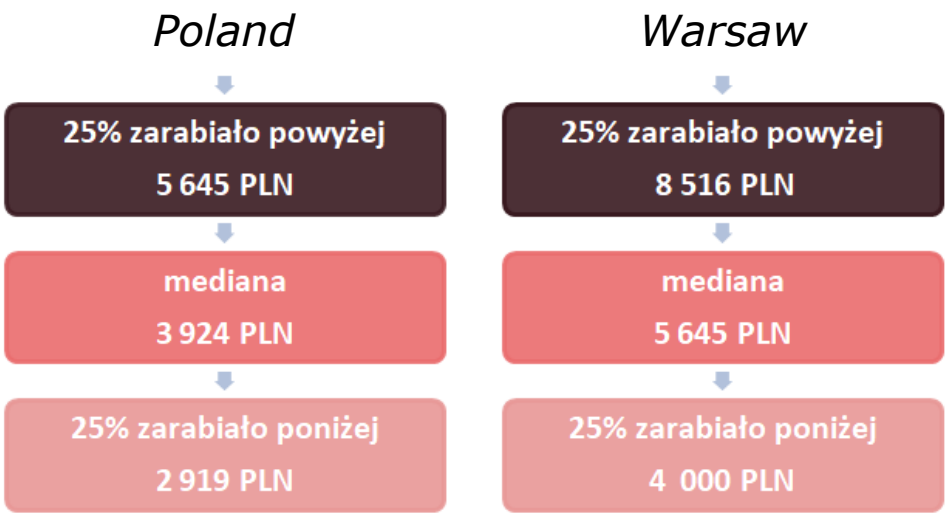
Wage distribution



Źródło: GUS

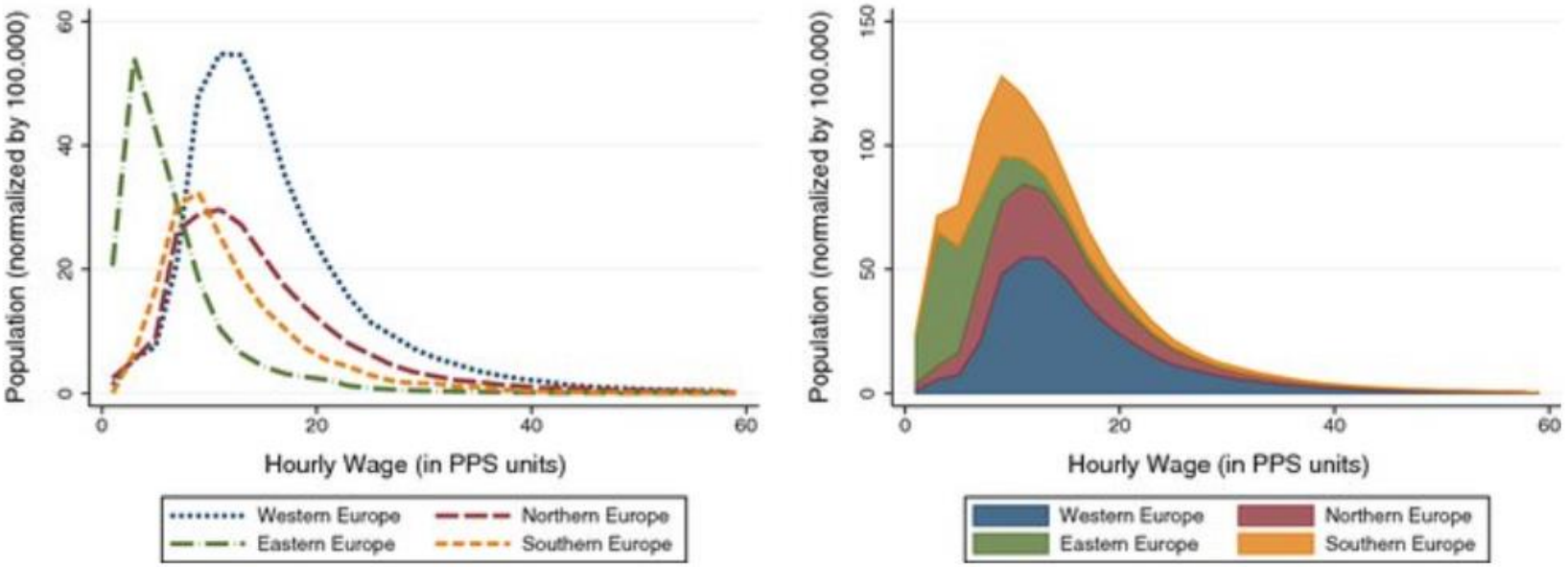
Average wage in January 2023

Wage in Poland and in Warsaw 2017



Źródło: Raport Wynagrodzenia w Warszawie w 2017 roku, Sedlak & Sedlak

Hourly wage

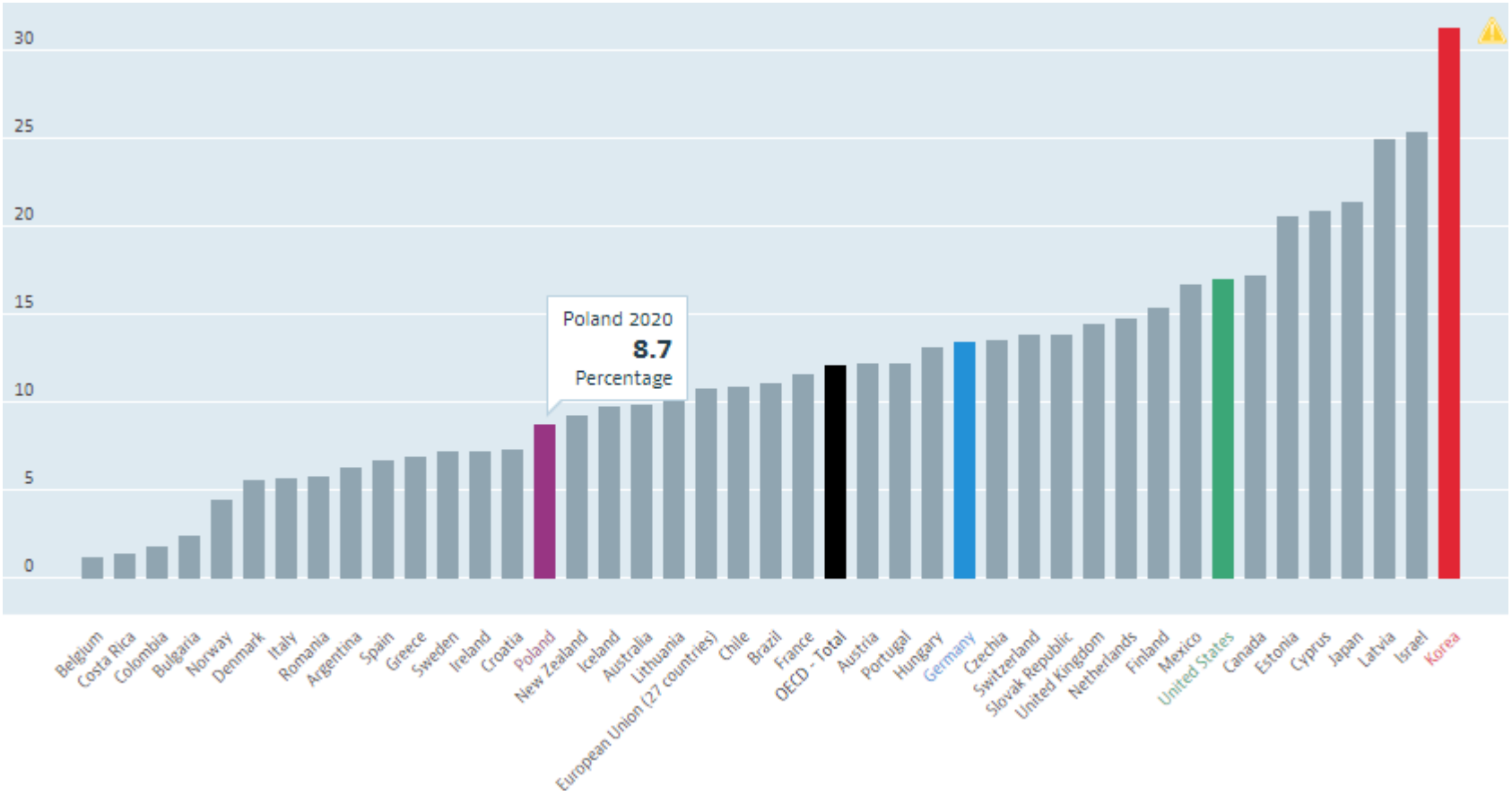


Caption

Distribution of Hourly Wage Rates by Region. Western Europe: BE, DE, FR, LU, NL; Northern Europe: DK, EE, FI, LV, LT, SE, UK; Eastern Europe: BG, CZ, HU, PL, RO, SK; Southern Europe: CY, ES, IT, MT, PT, SI. See Table 1 for a guide to country abbreviations

https://www.researchgate.net/publication/350191257_Equity-efficiency_implications_of_a_European_tax_and_transfer_system/figures?lo=1

Gender pay gap (OECD data)



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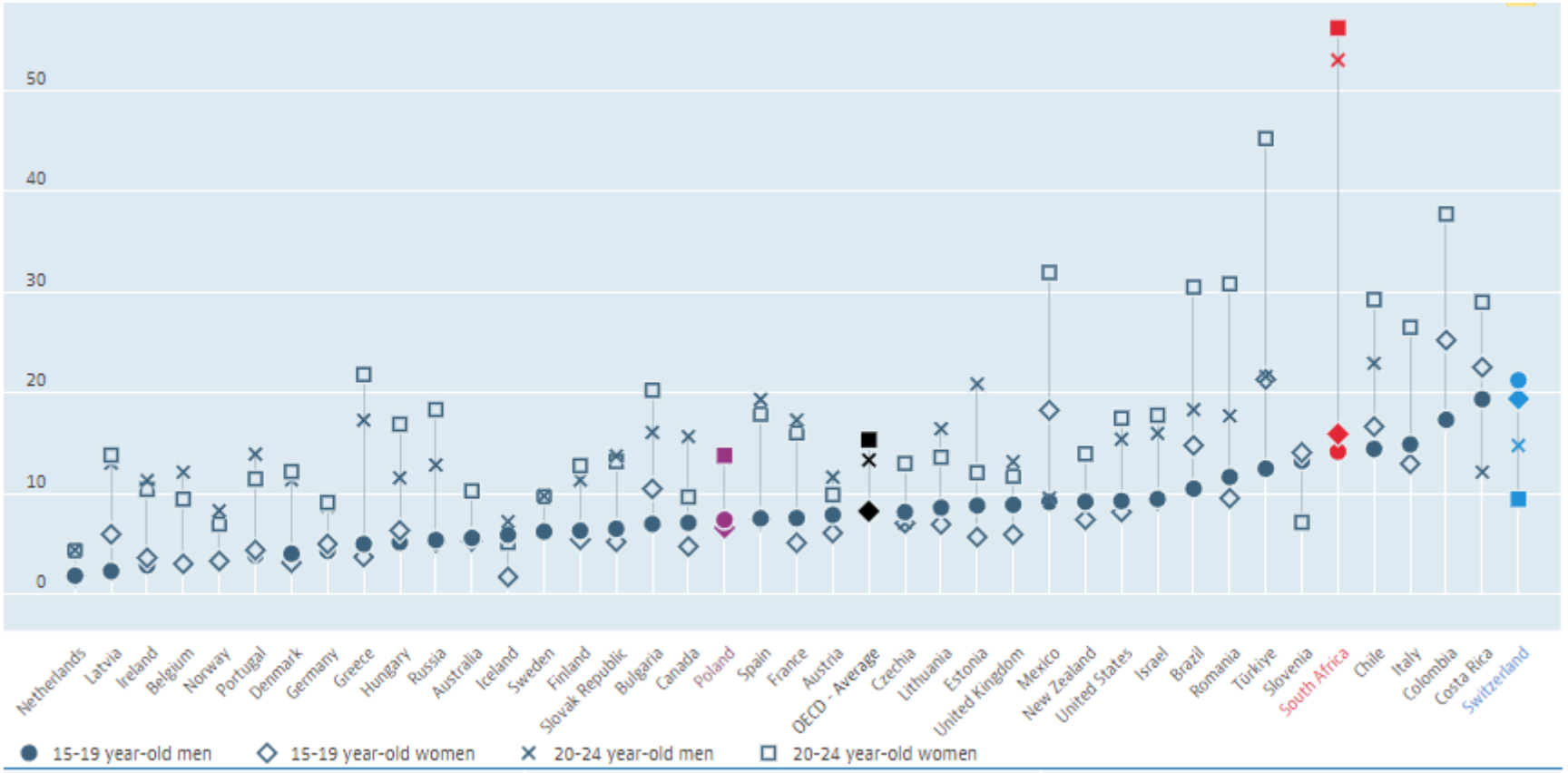
https://data.oecd.org/earnwage/gender-wage-gap.htm

Youth not in employment, education or training (NEET)

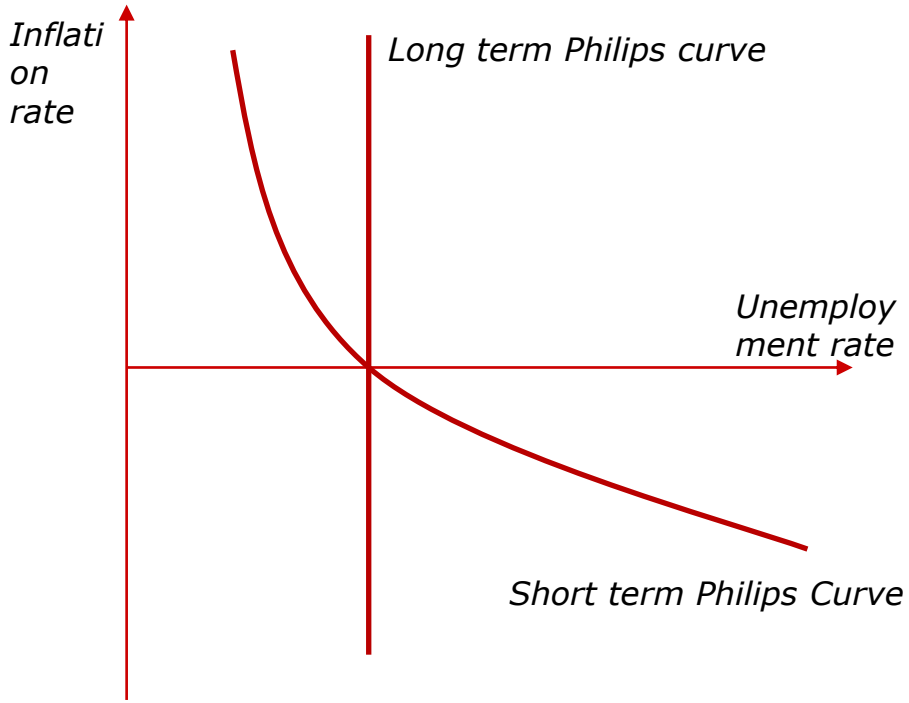


https://data.oecd.org/earnwage/gender-wage-gap.htm

Gender Wage Gap in Poland – Can It Be Explained by Differences in Observable Characteristic? - Karolina Goraus*, Joanna Tyrowicz - *Ekonomia nr 36/2014*

- In general, it is inadequate to treat the raw gender wage gap (9%) as a measure of discrimination. Women may display characteristics that are not valued (or less valued) by the labour market
- Analysis of gender differences in characteristics demonstrates that females to a greater extent exhibit characteristics that are well rewarded in the labour market. Despite better education, they are less frequently employed in better paying positions
- Estimators of actual gender gap in hourly wages obtained with both parametric and non-parametric methods indicate that a measure adjusted for differences in characteristics is actually twice as big as the raw wage gap differential and amounts to as much as 20%
- In fact, if variable at all, the adjusted gender wage gap conforms to the behaviour of unit labour costs – the more lax the labour market conditions, the higher the chances for women to be less unequally compensated

Philips curve



Okun Law

$$\left(\overline{Y} - Y\right) / \overline{Y} = c\left(U - \overline{U}\right)$$

Where:

$\overline{Y}$ *The level of production at full employment,*

Y actual production status,

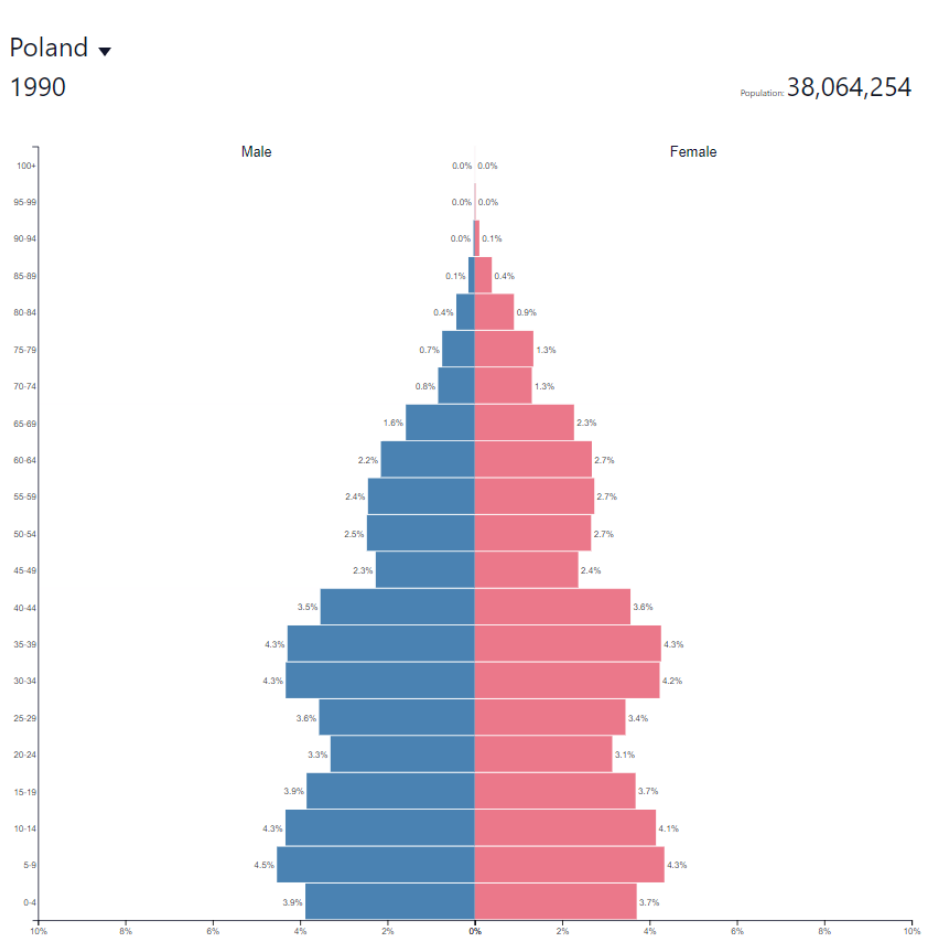
$\overline{U}$ *Natural unemployment rate,*

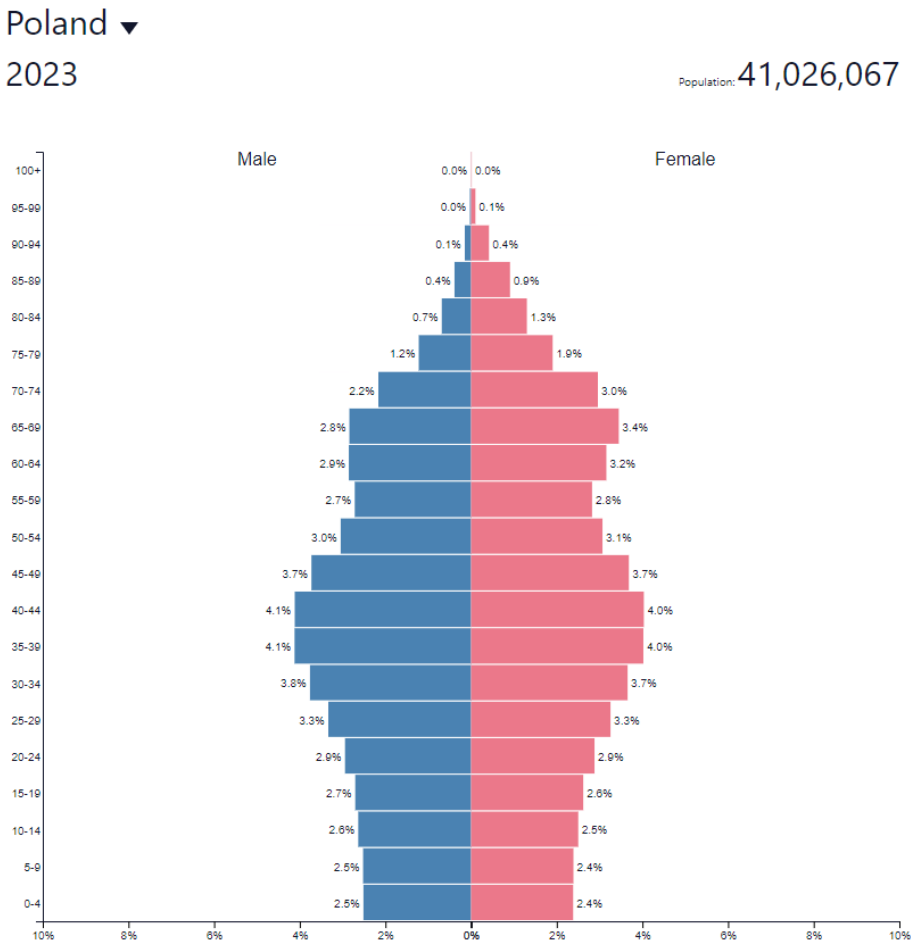
U current state of unemployment,

c variation coefficient.

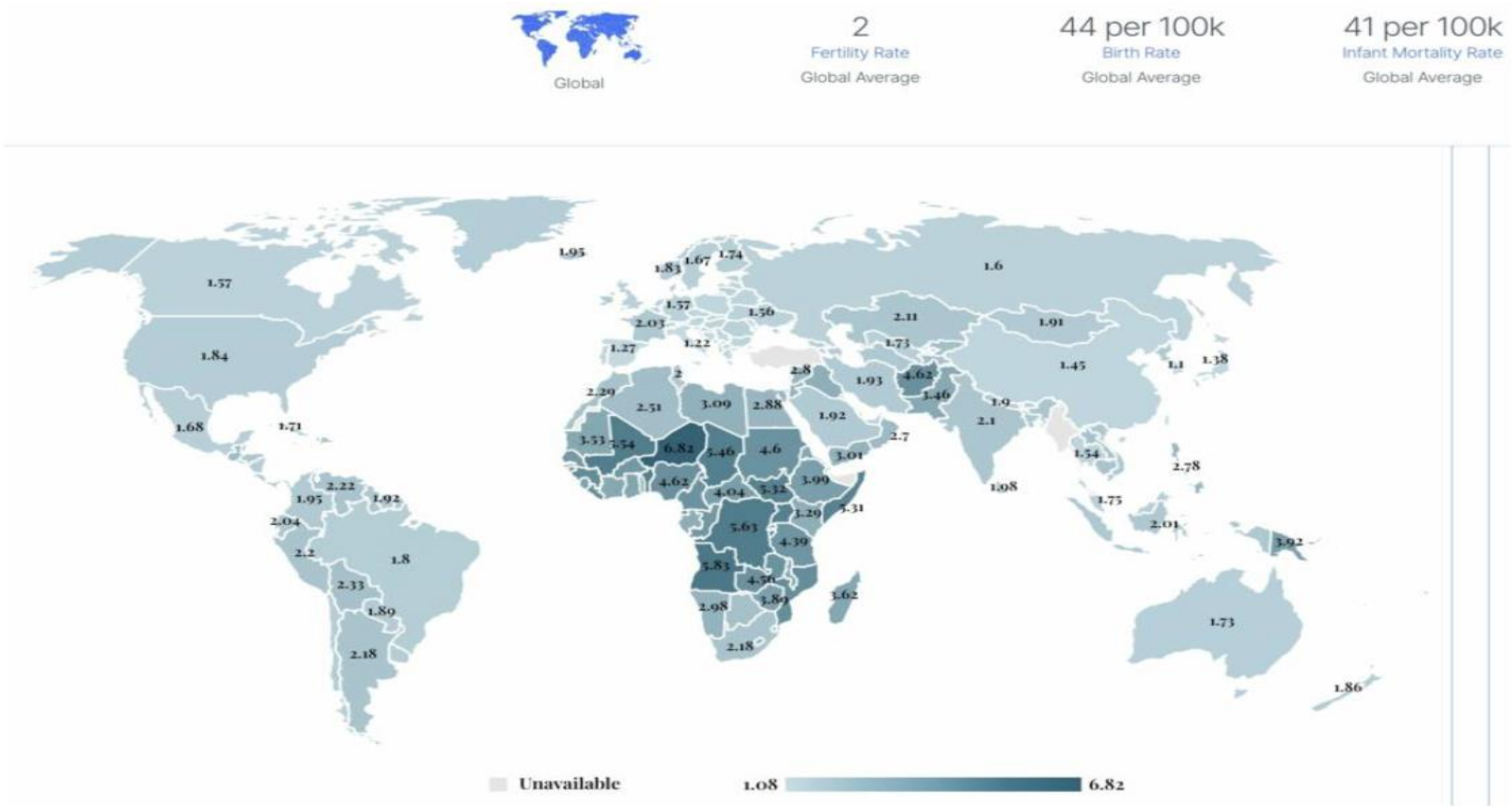
Increase in production → increase in employment (companies must employ additional people, otherwise they would not be able to increase production)

Age and gender pyramid in Poland





Global Map With Fertility Rates



https://www.nextbigfuture.com/2023/05/global-map-with-fertility-rates.html