

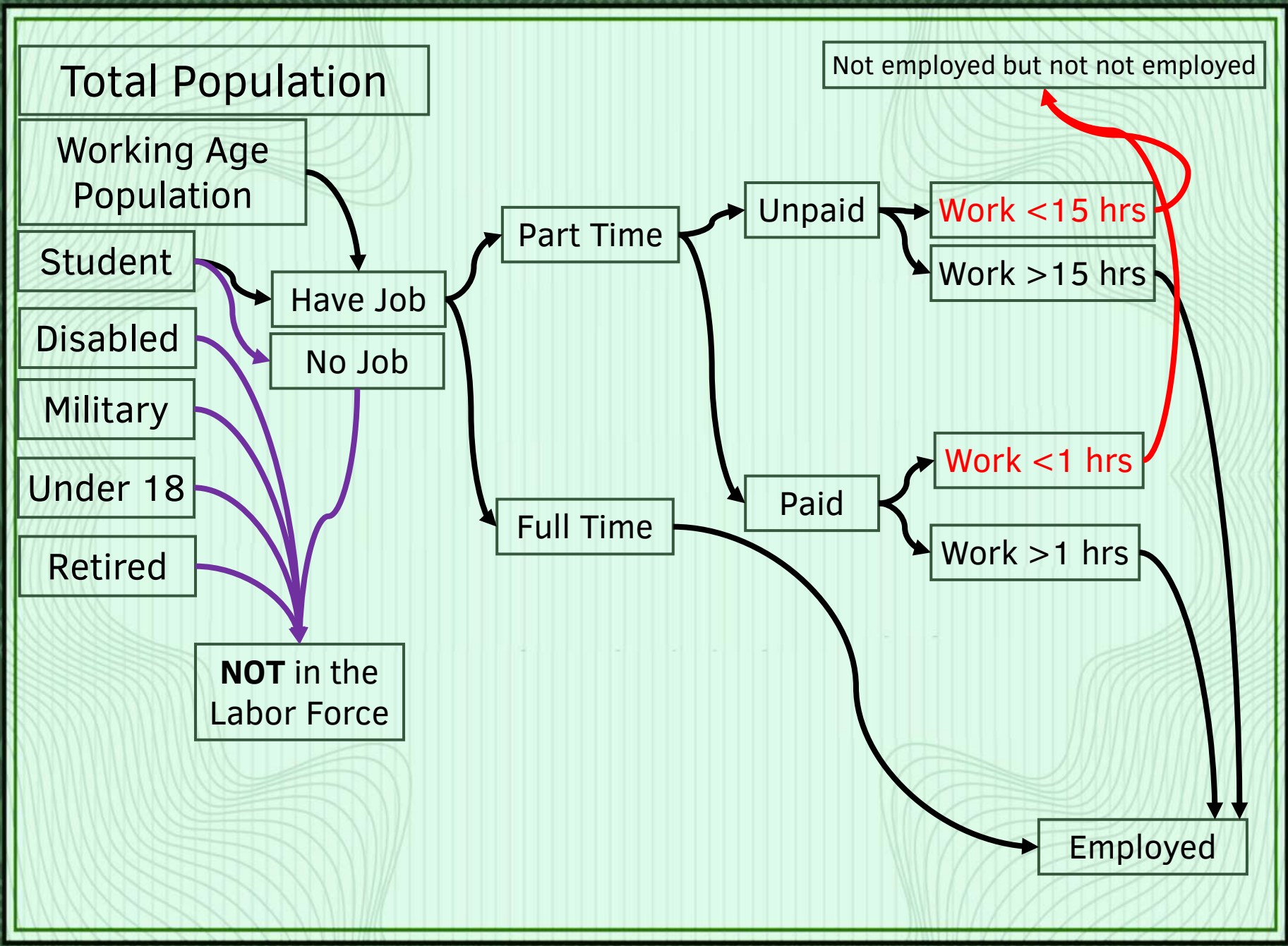
Unemployment

3/25

3/27

What is it?

- ▶ A measure of how many people needs jobs.
- ▶ Sample of everyone 16 and older, employment status, monthly



Total Population

Working Age
Population

Retired

Disabled

Student

Military

Under 18

Have Job

Unpaid

Work <15 hrs

Part Time

Paid

Work <1 hrs

No Job

NOT Looking
for Job

NOT in the
Labor Force

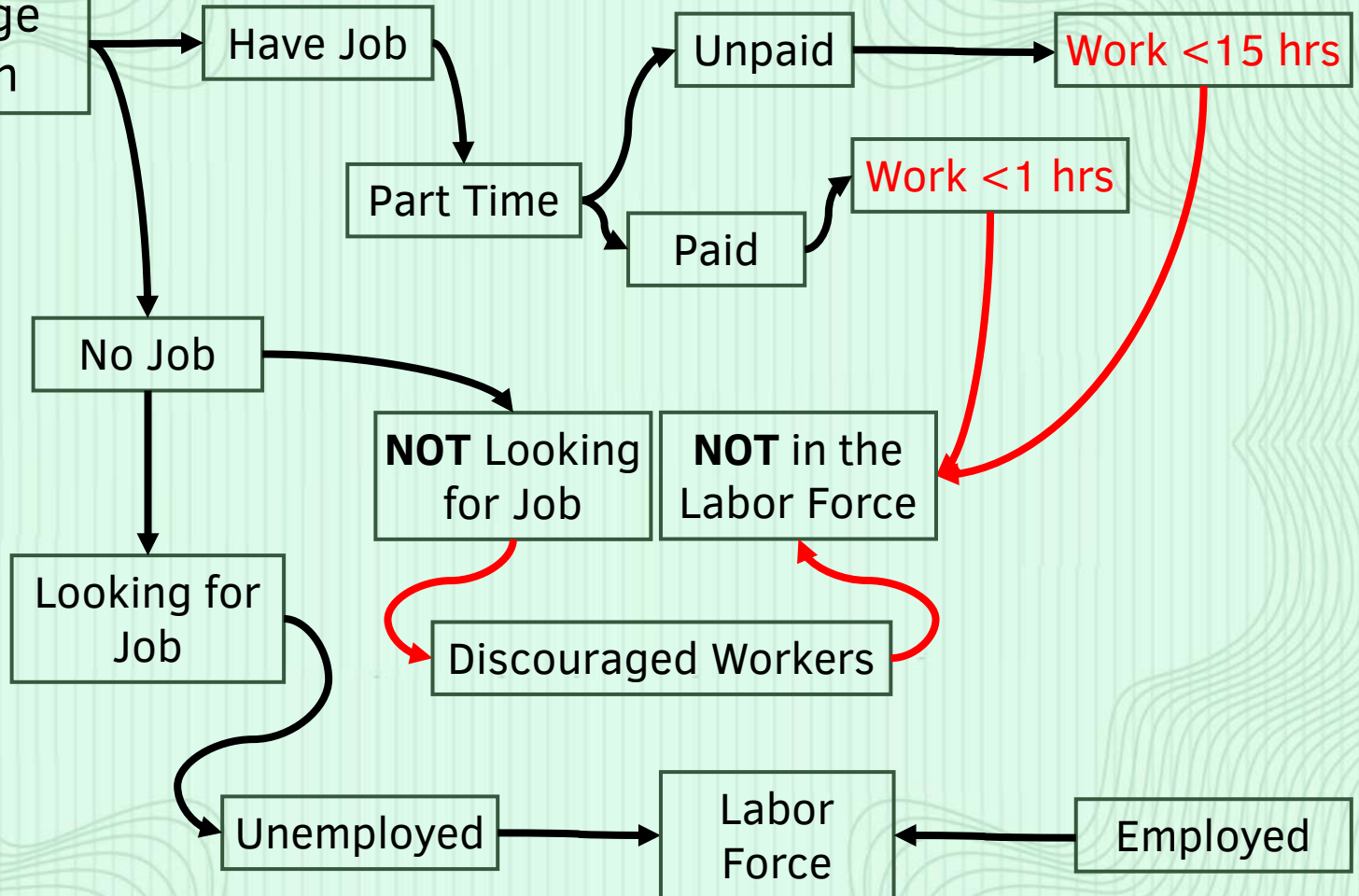
Looking for
Job

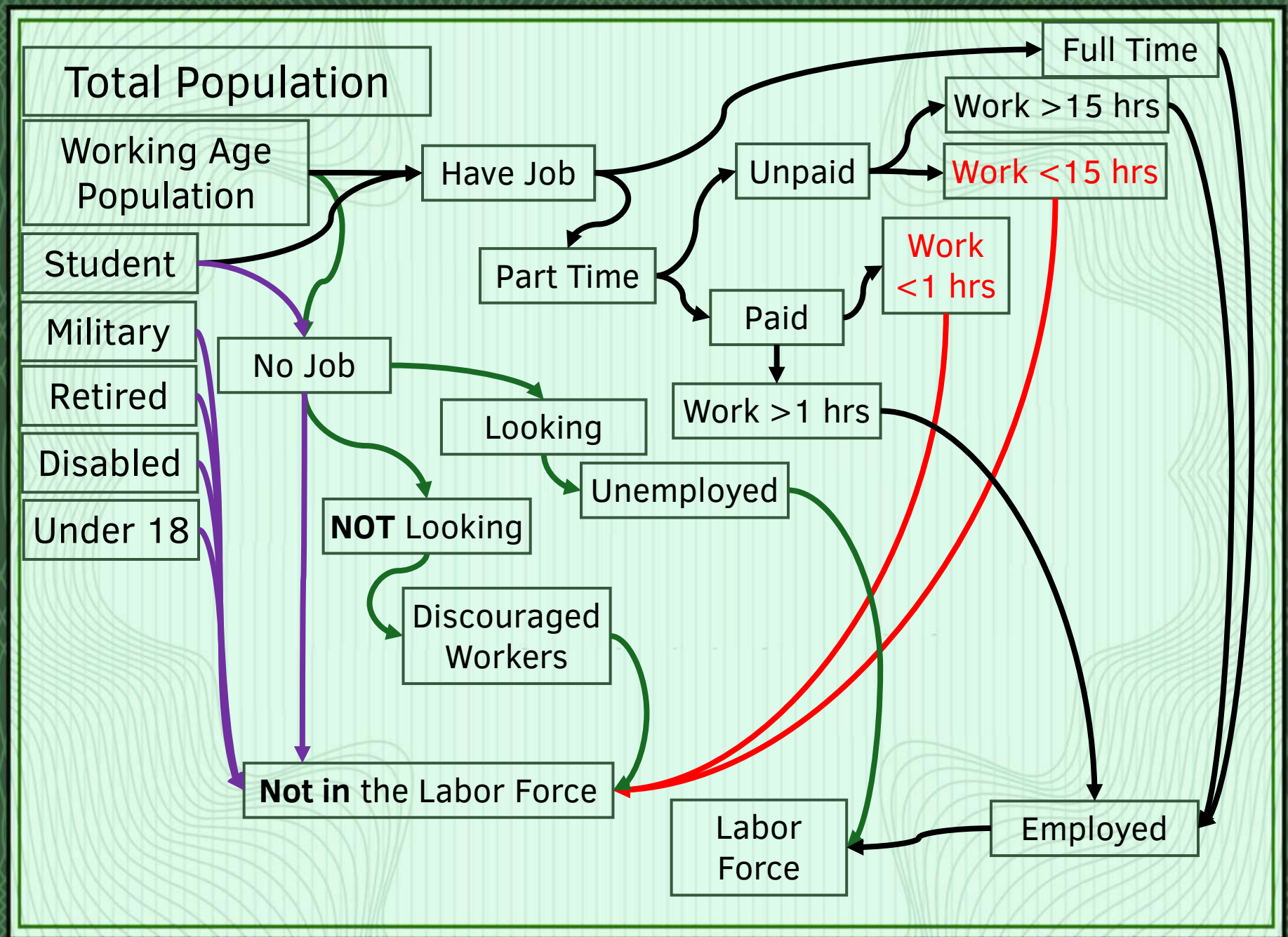
Discouraged Workers

Unemployed

Labor
Force

Employed

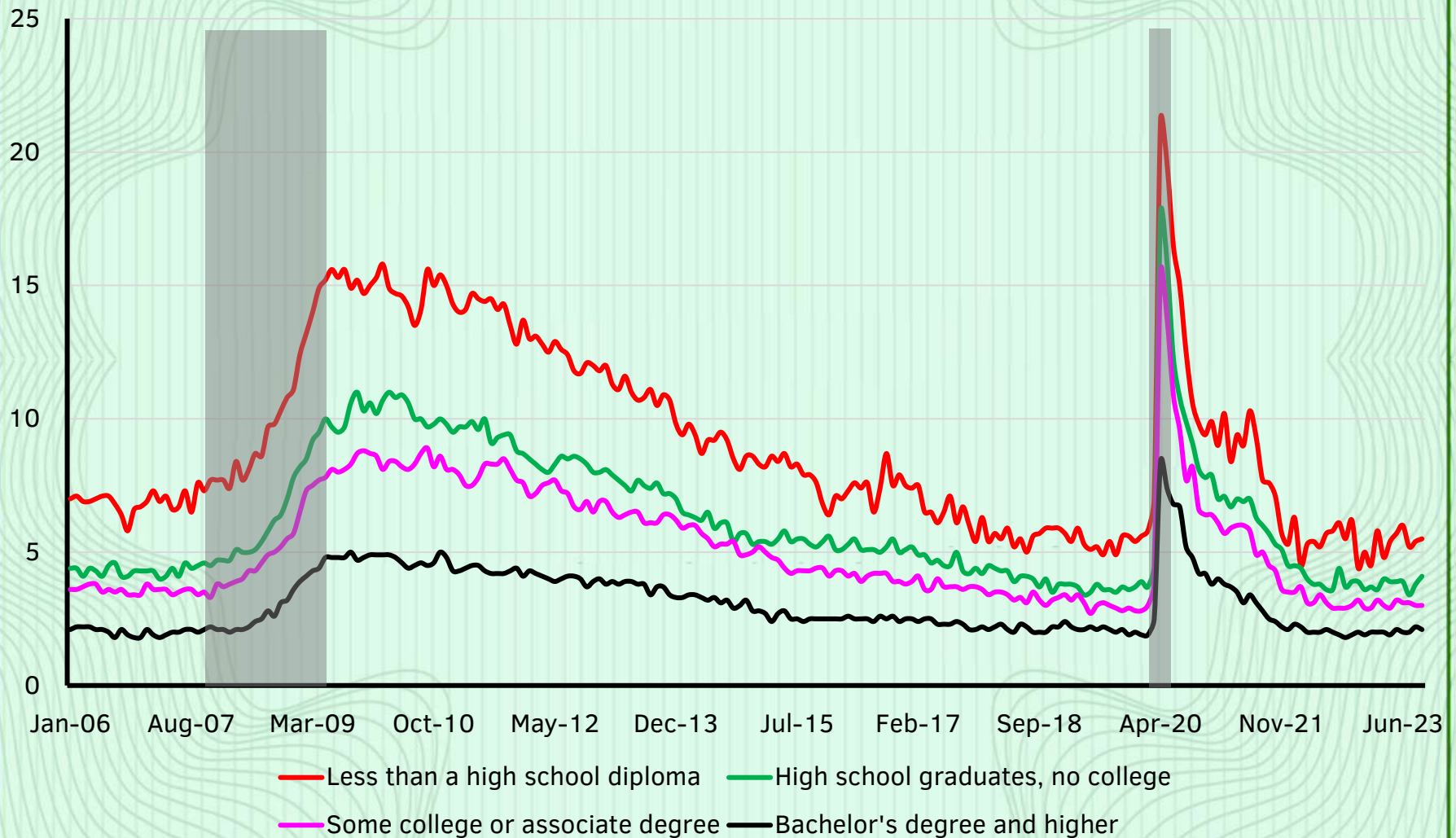




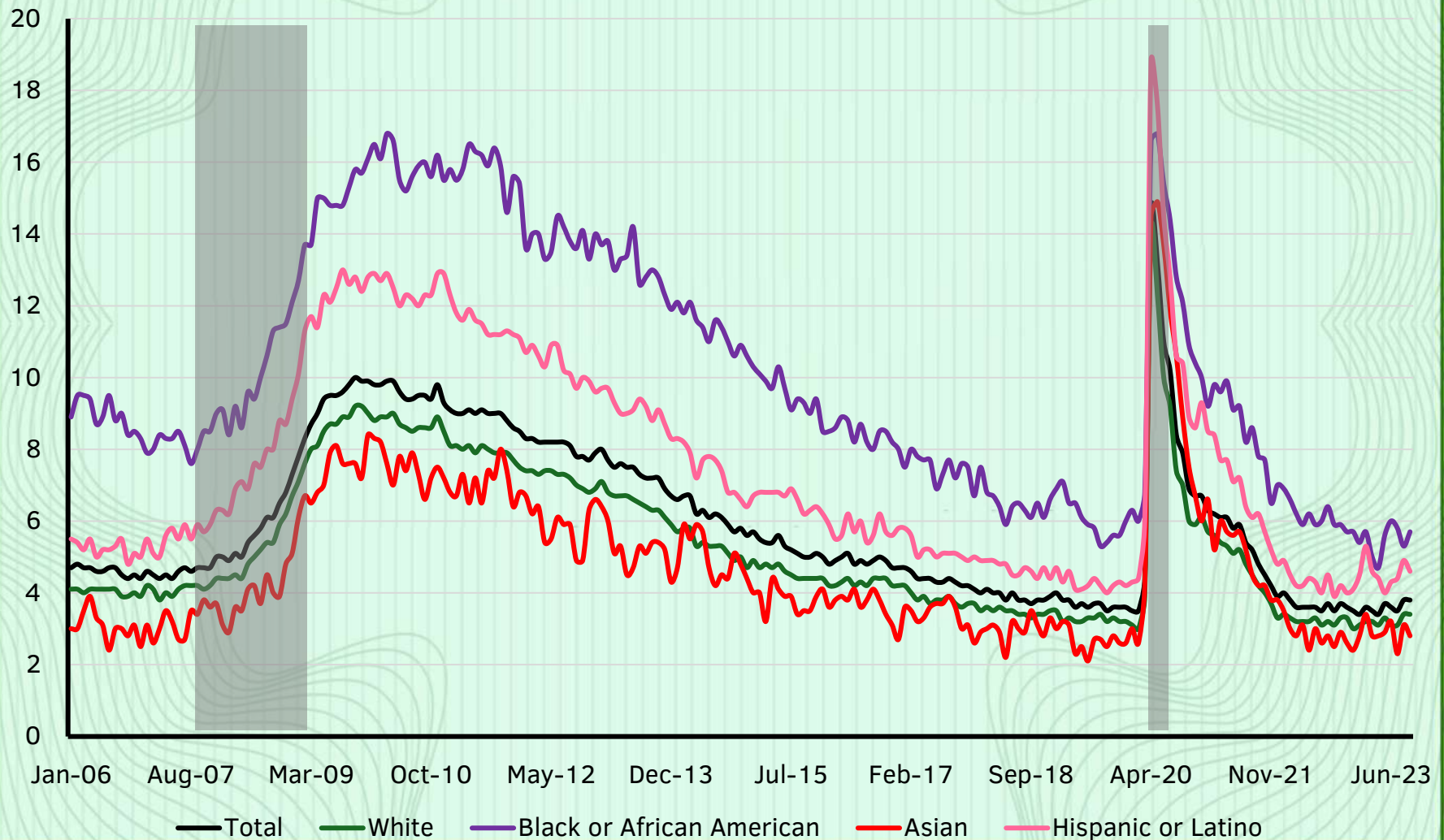
Formulas

Term	Abbr.
Employed	$= E$
Unemployed	$= U$
Population	$= POP$
Working Age Population	$= W_{pop}$
Labor Force	$= LF = U + E$
Term	Equation
Unemployment Rate	$= \frac{U}{LF} = \frac{\text{Unemployed}}{\text{Labor Force}}$
LF Participation rate	$= \frac{LF}{W_{POP}} = \frac{\text{Labor Force}}{\text{Working Age Population}}$
Employment Pop Ratio	$= \frac{E}{W_{POP}} = \frac{\text{Employed}}{\text{Working Age Population}}$

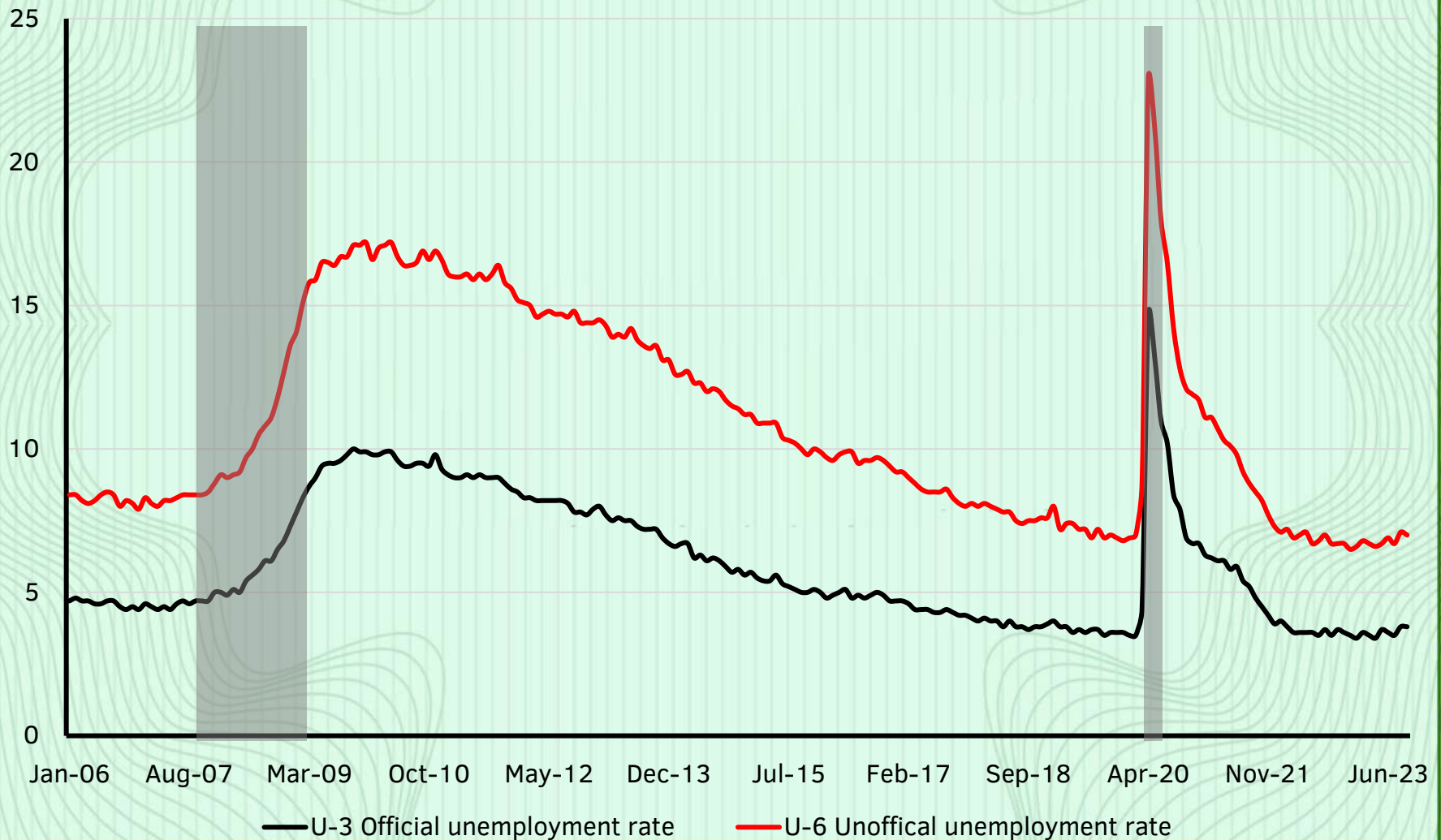
Unemployment by Education



Unemployment by Race



Unemployment



Types of Unemployment

- ▶ Frictional
 - ▶ In between jobs
- ▶ Structural
 - ▶ Obsolete job
- ▶ Cyclical
 - ▶ Recession
 - ▶ Bad Economy
- ▶ Natural rate (Full employment)
 - ▶ Frictional + Structural

What it means when

- People get jobs.

$$\text{Unemploy Rate} = \frac{U}{LF} = \frac{U \downarrow}{U \downarrow + E \uparrow} = \downarrow$$

- Students get jobs.

$$\text{Unemploy Rate} = \frac{U}{LF} = \frac{U}{U + E \uparrow} = \downarrow$$

- People stop looking for jobs.

$$\text{Unemploy Rate} = \frac{U}{LF} = \frac{U \downarrow}{U \downarrow + E} = \emptyset$$

Example Problem.

In the country of Illustratopia, there are 543 m. employed. The unemployment rate is 7.65%, while the labor force participation rate is 70.6%. How many are in the working age population, unemployed, and the labor force?

$$\text{Unemployment Rate} = \frac{U}{LF}$$

$$.0765 = \frac{U}{U + 543}$$

$$U + 543 \cdot 0.0765 = U$$

$$0.0765 \cdot U + 41.54 = U$$

$$41.54 = 1U - 0.0765 \cdot U$$

$$\frac{41.54}{0.9235} = U$$

$$U = 44.98$$

$$LF = 543 + 44.98 = 584.98$$

$$\text{LFPartipation rate} = \frac{LF}{W_{POP}}$$

$$70.6\% = \frac{584.98}{W_{POP}}$$

$$W_{POP} = \frac{584.98}{70.6\%}$$

$$W_{POP} = 828.58$$

Problems with unemployment

- ▶ Discouraged workers are still unemployed.
- ▶ Students are weirdly classified.
- ▶ Those underemployed are not considered.
 - ▶ Underemployed being working a part time job when you want a full time one.

Jack lost his job 6 months ago, and he's been actively looking for a job, he is classified as

- A) unemployed
- B) out of labor force
- C) a discouraged worker

Ruby is a college student, she lost her job 3 weeks ago, but she's been actively looking for a job, she's is classified as

- A) unemployed
- B) out of labor force
- C) a discouraged worker

Another way?

- ▶ The establishment survey
 - ▶ Asks business not people.
- ▶ Job creations through vacancy postings.
- ▶ Job destructions through firing, layoffs, etc.
- ▶ Will indicate problems before the unemployment increases.
- ▶ Is often used for corrections to the unemployment rate.