# Eco 10350 Principles of Macro

Lecture 5



# Unemployment

- Population includes everybody kids, elderly, etc
- Working-age population snips off kids and elderly
- Labor Force are those actually working (fulltime or parttime) or trying to
- Labor Force equals Employed plus Unemployed
- Various definitions of "trying to" depending on how active
  - Most common is not working, available to work, and actively looking during past 4 weeks
  - Key there is "actively looking" ie sending in applications to jobs
  - There are "discouraged workers" who haven't given applications recently
- Underemployed might be large number

#### Rates

- Labor Force Participation (LFP) Rate is <u>Labor Force</u>
  <u>Working Age Population</u>
- Unemployment Rate (UR) is  $\frac{Unemployed}{Labor Force} = \frac{Unemployed}{Employed+Unemployed}$
- These are often subdivided, eg LFP & UR for teenagers 16-19 or people aged 60-65 or men/women or by race/ethnicity

### Flows in Labor Market



# Measures of Unemployment

- Most measures ask people "are you working" then details
- U3, U4, U5, U6, ... collected from monthly "Current Population Survey"
- Establishment Payroll Survey asks firms how many people are working there
- Slightly different answers because self-employed, multiple jobs (moonlighting), etc

- U1– people unemployed 15+ weeks
- U2- people who just lost a job or finished a temp job
- U<sub>3</sub> official rate

- U<sub>4</sub> U<sub>3</sub> plus discouraged workers (bad job market so don't search)
- U5 U4 plus marginally attached (looked in last 12 mo.)
- U6 U5 plus those working PT for economic reasons (want FT but settle for PT)

# UR by Marital status, race, ethnicity

Unemployment Rates by Marital status, race,	М	en	Women		
Hispanic or Latino ethnicity	2017	2018	2017	2018	
Total, 16 years and over	4.4	3.9	4.3	3.8	
Married, spouse present	2.4	2.0	2.7	2.4	
Widowed, divorced, or separated	4.6	4.5	4.8	4.0	
Never married	7.7	6.9	6.5	5.8	
White, 16 years and over	3.8	3.5	3.8	3.4	
Black or African American, 16 years and over	8.1	7.0	6.9	6.0	
Asian, 16 years and over	3.4	3.0	3.4	3.0	
Hispanic or Latino ethnicity, 16 years and over	4.7	4.3	5.7	5.1	

# UR over time



#### UR over time

- UR changes significantly over time
- UR goes over 10% in recessions but never falls below 3-ish%
  - (economists spend lots of time fining "3-ish")
- UR has negative correlation with macro indicators (so UR up when GDP down)
- But UR lags macro indicators particularly as economy recovers, hiring can be slow
- No trend over time even as population grows
  - More people = more jobs

#### International comparisons



UR for selected countries

# Types of Unemployment

#### Frictional

- Unemployment can never be zero! Lots of churn so people moving around, entering
- Structural
  - people with wrong skills in wrong places, few prospects
- Cyclical
  - When GDP falls, unemployment rises
  - Why?

## Why doesn't labor market work like simple S&D?

- In ordinary supply and demand graph, a reduction in demand would mean lower wages (but not necessarily unemployment). Why isn't labor market simple?
- Wages are sticky downward (not upward though)
  - Unions; insider/outsider
  - Minimum wages
  - Implicit contracts (part of compensation is insurance)
  - Efficiency wages higher-paid workers are more productive (motivated)
- But lots of important markets don't work like simple S&D banks stop loans they don't just reprice; insurance etc.

### Unemployment in Long Run

- "Natural" rate of unemployment
- Depends on Frictional Unemployment (how much turnover or churn)
  - Which depends on pace of technological innovation
  - Depends on amount of structural unemployment
  - Structure of labor force (younger workers more likely to move around)
- When economy is at "natural" rate of unemployment, it is said to be at "full employment" & real GDP = potential real GDP

#### Natural Rate of Unemployment may vary



- In US, Natural Rate has, by best estimates, fallen in past 25 years, somewhere 4.5%-5.5%
- In much of Europe, Natural Rate is much higher

### Other measures of labor market

https://equitablegrowth.org/jolts-day-graphs-december-2018-report-edition/

# Inflation

- Inflation affects all prices including wages and incomes
  - Although not equally! If it were completely even then almost nothing would change
  - But it's not equal effect, never is...
- CPI Consumer Price Index calculates changing cost of a basket of goods
- Set a particular year as index = 100 and other years are relative to that
- CPI is produced by BLS just like the Unemployment Rate

#### Does CPI correctly measure the real inflation rate?

- Not perfect, never in this world can we ever have perfection...
- Substitution bias: people don't actually buy a fixed basket if chicken is too expensive then people might buy fish. Depends on demand elasticity (remember that?)
- Quality bias: again people don't buy a fixed basket. A new top-of-the-line phone costs more than last year but also has lots more features; last year's top-of-the-line phone model is now cheaper this year. New products are even worse! Medicine, healthcare, technology – tough to value!
- Biggest component of CPI is Housing, much of that is implicit homeowner's cost
- Billion Prices Project collects lots of (not a billion; that's poetic license) prices but that tracks pretty closely
- There are inflation truthers who believe that inflation stats are all lies...

# Other measures of price changes

- PPI is Producer Price Index, prices paid for inputs of GDP (presumably will lead changes in CPI)
- Employment Cost Index shows changing cost of workers
- GDP Deflator
- Personal Consumption Deflator (like GDP deflator but just for C)

#### **US** inflation



US Inflation & Ex Food/Energy

CPIAUCSL\_PC1 CPILFESL\_PC1

#### Inflation around the world



The Hanke	-Krus Wor	ld Hyperi	nflation Table	Congo (Zaire)	Nov 1003	250%	16.8 dave				
(2013, Amended 10/2017)			Russia	Jan. 1992	245%	17.0 days					
	Month with	Highest	Time	Bulgaria	Feb. 1997	242%	17.1 days				
	Highest	Monthly	Required for	Moldova	Jan. 1992	240%	17.2 days				
Location	Inflation	Inflation	Prices to	Venezuela	Nov. 2016	219%	17.9 days				
	Rate	Rate	Double	Russia / USSR	Feb. 1924	212%	18.5 days				
Hungant	Inl 1046	1.10 - 101602	15.0 hours	Georgia	Sep. 1994	211%	18.6 days				
Hungary	Mid-Nov	4.19 x 10 %	15.0 nouis	Tajikistan	Jan. 1992	201%	19.1 days				
Zimbabwe	2008	7.96 x 10 <sup>10</sup> %	24.7 hours	Georgia	Mar. 1992	198%	19.3 days				
Yugoslavia	Jan. 1994	313000000%	1.41 days	Argentina	Jul. 1989	197%	19.4 days				
Republika				Zimbabwe	Oct. 2017	185%	20.1 days				
Srpska	Jan. 1994	297000000%	1.41 days	Bolivia	Feb. 1985	183%	20.3 days				
Germany	Oct. 1923	29500%	3.70 days	Belarus	Jan. 1992	159%	22.2 days				
0	0.1.1044	13800%	4.27 days	Kyrgyzstan	Jan. 1992	157%	22.3 days				
Greece	Oct. 1944			Kazakhstan	Jan. 1992	141%	24.0 days	Poland	Jan. 1990	77.30%	36.8 days
01	1	5070%	5.34 days	Austria	Aug. 1922	129%	25.5 days	Armenia	Jan. 1992	73.10%	38.4 days
China	China Apr. 1949			Bulgaria	Feb. 1991	123%	26.3 days	Tajikistan	Nov. 1995	65.20%	42.0 days
Free City of	Free City of	24409/	6.52 days	Uzbeki stan	Jan. 1992	118%	27.0 days	Latvia	Jan. 1992	64.40%	42.4 days
Danzig	3cp-25	244076		Azerbaijan	Jan. 1992	118%	27.0 days	Turkmenistan	Jan. 1996	62.50%	43.4 days
Armenia	Nov. 1993	438%	12.5 days	Congo (Zaire)	Nov. 1991	114%	27.7 days	Phillipines	Jan. 1944	60.00%	44.9 days
Turkmenistan	Nov. 1993	429%	12.7 days	Peru	Sep. 1988	114%	27.7 days	Yugoslavia	Dec. 1989	59.70%	45.1 days
Taiwan	Aug. 1945	399%	13.1 days	Taiwan	Oct. 1948	108%	28.9 days	Germany	Jan. 1920	56.90%	46.8 days
Peru	Aug. 1990	397%	13.1 days	Hungary	Jul. 1923	97.90%	30.9 days	Kazakhstan	Nov. 1993	55.50%	47.8 days
Bosnia and	Bosnia and	n. 1992 322%	14.6 days	Chile	Oct. 1973	87.60%	33.5 days	Litnuania	Jan. 1992	53 40%	48.8 days
Herzegovina	Jun. 1992		14.0 days	Estonia	Jan. 1992	87.20%	33.6 days	Taiwan	Feb 1947	50.80%	49.5 days
France	Mid-Aug 1796	304%	15.1 days	Angola	May-96	84.10%	34.5 days	Talwan	100. 1947	50.0070	51.4 days
2020-00 2020-00				Brazil	Mar. 1990	82.40%	35.1 days	Source: Hanke, Steve H., Hyperinflation in Histor	, and Erik Bostrom	lied Economics of	perinflates, Again: The 58th Episode of
China	Jun. 1945	302%	15.2 days	Democratic				Applied Economics, Glo	bal Health, and th	e Study of Busin	ess Enterprise, 19 Oct. 2018. Web.
Ukraine	Jan. 1992	285%	15.6 days	Republic of	Aug. 1998	78.50%	36.4 days	https://sites.krieger.jhu	.edu/iae/files/2018	8/07/Zimbabwe-	Hyperinflates-Again-Hanke-Bostrom
Poland	Oct. 1923	275%	16.0 days	Congo							
Nicaragua	Mar. 1991	261%	16.4 days								

# Costs & Benefits of Inflation

- Costs:
  - People hate and fear inflation Bob Shiller did surveys
  - wage inflation often lags price inflation so people's real wages fall
  - Social Security has COLA but that's a year later; other contracts maybe similar
  - Difficult to plan ahead or agree to prices in advance (all prices including interest rates)
  - Real interest rates are different from nominal interest rates; taxes hit nominal interest rates
  - Other prices are fixed in money value (eg alimony, child support, min wage, pensions) and are costly to change
  - Borrowers like inflation since it reduces real rates; lenders dislike lower real rates (Government is big borrower)
- Benefits:
  - Lower real wages can help grease the frictions of the labor market, particularly if predictable
- Why not index? Write contracts for real not nominal amounts?