The Simple AP® Macroeconomics Unit 2 Cheat Sheet

2.1 Circular Flow & GDP

Circular Flow

Product market: households buy goods from firms. **Factor market**: firms buy land, labor, capital. **Money** flows 1 way; goods, services & resources flow the opposite way around the loop.

GDP

GDP = market value of all FINAL goods & services produced inside a country in 1 year.

Counted	NOT counted
New final goods	Intermediate goods
Services	Used goods resold
New homes (I)	Stocks, bonds
Govt purchases	Transfer payments
Foreign firm here	US firm abroad

Expenditure Approach

GDP = C + I + G + X_n: consumption + investment + govt purchases + net exports (X − M).

Investment (I) = new capital, new housing & inventory change; NOT buying stocks or bonds.

Value added: add the value created at each stage of production to avoid double counting.

Income approach: GDP also = total income earned (wages + rent + interest + profit).

⚠ Transfer payments (Social Security) are NOT in G; nothing new is produced for them.

✓ Classify by WHO buys it: household → C; firm's new capital → I; govt → G.

2.2 Limitations of GDP

What GDP Misses

Left out	Example
Nonmarket work	Cooking at home
Underground economy	Cash jobs, illegal
Leisure	Shorter work weeks
Environment	Pollution costs
Distribution	Who gets income
Quality changes	Better phones

GDP ≠ well-being: it measures market output, not happiness, health, leisure or equality.

Bad things can raise GDP: disaster cleanup or crime prevention spending adds to GDP.

Better Comparisons

Real GDP per capita = real GDP ÷ population; best simple measure of living standards.

Across countries: compare real GDP per capita, not total GDP; population size matters.

GDP vs. GNP

GDP = made inside the borders (by anyone). **GNP** = made by a nation's citizens (anywhere).

Ex: a Toyota plant in Kentucky counts in US GDP but in Japan's GNP, not US GNP.

Which is NOT in GDP? Look for used goods.

⚠ A used car sale isn't in GDP, but the dealer's commission IS (a new service).

✓ Produced THIS year + a FINAL good bought by its end user → it counts in GDP.

2.3 Unemployment

Measuring It

Labor force = employed + unemployed (16+, actively looking for work & available to work).

Unemployment rate = unemployed ÷ labor force × 100; retirees & students aren't counted.

Ex: 180 employed + 20 unemployed = 200 in the labor force → rate = 20 ÷ 200 = 10%.

Not in labor force: students, retirees & **discouraged workers** who stopped looking.

Types of Unemployment

Type	Cause	Example
Frictional	Job search	New grad looking
Structural	Skills mismatch	Typist → software
Seasonal	Time of year	Ski instructor
Cyclical	Recession	Layoffs in a slump

Natural Rate

Natural rate = frictional + structural (≈ 4–5% in the US); it's the rate when cyclical = 0.

Full employment ≠ 0% unemployment; it means there is no cyclical unemployment at all.

Cyclical = actual rate − natural rate; ex: 7% actual − 5% natural = 2% cyclical unemployment.

Underemployed part-timers count as employed, so the rate understates true joblessness.

⚠ Discouraged workers leaving LOWERS the unemployment rate, though no one found a job.

✓ FRQ: find the labor force (E + U) first, then divide; show the formula, numbers & the %.

2.4 Price Indices & Inflation

Consumer Price Index (CPI)

CPI = (basket cost this year ÷ basket cost in base year) × 100; the base year always = 100.

Fixed basket: CPI tracks the SAME goods each year, so only prices change, not quantities.

Year	Basket cost	CPI
2020 (base)	$200	100
2021	$210	105
2022	$231	115.5

Inflation rate = $(CPI_{new} - CPI_{old}) \div CPI_{old} \times 100$ → (115.5 − 105) ÷ 105 = 10% that year.

Other Price Measures

GDP deflator = (nominal GDP ÷ real GDP) × 100; it covers ALL goods in GDP, not 1 basket.

Core inflation: leaves out volatile food & energy prices to show the underlying trend.

Key Terms

Inflation = rising general price level; each dollar buys less (purchasing power falls).

Deflation = falling prices. **Disinflation** = inflation slowing (5% → 2%) but still positive.

CPI biases (substitution, new goods, quality gains) make the CPI overstate inflation a bit.

⚠ Disinflation ≠ deflation: prices still rise under disinflation, just more slowly than before.

✓ A CPI of 120 means prices are 20% higher than in the base year, when the CPI was 100.

2.5 Costs of Inflation

Winners & Losers (Unexpected)

Hurt by inflation	Helped by inflation
Lenders (creditors)	Borrowers (debtors)
Savers	Holders of fixed-rate debt
Fixed-income earners	Those w/ rising wages
Holders of cash	Owners of real assets

Why: borrowers repay w/ dollars worth less than the ones they borrowed; lenders lose value.

Anticipated inflation does less harm b/c lenders build it into the interest rates they charge.

Real vs. Nominal Interest

Real interest rate = nominal rate − inflation. Ex: 7% loan − 3% inflation = 4% real return.

Unexpected inflation ↑ → real interest rate ↓ → borrowers gain & lenders lose from the loan.

Other Costs

Shoe-leather costs: effort to avoid holding cash.

Menu costs: the cost of changing prices.

Real income: wages ↑ 3% but prices ↑ 5% → real wages FALL by about 2%, so you're worse off.

Deflation reverses it: debts get heavier in real terms, so borrowers lose & lenders gain.

Hyperinflation destroys savings & trust in money.

⚠ Fixed-rate borrowers WIN from surprise inflation; lenders & savers LOSE.

✓ % change real ≈ % change nominal − the inflation rate; use it for wage & interest Qs.

2.6 Real vs. Nominal GDP

Definitions

Nominal GDP = output × current prices; rises w/ more output OR w/ higher prices (or both).

Real GDP = output × base-year prices; changes only when actual output changes.

Formulas

Find	Formula
Real GDP	Nominal ÷ deflator × 100
Deflator	Nominal ÷ real × 100
Nominal GDP	Real × deflator ÷ 100
Growth rate	(new − old) ÷ old × 100

Worked Example

2020 (base): 10 pizzas at $10 = $100. **2021**: 12 pizzas at $12 → nominal = $144.

2021 real GDP = 12 × $10 = $120. **Deflator** = 144 ÷ 120 × 100 = 120 → prices ↑ 20%.

Real growth = (120 − 100) ÷ 100 = 20% more output, while nominal rose 44%.

Ex: nominal GDP $500B, deflator 125 → real GDP = 500 ÷ 125 × 100 = $400B (prices up 25%).

Reading Data

Base year: nominal = real & the deflator = 100.

Nominal ↑ but real flat → all the growth came from higher prices, not more output.

⚠ Compare output across years w/ real GDP; nominal GDP can rise in a recession.

✓ Deflator > 100 → prices are above the base year → real GDP < nominal GDP that year.

2.7 The Business Cycle

Phases

Phase	Real GDP	Unemployment
Expansion	Rising	Falling
Peak	At max	Low, < natural
Contraction	Falling	Rising
Trough	At min	High, > natural

Recession ≈ 2+ quarters of falling real GDP; a long, deep one is a **depression**.

Long-run trend: real GDP still grows over time, despite the ups & downs of cycles.

Output Gaps

Potential output: real GDP when unemployment = the natural rate (cyclical unemployment = 0).

Recessionary gap: actual < potential → cyclical unemployment, prices rise slowly.

Inflationary gap: actual > potential → unemployment < natural rate, prices rising.

Output & jobs move together: when real GDP falls below potential, unemployment rises.

Graph It

Business cycle graph: y = real GDP, x = time; a wave around a rising trend line.

Causes: shifts in total spending or supply shocks.

⚠ At the peak, unemployment can dip BELOW the natural rate; that's an inflationary gap.

✓ Match each phase to what happens to real GDP, unemployment & the price level.

Unit 2 on the Exam

Must-Know Formulas

Measure	Formula
GDP	C + I + G + X_n
Unemp. rate	U ÷ LF × 100
CPI	Basket now ÷ base × 100
Inflation	ΔCPI ÷ old CPI × 100
Real GDP	Nominal ÷ deflator × 100
Real interest	Nominal − inflation

Common MCQ Traps

GDP inclusion: used goods, stocks, transfers & intermediate goods are NOT counted.

Unemployment type: tech replaces a worker = structural; recession layoff = cyclical.

FRQ Moves

Show work: write the formula, plug in the numbers & give the answer w/ units or a %.

Explain direction w/ arrows: "Surprise inflation ↑ → real interest rate ↓ → borrowers gain."

Exam Weight

Unit 2 = 12–17% of the AP Macro exam: 60 MCQs (70 min) + 3 FRQs (60 min); MC = 66%.

CPI vs. deflator: CPI = a fixed consumer basket; the deflator = every good & service in GDP.

⚠ Investment = NEW physical capital (machines, buildings), never stocks or bonds.

✓ Say "real GDP" or "nominal GDP," not just "GDP," whenever the difference matters.