Elements of Macroeconomics TA Session 4: Midterm Exam1

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Slides on https://github.com/Haruki-Shibuya/TA

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Announcement

- If you have questions about Q3, please look at the rubric and answer keys first.
- If you still have questions after checking it, please visit me during office hours on Mon 10-11am in 601A, Wyman Park Building.

- If you have questions about Q1,2,4, or 5, then please ask your TA according to the following:
  Q2 or Q5: Qingyuan qfang6@jhu.edu
  Q1 or Q4: Shiqi h.q@jhu.edu
- Points specified on the exam sheet and answer keys for Q3 are wrong (they don't add up to 25) so we had to redistribute 25 points to 4 sub-questions.

  The updated distribution is: Q3(a)7pts, Q3(b)7pts, Q3(c)4pts, Q3(d)7pts.

Score stats

Basic statistics:

Count	134 test takers
Mean	65.6
Std. dev.	12.9
Median	68
Max	94

Q5

	2020 (In Millions)	2025 (In Millions)
Total Population	150	160
Working-age population	100	120
Number of adults, neither working, nor looking for work	50	
Number of employed adults	45	48
Number of discouraged workers	1	2
Number of part-time workers	4	5

- Discouraged 1 worker ⊆ Neither-working-nor-looking-for-job 50 adults
- Part-time 4 workers ⊆ Employed 45 adults
- 100 working pop = 45 employed + 5 unemployed + 50 non-labor-force

Q5 (e)

e) ***[2 points]*** What is the labor force participation rate in 2020?

labor force = 50 (million)

labor force participation rate: 50%

- 100 working pop = 45 employed + 5 unemployed + 50 non-labor-force
- Labor force = U+E =50
- Labor force participation rate = LF/Working Pop = 50/100 = 0.5 or 50%

Q5 (f)

f) ***[2 points]*** How many individuals are unemployed in 2020?

Number of individuals unemployed = 50 – 45 = 5 (million)

Q5 (g)

g) ***[3 points]*** What is the U3 unemployment rate in 2020?

U3 unemployment rate = 5 / 50 = 10%

- **U-3 unemployment rate** is the headline/standard official unemployment rate used by the U.S. Bureau of Labor Statistics (BLS). It represents the percentage of the civilian labor force that is unemployed and actively seeking employment.
- U3 = unemployed/LF=5/50=0.1 or 10%

Q5 (h)

h) ***[3 points]*** Suppose the labor force participation rate stays the same in 2025 as in 2020, what is the labor force in 2025?

Labor force in 2025 = 120 * 50% = 60 (million)

- Labor force in 2025 = working pop in 2025 (120 ppl) × 0.5 = 60

Q5 (i)

i) ***[3 points]*** Using the size of the labor force computed in (d) above, calculate the unemployment rate for 2025.

Employment = 48 million. Unemployment = 12 million

Unemployment rate for 2025 = 12/60 = 20%

- Labor force in 2025 = 60
- Unemployment rate in 2025 = U/LF=U/60
- U = LF – E = 60-48 = 12
- Hence 12/60=0.2 or 20%

Q5 (j)

j) ***[3 points]*** What is the U6 unemployment rate in 2025?

U6 Unemployment = 12 + 2 (marginally attached) + 5 (part-time workers) = 19
U6 Unemployment rate = 19/(60+2) = 30.65%

https://www.bls.gov/news.release/empsit.t15.htm

- U6 unemployment: known as the "real" unemployment rate. It includes not only people who are officially unemployed (those actively looking for work) but also:
- 1. **Marginally attached workers**: These are individuals who are not currently looking for work but have looked for a job within the past 12 months and would accept one if it became available.
- 2. **Discouraged workers**: A subset of the marginally attached workers who have given up looking for work because they believe there are no jobs available for them.
- 3. **Part-time workers for economic reasons (involuntary part-time workers)**: People who are working part-time but want and are available for full-time work.