



UNEMPLOYMENT

Overview of Lecture 4

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Unemployment:

- Definitions of basic terminology
- Model of natural rate of unemployment
- Types of unemployment
- Patterns of unemployment
- Full x natural rate of unemployment

Unemployment

Basic terminology

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- Most important resource in economy = willing workers
- **Unemployment rate** = % of the people who WANT to work but DO NOT HAVE the job
- Source = **Labor Force Survey**: e.g. CR
 - ▣ Sample of 59 000 respondents, age 15+
 - ▣ **Employed**: min 1 hours of reference week working for some form of remuneration
 - ▣ **Unemployed**: everybody aged 15+ who
 1. Is not employed
 2. Is ready to work
 3. Is looking for a job

Unemployment

Basic terminology II + Czech Republic (3Q if 2009)

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- **Labor force** =
of employed + # of unemployed
4 921 700 + 387 000
- **Unemployment rate** = percentage of unemployed out of labor force
4.3% (men – 4.4%, women 4.2%)
- **Labor force participation rate** = percentage of labor force out of adult population (15+)
58.9% (men – 68.5%, women – 49.7%)

Unemployment

Labor force

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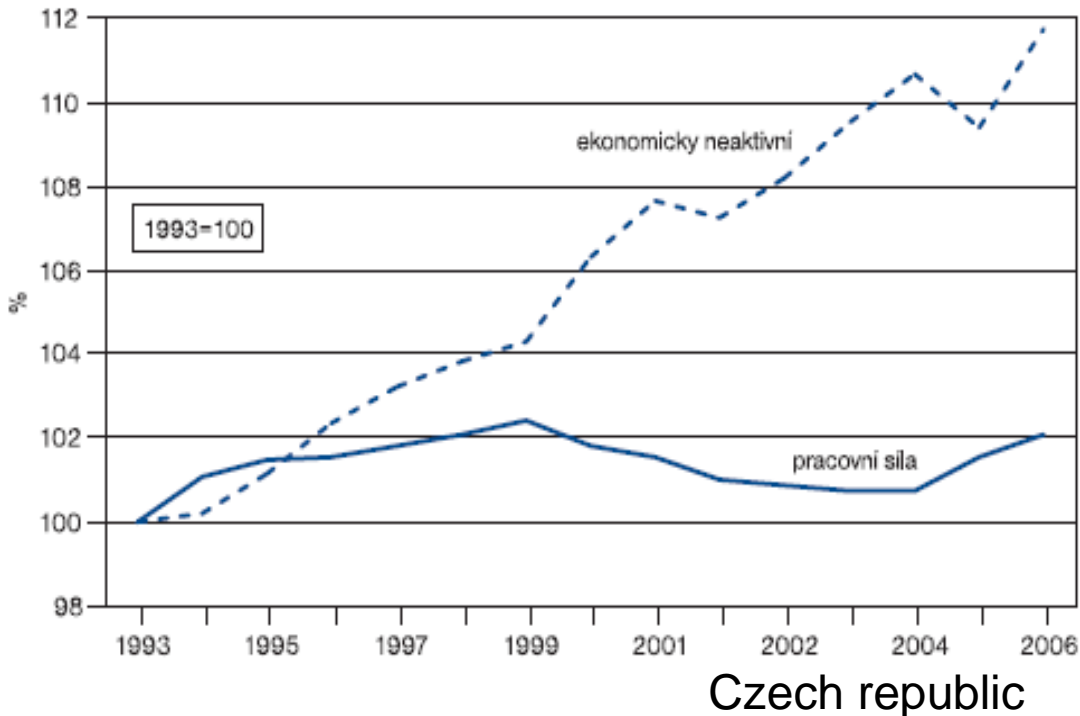
- Who is out of labor force?
 - ▣ Under age 15
 - ▣ Retired
 - ▣ Homemakers
 - ▣ Students
 - ▣ Other (maternity leave)
- Discouraged workers: not seeking employment, but would accept a job =>not in statistics [0.2% of population]
- Underemployment: people employed only part time OR employed at jobs below their skills
- Phantom unemployed: people who only report seeking job
 - ▣ Motivated by public policies - unemployment benefits

Unemployment

Labor force II – movements in and out

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- One third of unemployed have just entered labor force (youth)
- Half of all unemployment spells end in the withdrawal from the labor market
- Demographic shift – ageing



Participation Rates (age 16 and older)		
Year	Men	Women
1950	86.4	33.9
1960	83.3	37.7
1970	79.7	43.3
1980	77.4	51.5
1990	76.4	57.5
2000	74.7	60.0
2006	73.5	59.4

USA

Unemployment

Interpretation issues

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Suppose

- ❑ the population increases by 1%
- ❑ the labor force increases by 3%
- ❑ the number of unemployed persons increases by 2%

Compute the percentage changes in

the labor force participation rate: **2%**

the unemployment rate: **-1%**

Unemployment

Okun's law

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- ❑ Unemployed workers do not produce any output – lost production possibilities
- ❑ One would expect a **negative relationship** between unemployment and real GDP.
- ❑ Empirically observed as **Okun's law**:
$$\% \Delta \text{ in real GDP} = -2 * \Delta \text{ in unemployment rate}$$

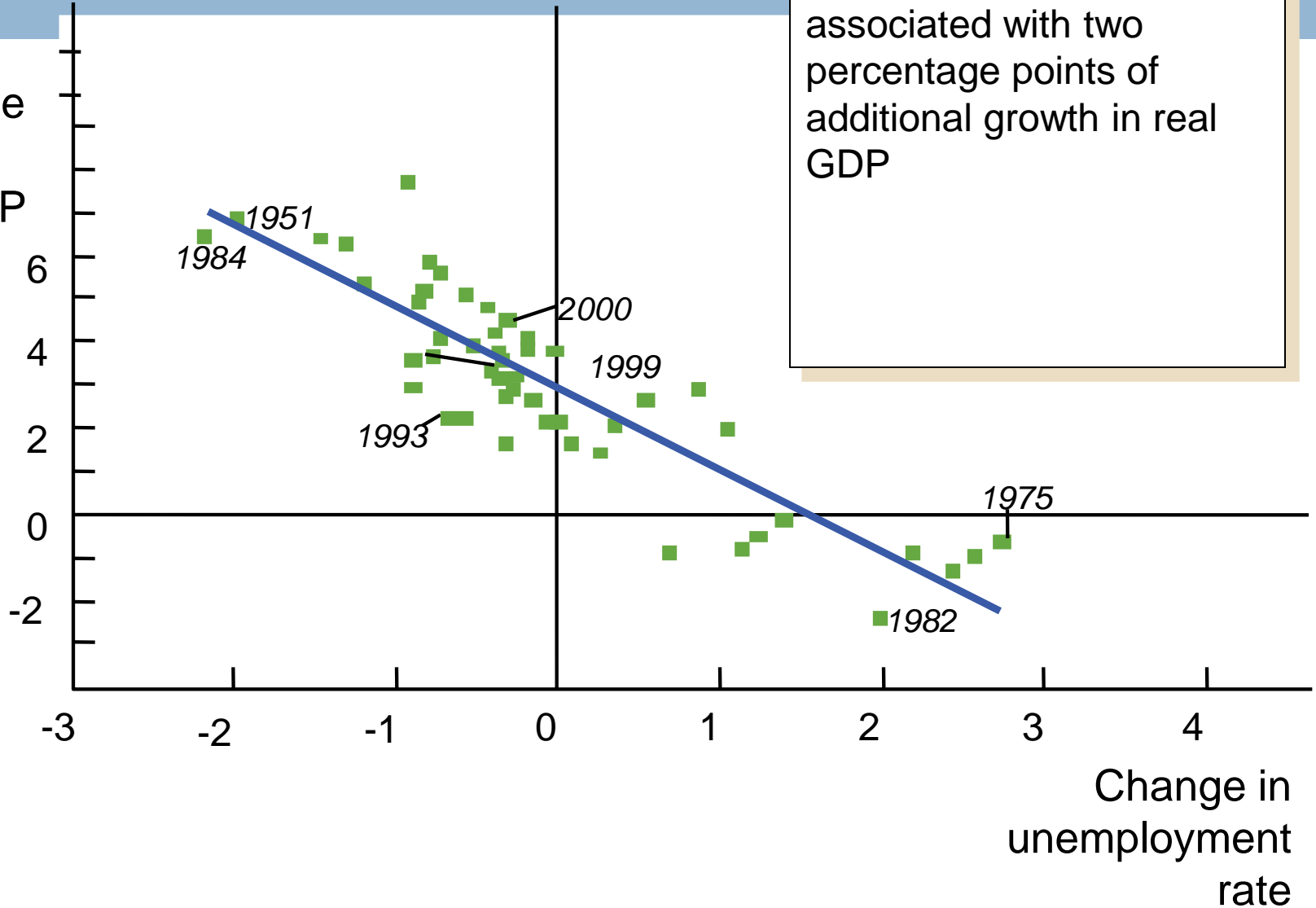
Unemployment

Okun's law II

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Okun's Law states that a one-percent decrease in unemployment is associated with two percentage points of additional growth in real GDP

Percentage change in real GDP



Unemployment

Macro issue

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Unemployment – existence of people who are not working but who would work in jobs like those held by individuals similar to them at the same wages

▣ Macro issue that affects people most directly and severely

- Lost income
- Lost experience / skills / confidence

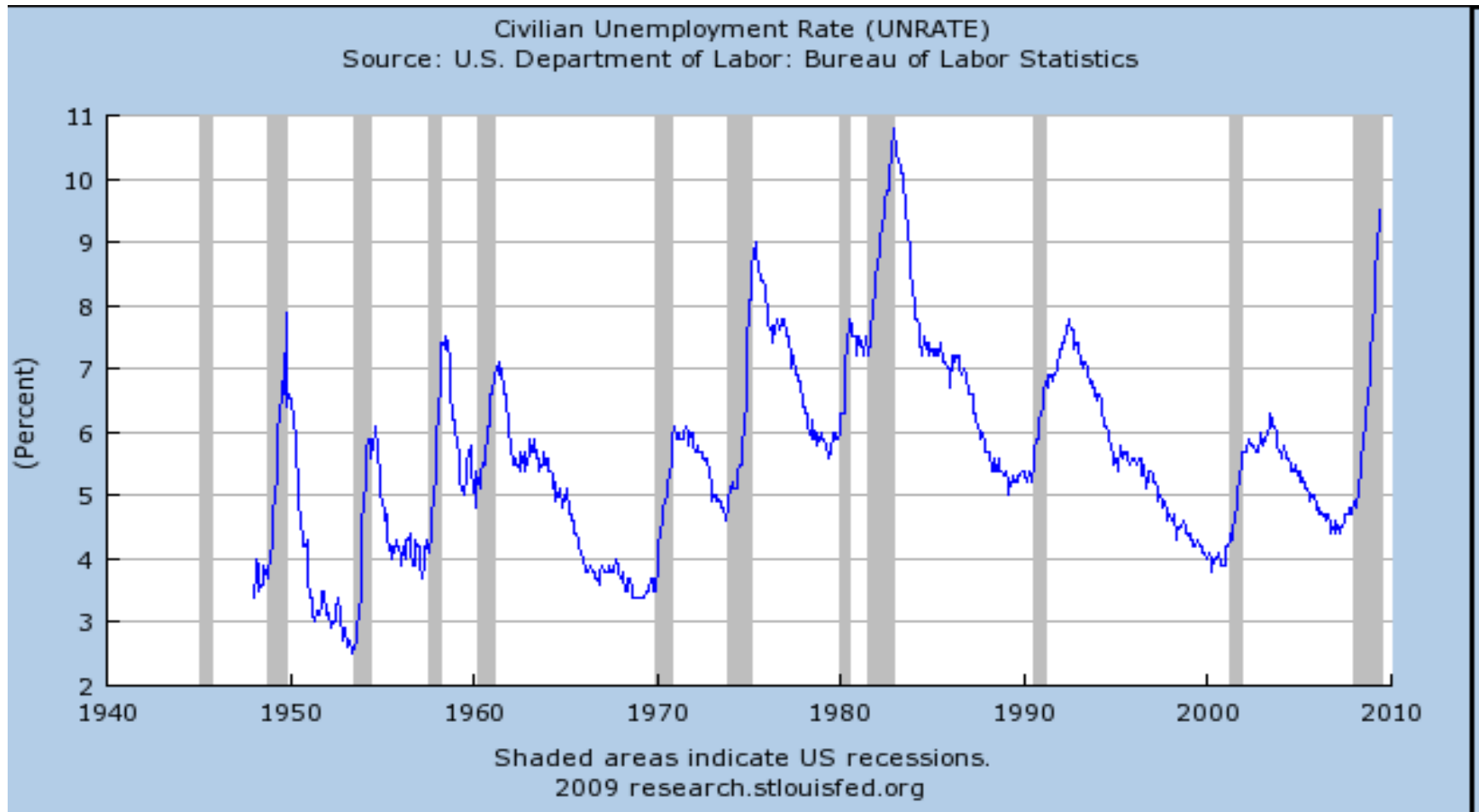
▣ Target of many economic policies

- Activation programs
- Unemployment benefits
- Minimum wages

Unemployment

USA

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Unemployment

Czech Republic

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Unemployment

Natural rate of unemployment

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- Q: Is the existence of nonzero average unemployment over time a market failure? What are its causes and consequences? 2 positions:
- Unemployment as natural implication of frictions in the process of matching workers and jobs
 - ▣ No problem, natural situation
 - Unemployment as result of market imperfections in the economy – market not clearing at prevailing wage
 - ▣ Waste of resources

Unemployment

Model of natural rate of unemployment

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Notation:

L = # of workers in labor force

E = # of employed workers

U = # of unemployed

U/L = unemployment rate

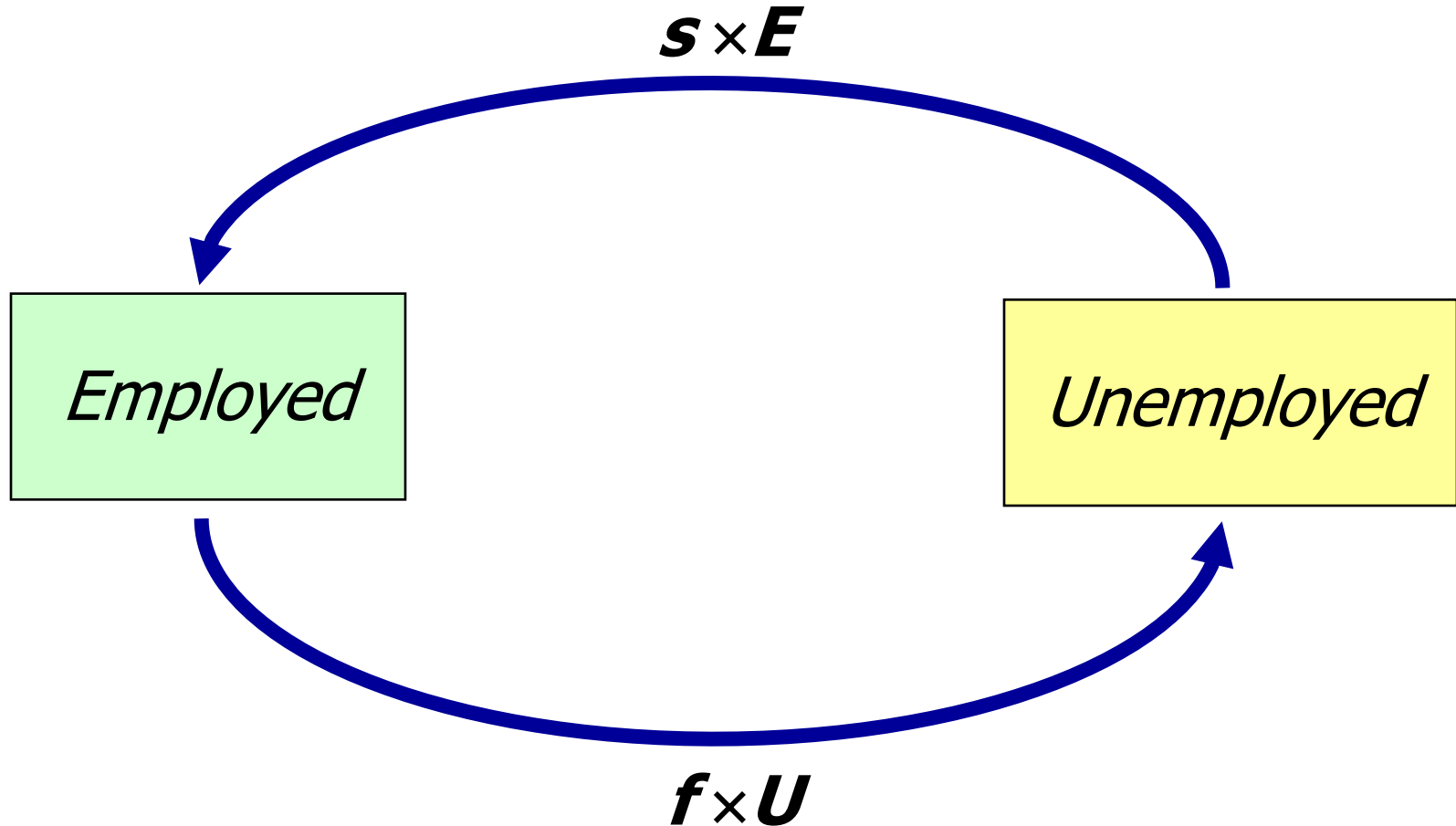
Assumptions:

- L is exogenously fixed (short period)
- s = fraction of employed workers that become separated from their jobs
- f = fraction of unemployed workers that find jobs

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Transitions between employed and unemployed

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Unemployment

Steady state – natural rate of unemployment

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$$\begin{aligned}f \times U &= s \times E \\ &= s \times (L - U) \\ &= s \times L - s \times U\end{aligned}$$

Solve for U/L :

$$(f + s) \times U = s \times L$$

SO,

$$\frac{U}{L} = \frac{s}{s + f}$$

Unemployment

Causes

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- If job finding were instantaneous ($f = 1$), then all spells of unemployment would be brief, and the natural rate would be near zero.
- There are various reasons why $f < 1$
 1. Job search – frictional unemployment
 2. Sectoral shifts – structural unemployment
 3. Wage rigidity – “classical” unemployment
 4. Seasonality – seasonal unemployment
 5. Lacking AD – cyclical unemployment

Unemployment

1 + 2. Job search and Sectoral shifts

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1. **Idea** = it takes time to match workers and jobs, due to
 - ▣ Heterogeneity among workers (skills) and jobs (wages)
 - ▣ Asymmetry of information
 - ▣ Low geographical mobility; limited retraining⇒ Outcome = **frictional unemployment**

2. **Idea** = composition of demand among industries or regions is changing; and it takes time for workers to change sectors (mismatch of skills)

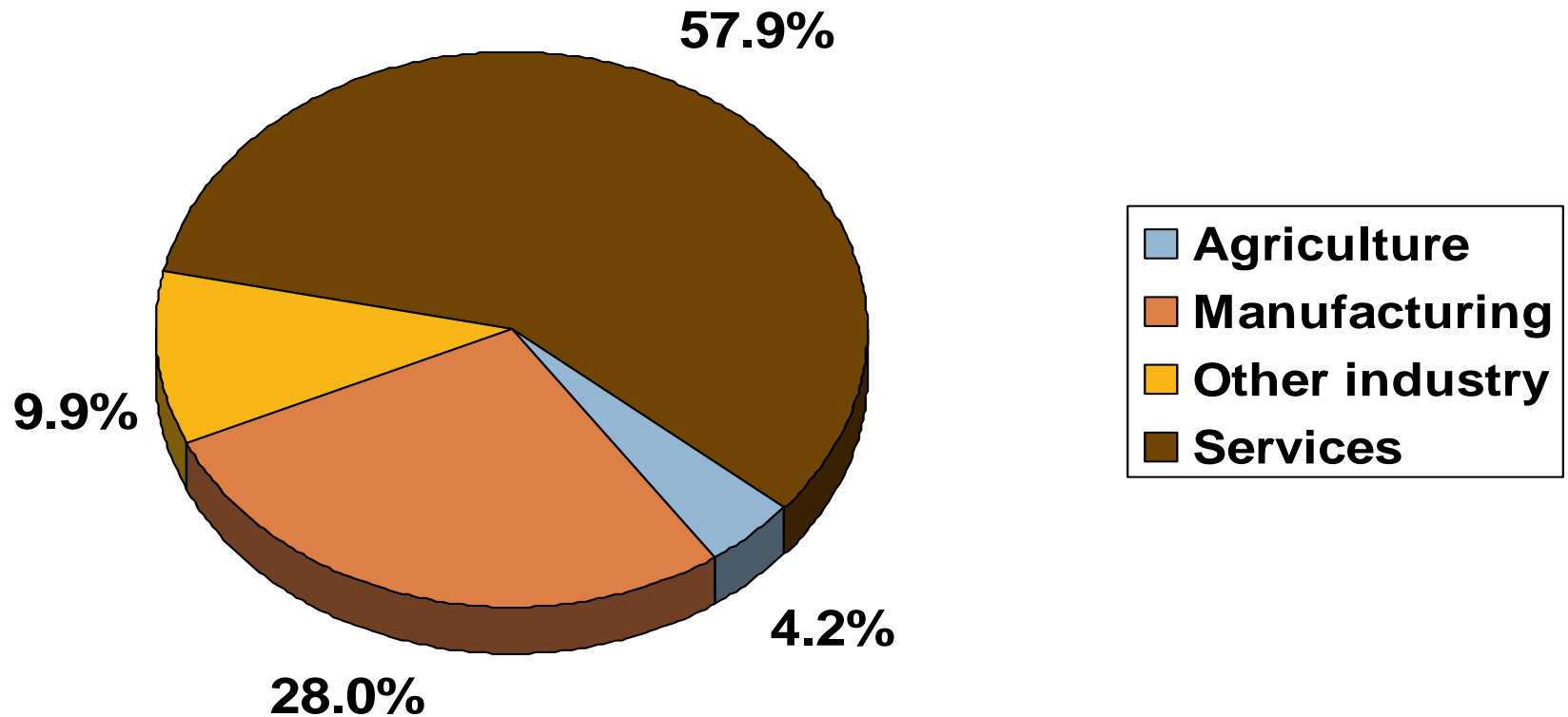
Ex: trade patterns, computer revolution

- ⇒ Outcome = **structural unemployment**

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Sectoral shift – industry shares, USA 1960

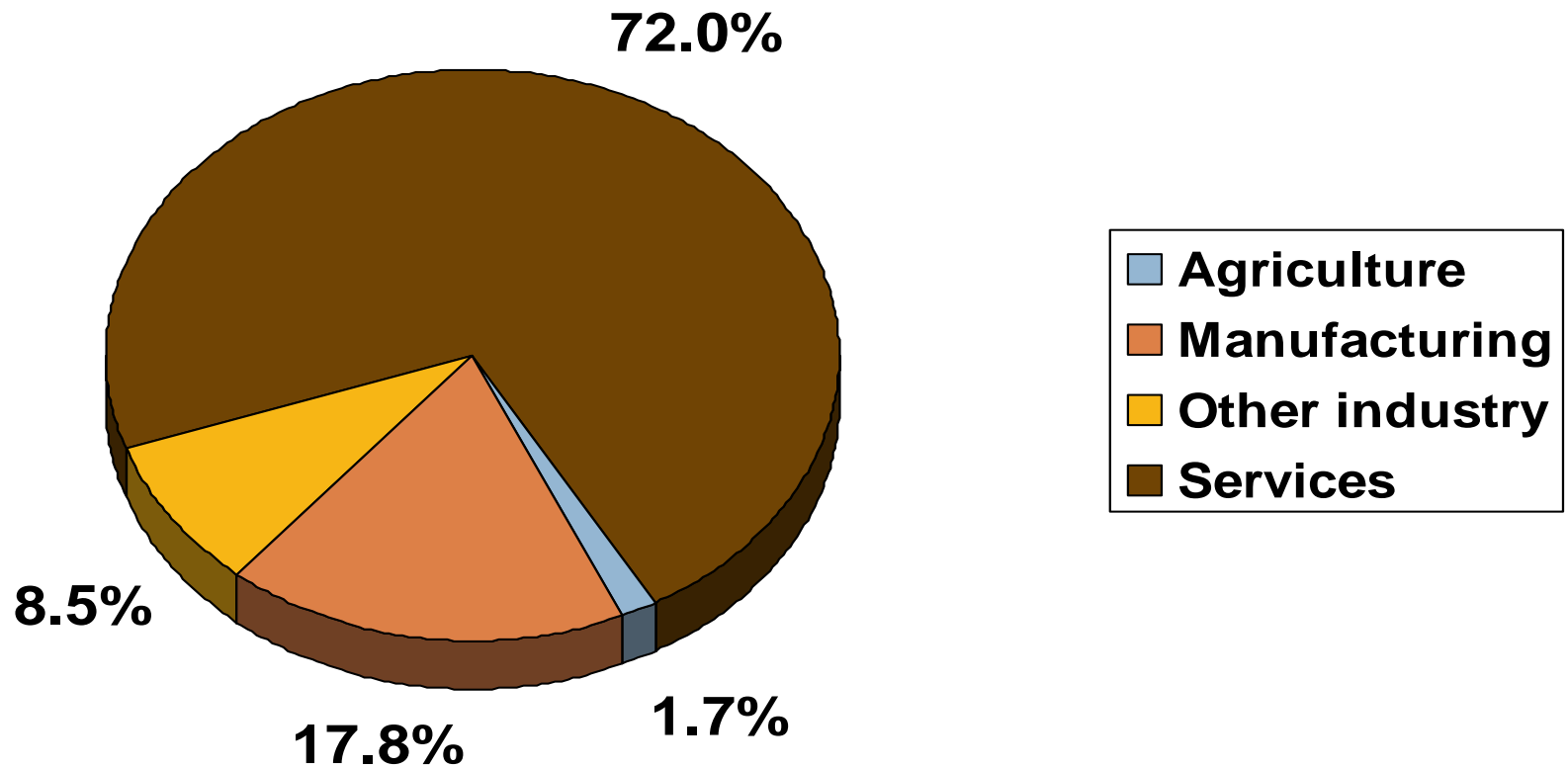
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Unemployment

Sectoral shift – industry shares, USA 1997

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Frictional unemployment

Public policies

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- Labor offices:
 - ▣ Dissemination of information
 - ▣ Retraining programs: CR 2008
 - 43 700 people, 65% women
 - Average age = 38 years
 - Educational background: 16% primary, 35% vocational, 26% completed secondary
 - Length of unemployment: 16 months (60% under 6)

Frictional unemployment

Unemployment benefits

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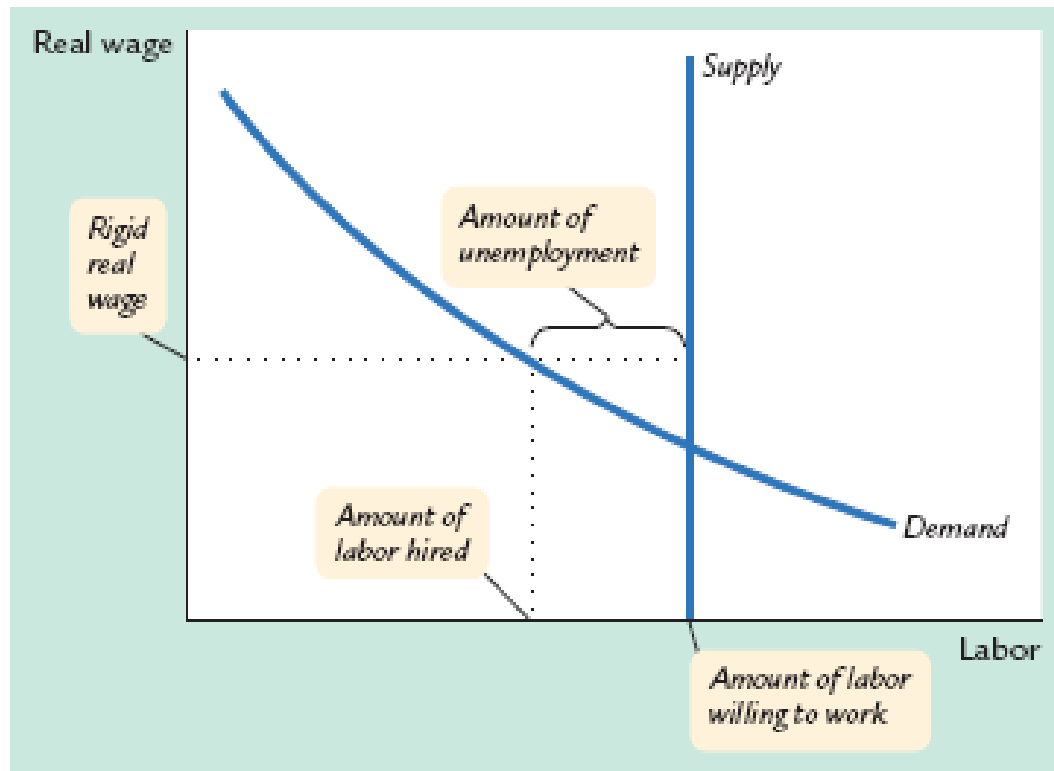
- Positive impact: alleviates economic impact of unemployment
- Negative impact: decreases the time pressure to find a job => longer search => higher frictional unemployment
- Czech republic (2009)
 - Eligibility: employed min 12 months during previous 3 years, actively searching
 - Under 50 years – 5 months; 50-55 years – 8 months; more than 55 years – 11 months
 - 2 months – 65% of net avg. wage in previous job, next 2 months – 50%, 45% afterwards
 - Maximum – 0.58 of avg. wage in economy – 13,307 CZK

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3. Real wage rigidity

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Idea: failure of wages to adjust and balance labor demand and supply – real wage is above the market clearing level



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3. Real wage rigidity - causes

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□ 1. Minimum wage laws:

law prevents firm to cut wage under certain level

- Affects labor decision of unskilled workers – very sensitive subgroup
- Negative – decreases demand for unskilled labor
- Positive – guaranteed minimum income

Unemployment

3. Real wage rigidity - causes

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- 2. Unions and collective bargaining:
 - Unionization increases the bargaining power of workers – higher wages + lower employment + low job separation
 - Different interests and strategies of insiders and outsiders
 - Centralization of bargaining + role of gvt

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3. Real wage rigidity - causes

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□ 3. Efficiency wages:

there might be benefits to firm to pay a higher wage

- Reduction of labor turnover and lowering the likelihood of union emergence
- Avoiding **adverse selection** = self-selection based on the opportunity wage
- Avoiding **moral hazard** = shirking when employer cannot perfectly monitor my effort

Unemployment

4. Seasonal unemployment

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- Unemployment due to **seasonal changes** in employment or labor supply
 - ▣ Ex.1: peak of unemployment rates in February (standstill of construction and farming) and June (students)
 - ▣ Ex.2: unemployment rate in Croatia: summer x winter

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5. Cyclical unemployment

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- Unemployment attributable to an **inadequate level of aggregate demand**
 - ▣ Ex.: Great Depression
 - ▣ Economy must grow at the same rate as labor force

Unemployment

Patterns: Duration of unemployment

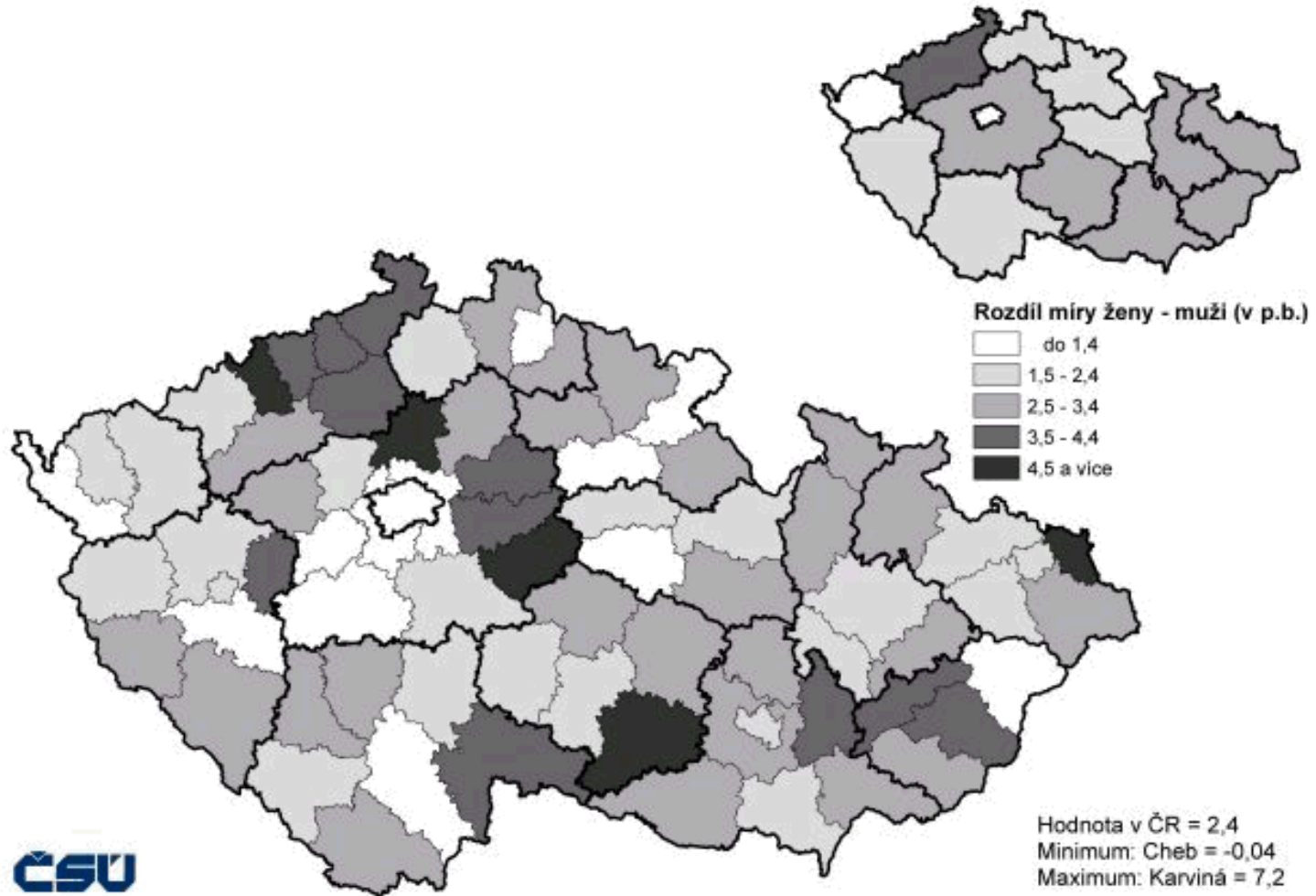
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- When person becomes unemployed, is he spell of unemployment likely to be **short** (i.e. frictional and partly unavoidable) or **long**?
 - ▣ Average duration of unemployment:
 - US – 3.9, EU – 14.8, CR – 22.7 months
 - ▣ Share of workers with unemployment spell shorter than 1 month
 - US – 36%, EU – 8%, CR – 6.1%
 - ▣ Share of workers with unemployment spell longer than 12 months
 - US – 10%, EU – 42%, CR – 53%

Unemployment

Patterns: Gender gap

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Unemployment

Patterns: Youth unemployment

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Youth: 15-24 years

- ▣ Unemployment rates: EU – 15.3% (07'), CR – 11%

Explanations:

- ▣ Alternating between study and employment, career planning => higher rate of job separation + higher frictional unemployment
 - Plausible in US – 45% unemployed <1 month
 - In CR and OECD Europe – 23% and 20% of unemployed youth is registered > 12 months

Full x Natural Employment

Policy goals

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Policy goal = “full employment”

- ▣ Minimizing cyclical and structural unemployment
- ▣ Frictional + seasonal are mostly unavoidable

BUT full employment => **inflationary pressures**

- ▣ Approaching production possibilities => resources are scarce => prices are going up
- ▣ Definition compatible with price stability – around 4-6 %

Natural rate of unemployment – based on structural forces affecting unemployment (not depending on prices)

- ▣ Long term trend to which economy gravitates