BRETTONOMICS · STUDY GUIDE · UNIT 4 TOPIC 2

Economic Indicators & Budget Stances

Reading indicators, the Phillips curve, and evaluating past Australian budgets

How to use this guide

Information in this guide is colour-coded and labelled. Each coloured box carries a word label as well as a colour, so you can use it whether or not you distinguish the colours easily.

KEY DEFINITION	The precise meaning of a syllabus term. Learn the wording.
AUSTRALIAN CONTEXT	Real Australian evidence, data or events you can quote as examples.
WORKED EXAMPLE	A calculation or model worked through step by step.
COMMON MISTAKE	An error that commonly costs marks — check yourself against it.
EXAM TIP	How to turn the knowledge into marks in an exam response.
BRETTONOMICS INTERACTIVE	A matching interactive tool on brettonomics.com.

SECTION 1 Types of economic indicator

1.1 Leading Indicators

- Indicators that change BEFORE the overall economy changes
- Used to forecast future economic conditions (next 6–12 months)
- Examples: Consumer confidence, building permits, share prices, credit growth
- Rationale: These reflect expectations and decisions that precede actual economic activity
- Interpretation: Rising leading indicators suggest expansion ahead; falling suggest contraction

1.2 Lagging Indicators

- Indicators that change AFTER the overall economy has already changed
- Used to confirm that a trend is established (historical verification)
- Examples: Unemployment rate, inflation rate, GDP (measured in arrears), wage growth
- Rationale: Takes time for employment, prices, output to reflect economic changes
- Interpretation: Rising lagging indicators confirm contraction is underway; falling confirm expansion

1.3 Coincident Indicators

- Indicators that change AT THE SAME TIME as the overall economy
- Used to assess current economic position in real time
- Examples: Industrial production, retail sales, business investment, aggregate demand
- Rationale: These directly measure current economic activity
- Interpretation: Rising = expansion; falling = contraction; stable = equilibrium

1.4 Why Multiple Indicators Matter

- No single indicator tells the whole story (each has strengths and weaknesses)
- Leading indicators can be volatile (false signals possible)
- Lagging indicators confirm trends but arrive too late for policy action
- Coincident indicators provide real-time snapshot but limited forward visibility Best practice: Use all three types together for comprehensive assessment

KEY DEFINITION

The three indicator types

Leading. Turns before the economy — confidence, building approvals, share prices.

Coincident. Turns with the economy — real GDP, retail sales.

Lagging. Turns after the economy — unemployment, inflation.

EXAM TIP

Never judge the cycle on one series. A strong answer triangulates: a leading indicator for direction, a coincident indicator for position, and a lagging indicator for confirmation.

SECTION 2 How to calculate economic indicators

2.1 Real Economic Growth Rate

- Formula: ((Real GDP Year 2 − Real GDP Year 1) ÷ Real GDP Year 1) × 100
- Example: Real GDP 2023 = $2.05t, Real GDP 2024 = $2.07t
- Calculation: ((2.07 − 2.05) ÷ 2.05) × 100 = 0.98% growth
- Key point: Uses inflation-adjusted figures (not nominal)
- Interpretation: Positive = expansion, negative = contraction, >2% = healthy trend growth

2.2 Inflation Rate

- Formula: ((CPI Current Year − CPI Previous Year) ÷ CPI Previous Year) × 100
- Example: CPI 2024 = 115, CPI 2023 = 110
- Calculation: ((115 − 110) ÷ 110) × 100 = 4.55% inflation
- Interpretation: RBA target 2–3%; above = problematic; below = deflation risk
- Note: Also look at headline vs. underlying inflation for detail

2.3 Unemployment Rate

- Formula: (Number of Unemployed ÷ Labour Force) × 100
- Labour Force = Employed + Unemployed (actively seeking)
- Example: Unemployed 0.9m, Labour Force 13.1m → U = (0.9 ÷ 13.1) × 100 = 6.87%
- Interpretation: Below NAIRU (4–4.5%) = tight market; above = slack
- Key limitation: Doesn't capture underemployment or hidden unemployment

2.4 Participation Rate

- Formula: (Labour Force ÷ Working-Age Population) × 100
- Working-age = 15+ years old
- Example: Labour Force 13.1m, Working-age pop 18.2m → P = (13.1 ÷ 18.2) × 100 = 71.98%
- Interpretation: Rising = more people seeking work; falling = discouraged workers leaving
- Australia's rate ~66–67% (affected by demographics, education, migration)

2.5 Real Wage Growth

- Formula: ((Nominal Wage Growth − Inflation Rate) ÷ (1 + Inflation Rate)) × 100
- Simpler approximation: Nominal wage % − Inflation % Example: Wages +4%, Inflation +6% → Real wages ≈ −2% Interpretation: Living standards falling if negative; rising if positive

WORKED EXAMPLE

Real wage growth, step by step

Formula. Real wage growth ≈ nominal wage growth − inflation.

Substitute. Nominal 3.0% − inflation 3.5% = −0.5%.

Interpret. Wages rose in dollar terms but bought less — purchasing power fell.

BRETTONOMICS INTERACTIVE

Real Wage Growth Explorer and the CPI Inflation Explorer — compare nominal wage growth against inflation over time.

SECTION 3 Assessing position on the economic cycle

3.1 Expansion Phase Indicators

- Leading: Consumer confidence rising, building approvals up, share prices climbing
- Coincident: Retail sales growing, business investment increasing, employment rising
- Lagging: Unemployment falling, wage growth accelerating, inflation starting to rise

3.2 Peak Phase Indicators

- Leading: Consumer confidence plateau/falling, credit growth excessive, yield curve flattening
- Coincident: GDP growth accelerating, capacity utilization high, inflation rising
- Lagging: Unemployment at/below NAIRU, wage growth strong, inflation clearly rising

3.3 Contraction Phase Indicators

- Leading: Consumer confidence collapsing, credit growth slowing, building approvals falling
- Coincident: Retail sales falling, business investment declining, employment stalling
- Lagging: Unemployment rising, wage growth slowing, inflation still elevated (sticky)

3.4 Trough Phase Indicators

- Leading: Consumer confidence stabilizing, credit growth bottoming, business optimism emerging
- Coincident: Retail sales flat, investment bottomed, employment stabilizing
- Lagging: Unemployment peaking, wage growth minimal, inflation falling

SECTION 4 The Phillips curve and trade-offs

4.1 Short-Run Phillips Curve (SRPC)

- Downward-sloping relationship: Lower unemployment → Higher inflation
- Reflects trade-off available in short run (6–18 months)
- Assumption: Inflation expectations are fixed/anchored
- Policy implication: Central bank can choose point on SRPC (unemployment vs. inflation)

4.2 Long-Run Phillips Curve (LRPC)

- Vertical line at NAIRU: Only one unemployment rate consistent with stable inflation long-term
- Reflects expectations adjustment: If policymakers exploit SRPC, expectations rise → SRPC shifts

- Cannot permanently reduce unemployment below NAIRU without accelerating inflation
- Policy implication: Long-run trade-off is impossible; focus on NAIRU/structural policies

4.3 Shifts in SRPC

- Upward shift (worse trade-off): Supply shocks (oil spike), inflation expectations rise, stagflation risk
- Downward shift (better trade-off): Supply improvements, inflation expectations fall, disinflationary environment
- Example: 2022–23 SRPC shifted up (energy shocks, wage expectations); RBA tightening shifted it back down

COMMON MISTAKE

Distinguish a shift from a movement. A demand change moves the economy along the short-run Phillips curve, trading inflation against unemployment. A supply shock or a change in inflation expectations shifts the whole curve, worsening the trade-off at every level of unemployment.

BRETTONOMICS INTERACTIVE

Phillips Curve interactive — move along the curve and shift it, and compare the short-run and long-run relationships.

4.4 Trade-offs & Conflicting Objectives

- Short run: Can reduce unemployment (cost: higher inflation) or reduce inflation (cost: higher unemployment)
- Long run: Cannot reduce unemployment below NAIRU permanently without accelerating inflation
- Intertemporal: Today's tight policy (higher unemployment) allows tomorrow's looser policy (lower inflation expectations)
- Example: 2022–24 RBA tightening → 425bp rate rises → temporary unemployment rise → inflation fell

SECTION 5 Evaluating economic indicators

5.1 Accuracy Issues

- GDP data revised multiple times: First estimate, second, third, final (6+ months)
- Unemployment: Doesn't capture underemployment, hidden unemployment, or quality of jobs
- Inflation: CPI uses basket of goods; may not reflect individual household prices
- Consumer confidence: Can be volatile, sometimes inconsistent with actual spending

5.2 Reliability Issues

- Seasonality: Retail sales peak December, tourism high in summer (need seasonal adjustment)
- Structural breaks: Data series may change methodology (unemployment definitions changed 1978, 1994, 2008) Lag in publication: Latest unemployment data is 1 week old; GDP data 2 months old Measurement error: Sample surveys may have margins of error (±0.2% for unemployment)

5.3 Efficacy in Measuring Objectives

- GDP growth: Good proxy for objective #1 (economic growth) but misses distribution & sustainability
- Unemployment rate: Imperfect measure of objective #2 (employment) - use underutilisation rate instead
- CPI inflation: Targets objective #3 (price stability) but headline volatile, underlying better
- Current account deficit: Measures objective #4 (external stability) but needs context
- Income per capita: Better measure of objective #6 (living standards) than GDP alone

SECTION 6 Past Australian federal budgets, 2015–2024

6.1 Budget Stance Framework

- Expansionary: Deficit (G > T), stimulus to economy, increases AD
- Contractionary: Surplus (G < T), restraint on economy, decreases AD
- Neutral: Balanced (G = T), no net fiscal impulse
- Assessment: Look at both total and structural budget position

KEY DEFINITION

Judging a budget stance

Direction. Expansionary, contractionary or neutral, measured by the change in the balance.

Timing. Does the stance lean against the cycle, or amplify it?

Composition. Who receives the support, and what is their propensity to spend?

EXAM TIP

Always separate stance from outcome. The balance can move without any policy decision, because automatic stabilisers respond to the cycle. Judge the stance by the discretionary change, not the headline number.

COMMON MISTAKE

Do not quote a budget estimate as the outcome. The figure announced on budget night is a forecast. The Final Budget Outcome, published each September, is the actual result, and the two can differ by tens of billions — 2021–22 was estimated at roughly $80bn and came in at $32.0bn. Always say which figure you are citing, and give the financial year.

6.2 2015–2016 Budget (Turnbull Government)

- Cycle position: Post-mining-boom, sluggish growth (~2–2.5%), unemployment ~5–6%
- Stance: Slightly expansionary (deficit $37bn), company tax cuts proposed
- Rationale: Weak growth, high unemployment → needed stimulus
- Effect: Growth remained weak, unemployment slow to fall (lags expected)

6.3 2017–2018 Budget (Turnbull Government)

- Cycle position: Early expansion (growth 2.5–3%), unemployment falling (~4.5%)
- Stance: Slightly expansionary (deficit $23bn), income tax cuts, infrastructure spending
- Rationale: Below-trend growth, stimulus to support expansion
- Effect: Multiplier effects supported continued recovery toward 2018 peak

6.4 2019–2020 Budget (Morrison Government) – COVID Shock

- Cycle position: Trough/sharp contraction (unemployment spike 7.2%)
- Stance: Highly expansionary (deficit $85bn), JobKeeper, cash transfers
- Rationale: Emergency response to pandemic, prevent depression-level contraction
- Effect: Massive stimulus (multiplier 1.5–2.0), prevented unemployment >10%

6.5 2021–2022 Budget (Morrison Government) – Early Recovery

- Cycle position: Strong recovery (GDP growth 8.6%), unemployment falling rapidly
- Stance: Continued expansionary — the final budget outcome was a deficit of $32.0bn (1.4% of GDP), with extended JobKeeper and extra payments

- Rationale: Recovery still fragile, unemployment still elevated
- Effect: Combined with RBA's low rates, created boom conditions (too stimulatory in hindsight)

6.6 2022–2023 Budget (Albanese Government) – Peak/Contraction

- Cycle position: Peak conditions (unemployment 3.4–3.5%, inflation 8.4%), then contraction
- Stance: Restraint in outcome — a surplus of $22.1bn (0.9% of GDP), the first in 15 years, alongside targeted cost-of-living relief
- Rationale: Inflation crisis required restraint, but cost-of-living squeeze needed support
- Effect: Conflicting objectives—fought inflation but also helped struggling households

6.7 2023–2024 Budget (Albanese Government) – Trough

- Cycle position: Contraction/trough (growth 0.2% YoY, unemployment rising to 4.1%)
- Stance: Targeted support delivered within a surplus of $15.8bn (0.6% of GDP) — energy bill relief and childcare subsidies
- Rationale: Weak growth, cost-of-living crisis, need support without massive stimulus
- Effect: Multiplier effects modest (higher MPS, import leakage); supported demand without overheating

AUSTRALIAN CONTEXT

Two consecutive surpluses

2022–23. A surplus of $22.1bn, or 0.9% of GDP — the first in 15 years.

2023–24. A surplus of $15.8bn, or 0.6% of GDP.

Why they occurred. High commodity prices and record employment lifted company and income tax receipts faster than spending rose.

Why they did not last. Most of the improvement was cyclical, so deficits were projected to return as commodity prices normalised.

SECTION SECTION 7: EVALUATING GOVERNMENT ECONOMIC

MANAGEMENT

7.1 Assessing Macro Objective Achievement

- Objective 1 (Growth): Achieved 2–3% trend growth 2015–2021; fell below 1% 2023–2024 (mixed)
- Objective 2 (Employment): Unemployment fell from 5.7% (2014) to 3.4% (2022); rose to 4.1% (2024) (mixed) Objective 3 (Inflation): Maintained 2–3% target 2015–2021; overshot 8.4% (2022), recovering 2024 (improving) Objective 4 (External stability): Current account deficit ~3% (manageable but rising) (acceptable) Objective 5 (Sustainability): NDIS costs rising unsustainably; climate policies emerging (work in progress) Objective 6 (Living standards): Real wages down 4.5% (2020–24) – major failure (poor)

7.2 Effectiveness of Budget Timing & Design

- COVID stimulus: Well-timed (immediate), massive effect (prevented depression), but excessive in hindsight
- 2021–22 recovery stimulus: Poorly timed (during peak boom), contributed to inflation overshoot
- 2023–24 targeted relief: Better-timed (during contraction), but limited multiplier (high savers, imports)
- Learning: Timing matters more than size; design (who receives?) affects multiplier through MPC

7.3 Cyclical vs. Structural Fiscal Position

- Cyclical deficit: Part caused by weak cycle (tax revenue down, welfare up) – automatic stabilisers
- Structural deficit: Underlying imbalance between government spending & revenue—requires reform

- Example: the 2022–23 and 2023–24 surpluses were largely cyclical — record commodity prices and high employment lifted receipts — while the underlying structural position remained in deficit, which is why deficits were projected to return from 2024–25
- Long-term challenge: Aging population (pensions), NDIS costs rising → structural deficit growing

COMMON MISTAKE

A deficit is not evidence of mismanagement. Part of any balance is cyclical and will unwind as the economy recovers. Only the structural component reflects ongoing policy settings, and only that part requires correction.

IN ONE SENTENCE Separate the cyclical from the structural before you judge the government's record.

ASSESSMENT Multiple choice questions

20 questions covering Unit 4 Topic 2. Answers and explanations follow the question set.

Question 1

Consumer confidence is best classified as which type of indicator?

A. A lagging indicator, because sentiment changes after conditions shift
B. A leading indicator, because it reflects expected future spending decisions
C. A coincident indicator, because it measures current spending activity
D. A structural indicator, because it measures long-term behaviour

Question 2

Real GDP was $2.05 trillion in 2023 and $2.07 trillion in 2024. The real growth rate is approximately:

A. 2.0%
B. 1.98%
C. 1.02%
D. 0.98%

Question 3

The unemployment rate falls from 5.0% to 4.2% with a labour force of 13.5 million. Approximately how many more people are employed?

A. 108,000
B. 540,000
C. 675,000
D. 1,080,000

Question 4

Which statement correctly distinguishes leading from lagging indicators?

A. Lagging indicators forecast future conditions; leading indicators confirm past trends
B. Lagging indicators are less reliable; leading indicators are always accurate
C. Leading indicators change before the economy shifts; lagging indicators change after
D. Leading indicators measure share markets; lagging indicators measure employment

Question 5

Nominal wages grew 3% while inflation was 3.5%. The approximate real wage change is:

A. +0.5%
B. −0.5%
C. +6.5%
D. Cannot be determined without employment data

Question 6

During an expansion, which combination of indicators would you expect?

A. Rising consumer confidence, rising employment and rising inflation
B. Rising consumer confidence, falling employment and rising inflation
C. Falling consumer confidence, rising unemployment and falling inflation
D. Flat confidence, stable employment and stable inflation

Question 7

Why is unemployment treated as a lagging indicator?

A. Unemployment is set by government policy rather than economic conditions

B. Unemployment data is published with a six-month delay

C. Firms delay shedding staff after a downturn begins and delay hiring during recovery

D. Unemployment does not correlate with the economic cycle

Question 8

The participation rate is 66% and the working-age population is 18 million. The labour force is approximately:

A. 12.5 million

B. 13.1 million

C. 18 million

D. 11.88 million

Question 9

An oil price shock raises inflation at every level of unemployment. On a Phillips curve diagram this is shown as:

A. An outward shift of the short-run Phillips curve

B. A movement up along the short-run Phillips curve

C. A movement down along the short-run Phillips curve

D. A leftward shift of the long-run Phillips curve

Question 10

What is the key difference between the short-run and long-run Phillips curves?

A. The short-run curve is vertical; the long-run curve slopes downward

B. They are identical, differing only in the time period measured

C. The short-run curve slopes downward; the long-run curve is vertical at the NAIRU

D. The long-run curve is not recognised in modern economics

Question 11

A budget deficit widens during a contraction even though the government intended to consolidate. The most likely explanation is:

A. Discretionary government spending was increased significantly

B. Automatic stabilisers activated — tax revenue fell and welfare spending rose

C. Interest rates on government debt rose, inflating the deficit

D. Immigration declined, reducing the tax base

Question 12

In 2020–21 the Australian government pursued highly expansionary fiscal policy through JobKeeper and cash transfers. Which cycle position justified this stance?

A. A peak, with the economy overheating and needing restraint

B. An expansion, supporting existing recovery momentum

C. A structural downturn caused by long-term productivity decline

D. A contraction and trough — an emergency response to the COVID-19 shock

Question 13

What is a key limitation of using the unemployment rate as the sole measure of labour market health?

A. It overestimates employment by including government workers

B. It is published with a 12-month lag, making it outdated

C. It ignores underemployment and hidden unemployment

D. It measures only cyclical, not structural, unemployment

Question 14

Fiscal stimulus continued into 2021–22 while unemployment was already around 3.4%, below most NAIRU estimates. The main criticism of this timing is that:

A. Stimulus was added when the economy was already near capacity, adding to inflationary pressure

B. Stimulus was too small to have any measurable effect on demand

C. Stimulus should never be used outside a formal recession

D. Stimulus raised the NAIRU permanently

Question 15

A government has a structural deficit of $15 billion and a cyclical deficit of $10 billion. The total budget deficit is:

A. $5 billion

B. $15 billion

C. Indeterminate without knowing the cycle phase

D. $25 billion

Question 16

Why was the RBA's 425 basis point tightening in 2022–23 considered necessary despite higher unemployment?

A. The short-run Phillips curve showed inflation could be reduced at no cost

B. Inflation expectations were rising, threatening to shift the short-run Phillips curve and trigger a wage-price spiral

C. The government required higher rates to fund the budget deficit

D. Unemployment was too low and policy deliberately aimed to raise it

Question 17

Headline inflation of 8.4% exceeded underlying inflation of 6.1% in 2022. This indicates that:

A. Core inflation exceeded headline inflation, so demand-pull dominated

B. Both measures indicate identical pressures and are equally concerning

C. Underlying inflation is always a less reliable measure than headline

D. A significant part of the increase came from volatile items such as energy and food

Question 18

Which macroeconomic objective did Australia most clearly fail to achieve over 2020–2024?

A. Full employment, with unemployment reaching multi-decade lows

B. Improved living standards, with real wages falling over the period

C. Price stability, with inflation never leaving the 2–3% band

D. External stability, with an unsustainable current account position

Question 19

How do coincident indicators differ in usefulness from leading indicators?

A. Coincident indicators measure current activity, while leading indicators help forecast the next six to twelve months

B. Coincident indicators forecast future conditions; leading indicators confirm past trends

C. Leading indicators give real-time position; coincident indicators offer forward visibility

D. Both types are equally useful, with no meaningful difference

Question 20

A budget provides targeted cost-of-living relief to lower-income households rather than broad tax cuts. The strongest economic argument for this design is that:

A. Targeted relief avoids any increase in aggregate demand

B. Broad tax cuts are always politically unpopular

C. Lower-income households have a higher marginal propensity to consume, producing a larger multiplier per dollar

D. Targeted relief removes the need for monetary policy

ASSESSMENT

Marking guide

Answer key

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
B	D	A	C	B	A	C	D	A	C
Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
B	D	C	A	D	B	D	B	A	C

Explanations

Q1 **B** Confidence shifts before households actually change spending, so it leads the cycle.

Q2 **D** (2.07 − 2.05) ÷ 2.05 × 100 = 0.98%. Dividing by the new value instead of the old gives 1.02%.

Q3 **A** The rate fell 0.8 percentage points; 0.008 × 13.5 million = 108,000, assuming the labour force is unchanged.

Q4 **C** The distinction is timing relative to the cycle, not subject matter or reliability.

Q5 **B** Real wage change ≈ 3% − 3.5% = −0.5%. Real wages fell slightly.

Q6 **A** Expansion features strengthening demand, so confidence, employment and price pressure all rise together.

Q7 **C** Labour is costly to hire and fire, so employment adjusts after output does. Australian data is published monthly, not with a six-month lag.

Q8 **D** 0.66 × 18 million = 11.88 million.

Q9 **A** A supply shock worsens the inflation–unemployment trade-off, shifting the whole short-run curve outward. Movements along it are caused by demand changes.

Q10 **C** In the long run there is no trade-off: unemployment returns to the NAIRU whatever the inflation rate.

Q11 **B** In a downturn receipts fall and transfers rise automatically, widening the deficit without any policy decision.

Q12 **D** The economy had contracted sharply, so large, temporary stimulus was appropriate to prevent a deeper downturn.

Q13 **C** Someone wanting more hours counts as employed, and discouraged workers drop out of the labour force entirely, so the headline rate understates slack.

Q14 **A** Expansionary policy applied near full capacity raises prices more than output, contributing to the inflation overshoot that followed.

Q15 **D** The total deficit is the sum of its structural and cyclical components: $15bn + $10bn = $25bn.

Q16 **B** Once expectations de-anchor, disinflation becomes far more costly, so acting early reduces the eventual sacrifice.

Q17 **D** Underlying measures strip out volatile components, so headline above underlying points to temporary price spikes rather than broad demand pressure.

Q18 **B** Real wages fell as inflation outpaced wage growth. Employment performed strongly; inflation did leave the band, but living standards is the clearest sustained failure.

Q19 **A** Coincident indicators tell you where the economy is now; leading indicators point to where it is heading.

Q20 **C** Spending is concentrated where it is most likely to be spent rather than saved, so the demand effect per dollar is greater.