MM1 The measurement of macroeconomic performance

AQA 7136 · Calculator allowed · about 130 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Study Extract A and Table 1, then answer all questions. A calculator is allowed. Show your working for every calculation.

Extract A: Verdania's economy, 2024 to 2026

A wholly fictional economy invented for Revision Library. All figures are original and hypothetical; they do not describe any real country.

Verdania is a fictional, medium-sized open economy. After a period of subdued growth, the Verdanian government announced a fiscal stimulus package in 2026, increasing government spending by GBP 6 billion to support the recovery. Economists at the Verdanian Institute of Economic Studies estimated the economy's marginal propensity to consume (MPC) at 0.6, its marginal propensity to save (MPS) at 0.1, its marginal propensity to tax (MPT) at 0.2, and its marginal propensity to import (MPM) at 0.1.

Verdania's labour force (the economically active population) is 30 million people. Selected macroeconomic indicators for 2024 to 2026 are shown in Table 1.

Table 1: Selected macroeconomic indicators for Verdania, 2024 to 2026 (CPI, GDP deflator and wage index all base year 2020 = 100)

Year | Nominal GDP (GBP billion) | GDP deflator | CPI | Wage index | Unemployment rate (%)

2024 | 480 | 112.0 | 118.0 | 120.0 | 4.8

2025 | 504 | 115.0 | 122.0 | 124.0 | 4.3

2026 | 523 | 117.0 | 126.0 | 129.0 | 4.5

Between 2024 and 2026, Verdania's nominal GDP rose from GBP 480 billion to GBP 523 billion, an increase of 8.96%. However, real GDP rose by a smaller percentage over the same period.

1 Index numbers.

(a) Define an index number. **(1)**

(b) The CPI for 2026 in Table 1 is 126.0 (2020 = 100). Explain what this value indicates about the general price level in Verdania. **(3)**

(Total for Question 1 is 4 marks)

2 Using Table 1, answer the following about Verdania's rate of CPI inflation.

(a) Calculate the rate of CPI inflation between 2024 and 2025. **(2)**

(b) Calculate the rate of CPI inflation between 2025 and 2026. **(2)**

(c) Using your answers to (a) and (b), describe the trend in Verdania's rate of inflation between 2024 and 2026. **(3)**

(Total for Question 2 is 7 marks)

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3 Real GDP. (Real GDP = (nominal GDP / GDP deflator) x 100.)

(a) Using Table 1, calculate real GDP for Verdania in 2025, to 1 decimal place. Show your working. **(3)**

(b) Calculate real GDP for Verdania in 2026, to 1 decimal place. **(2)**

(c) Hence calculate the percentage growth in real GDP between 2025 and 2026, using your answers to (a) and (b). **(3)**

(Total for Question 3 is 8 marks)

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4 Unemployment: percentage points versus percentage change.

(a) Using Table 1, calculate the change in Verdania's unemployment rate, in percentage points, between 2024 and 2025. **(2)**

(b) Calculate the same change expressed as a percentage change (relative to the original 2024 rate), and explain how this measure differs from a change in percentage points. **(3)**

(Total for Question 4 is 5 marks)

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5 Real wages. (Real wage index = (nominal wage index / CPI) x 100.)

(a) Using Table 1, calculate the percentage change in the nominal wage index between 2025 and 2026. **(2)**

(b) Calculate the real wage index for 2026. **(3)**

(Total for Question 5 is 5 marks)

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6 Explain, using your answers to Question 5 and Table 1, why real wages in Verdania rose between 2025 and 2026 even though both nominal wages and prices (CPI) also rose over the same period.

(Total for Question 6 is 6 marks)

7 The multiplier. (Using the marginal propensities given in Extract A: MPC = 0.6, MPS = 0.1, MPT = 0.2, MPM = 0.1, and the GBP 6 billion rise in government spending in 2026.)

(a) Show that these marginal propensities are consistent with the rule that MPC + MPS + MPT + MPM = 1. **(2)**

(b) Calculate Verdania's marginal propensity to withdraw (MPW). **(2)**

(c) Calculate the value of the expenditure (Keynesian) multiplier for Verdania. **(2)**

(d) Hence calculate the total eventual change in Verdania's real national income (real GDP) resulting from the GBP 6 billion increase in government spending. **(2)**

(e) Explain, in terms of withdrawals and injections, why an initial increase in government spending of GBP 6 billion leads to a TOTAL increase in national income greater than GBP 6 billion. **(2)**

(Total for Question 7 is 10 marks)

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8 Assess whether an increase in real GDP is a reliable indicator of an improvement in the living standards of Verdania's citizens.

(Total for Question 8 is 7 marks)

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9 GDP per capita.

(a) Define GDP per capita, and explain why it might be a better measure of average living standards than total real GDP. **(4)**

(b) State one further limitation of using GDP per capita (rather than total GDP) as a measure of living standards. **(2)**

(Total for Question 9 is 6 marks)

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10 Verdania's labour force (the economically active population) is 30 million people. In 2025, 1.29 million of these people were unemployed.

(a) Calculate Verdania's unemployment rate in 2025, and confirm this is consistent with the value shown in Table 1. **(3)**

(b) State one limitation of the claimant count as a measure of unemployment, as an alternative to the labour force survey. **(2)**

(Total for Question 10 is 5 marks)

11 Real versus nominal GDP. (Extract A states that Verdania's nominal GDP rose from GBP 480 billion in 2024 to GBP 523 billion in 2026, an increase of 8.96%.)

(a) Calculate the percentage increase in nominal GDP between 2024 and 2026, confirming this matches the 8.96% stated in Extract A. **(2)**

(b) Explain why the percentage increase in real GDP between 2024 and 2026 is smaller than the percentage increase in nominal GDP. **(4)**

(Total for Question 11 is 6 marks)

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12 How the CPI is constructed.

(a) The CPI is calculated using a fixed 'basket of goods and services', with each item weighted according to its share of average household spending. Explain why these weights need to be updated periodically. **(3)**

(b) State one household or group for whom the national CPI inflation rate might not accurately reflect their own personal experience of rising prices, and explain why. **(3)**

(Total for Question 12 is 6 marks)

Mark scheme · MM1 The measurement of macroeconomic performance

Question 1

- (a) **B1** a figure that expresses the value of a variable relative to a chosen base value (usually set at 100 in a base year/period), used to track proportional change over time
- **(a) Answer: A figure showing a variable's value relative to a base value of 100.**
- (b) **M1** the average price level in 2026 is 126.0 relative to a base value of 100 in 2020
- (b) **A1** average prices in 2026 are 26% higher than in the base year 2020 (a rise of 26.0 index points)
- (b) **A1** equivalently, a representative basket of goods and services that cost GBP 100 in 2020 would now cost GBP 126 in 2026
- **(b) Answer: Average prices are 26% higher in 2026 than in the base year 2020.**

Question 2

- (a) **M1** (122.0 - 118.0) / 118.0 x 100
- (a) **A1** = 3.39%, awrt 3.4%
- **(a) Answer: Awrt 3.4%.**
- (b) **M1** (126.0 - 122.0) / 122.0 x 100
- (b) **A1** = 3.28%, awrt 3.3%
- **(b) Answer: Awrt 3.3%.**
- (c) **B1** the rate of inflation fell very slightly, from awrt 3.4% (2024-25) to awrt 3.3% (2025-26) [ft candidate's own values]
- (c) **B1** prices in Verdania were still rising (positive inflation) throughout the period, so this is disinflation, NOT deflation
- (c) **B1** distinguishes the two terms: disinflation means the general price level is still rising but at a slower rate, which is different from deflation (a fall in the general price level, i.e. negative inflation)
- **(c) Answer: Inflation fell very slightly (awrt 3.4% to awrt 3.3%): disinflation, not deflation.**

Question 3

- (a) **M1** real GDP = (504 / 115) x 100
- (a) **A1** = GBP 438.3 billion, awrt 438.3
- (a) **B1** real GDP removes the effect of price changes from the nominal figure, allowing the actual volume of output to be compared between years
- **(a) Answer: GBP 438.3 billion (awrt).**
- (b) **M1** real GDP = (523 / 117) x 100
- (b) **A1** = GBP 447.0 billion, awrt 447.0
- **(b) Answer: GBP 447.0 billion (awrt).**
- (c) **M1** % growth = (447.0 - 438.3) / 438.3 x 100 (ft candidate's own values from (a) and (b))
- (c) **A1** = 1.98%, awrt 2.0%
- (c) **B1** this represents real economic growth (a genuine increase in the volume/quantity of output produced), not just a rise in nominal spending
- **(c) Answer: Awrt 2.0%.**

Question 4

- (a) **M1** 4.3 - 4.8
- (a) **A1** a fall of 0.5 percentage points
- **(a) Answer: A fall of 0.5 percentage points.**
- (b) **M1** (4.3 - 4.8) / 4.8 x 100
- (b) **A1** a fall of 10.4%, awrt 10.4%
- (b) **B1** the two measures differ because 'percentage points' is a simple arithmetic difference between the two rates, while 'percentage change' expresses that difference relative to (as a proportion of) the original (2024) rate
- **(b) Answer: A fall of awrt 10.4%; percentage points is a simple difference, percentage change is relative to the starting value.**

Question 5

- (a) **M1** (129.0 - 124.0) / 124.0 x 100
- (a) **A1** = 4.03%, awrt 4.0%
- **(a) Answer: Awrt 4.0%.**
- (b) **M1** (129.0 / 126.0) x 100
- (b) **A1** = 102.4, awrt 102.4
- (b) **B1** the real wage index measures the purchasing power of wages, i.e. wages adjusted for the effect of inflation/changes in the price level
- **(b) Answer: Awrt 102.4.**

Question 6

- **M1** nominal wages rose by awrt 4.0% between 2025 and 2026 (ft from 5(a))
- **A1** while the CPI (general price level) rose by a smaller awrt 3.3% over the same period (ft from 2(b))
- **M1** since the percentage rise in nominal wages exceeded the percentage rise in prices, the purchasing power of the average wage increased
- **A1** this is confirmed by the real wage index rising from awrt 101.6 (2025: 124.0/122.0 x 100) to awrt 102.4 (2026), ft candidate's own real wage index values
- **A1** (evaluative point) this shows that it is the RELATIVE rate of change between wages and prices, not just whether both are rising, that determines whether real incomes/living standards improve
- **B1** correctly derives/restates the 2025 real wage index (awrt 101.6) as supporting evidence
- **Answer: Nominal wages grew faster (awrt 4.0%) than prices (awrt 3.3%), so the real wage index rose from awrt 101.6 to awrt 102.4.**

Question 7

- (a) **M1** 0.6 + 0.1 + 0.2 + 0.1
- (a) **A1** = 1.0, confirming the propensities are consistent (every extra pound of income is either consumed, saved, taxed or spent on imports)
- **(a) Answer: 0.6+0.1+0.2+0.1 = 1.0, as required.**
- (b) **M1** MPW = MPS + MPT + MPM = 0.1 + 0.2 + 0.1
- (b) **A1** = 0.4
- **(b) Answer: MPW = 0.4.**
- (c) **M1** multiplier = 1 / MPW = 1 / 0.4
- (c) **A1** = 2.5
- **(c) Answer: Multiplier = 2.5.**
- (d) **M1** change in national income = multiplier x change in government spending = 2.5 x 6
- (d) **A1** = GBP 15 billion (an increase)
- **(d) Answer: GBP 15 billion.**
- (e) **B1** the initial GBP 6 billion of extra government spending becomes income for firms/workers, who in turn spend a proportion of this extra income (determined by the MPC) on further consumption, creating a further round of extra income for others
- (e) **B1** this respending continues through successive rounds, each smaller than the last (as some income leaks out as saving, tax and import spending/withdrawals at each round), so the total (cumulative) rise in national income exceeds the size of the original injection
- **(e) Answer: Repeated rounds of respending, shrinking each round due to withdrawals, cumulatively add up to more than the initial injection.**

Question 8

- **M1** identifies a reason real GDP growth might indicate improved living standards, e.g. higher real output generally means more goods/services and incomes available, potentially funding better healthcare/education
- **A1** developed with reference to the data, e.g. Verdania's real GDP grew by awrt 2.0% between 2025 and 2026 (Question 3), suggesting rising average output/incomes
- **M1** identifies a limitation, e.g. real GDP does not account for how income is distributed (inequality); average figures can rise even if most citizens see no benefit (allow: ignores externalities/environmental costs, non-market activity, quality of life)
- **A1** developed explanation, e.g. GDP growth driven by a small number of very high earners could coincide with stagnant or falling median living standards
- **M1** second limitation, e.g. real GDP does not directly measure inflation-adjusted disposable income if a large share of extra output is taxed, exported, or if population is also growing
- **A1** developed point, e.g. if population grows faster than real GDP, real GDP per capita - and therefore average living standards - could fall even while total real GDP rises
- **A1** evaluative conclusion: real GDP growth is a useful but incomplete indicator; a fuller assessment of living standards would also require data on income distribution, GDP per capita, and broader wellbeing measures
- **Answer: Real GDP growth (awrt 2.0%, 2025-26) is a useful but incomplete indicator; distribution, GDP per capita and non-market factors also matter.**

Question 9

- (a) **B1** GDP per capita = real GDP divided by the size of the population
- (a) **M1** total real GDP can rise simply because the population is growing, even if the amount of output/income per person is unchanged or falling
- (a) **A1** dividing by population corrects for this, giving a measure of the average output/income available per person, which more directly reflects potential living standards
- (a) **A1** illustrative example: if Verdania's population grew by 3% while its real GDP grew by only 2% (Question 3(c)), real GDP per capita would actually FALL, even though total real GDP rose
- **(a) Answer: GDP per capita = real GDP / population; it corrects total GDP for population size, better reflecting the average person's output/income.**
- (b) **B1** it is only an AVERAGE figure and does not show how income/output is distributed across the population
- (b) **B1** developed: GDP per capita could rise even if the income gains are concentrated among a small, very rich group, while most citizens see no improvement in their own living standards (allow instead: ignores non-market activity, environmental quality, leisure time, or the composition/quality of output)
- **(b) Answer: It is only an average and hides how income is actually distributed across the population.**

Question 10

- (a) **M1** unemployment rate = (number unemployed / labour force) x 100 = (1.29 / 30) x 100
- (a) **A1** = 4.3%
- (a) **B1** matches the 2025 unemployment rate of 4.3% given in Table 1, confirming consistency
- **(a) Answer: 4.3%, matching Table 1.**
- (b) **B1** the claimant count only includes people claiming unemployment-related benefits, so it excludes unemployed people who are not eligible for or do not claim benefits, causing it to understate true unemployment
- (b) **B1** developed example: a young person who has just left education and is job-seeking, or someone whose partner earns enough that the household does not qualify for benefits, would count as unemployed on the labour force survey but might not appear in the claimant count
- **(b) Answer: It excludes unemployed people who do not claim benefits, understating true unemployment.**

Question 11

- (a) **M1** (523 - 480) / 480 x 100
- (a) **A1** = 8.96%, confirming the figure given in Extract A
- **(a) Answer: 8.96%, as stated.**
- (b) **M1** nominal GDP measures the value of output at CURRENT prices, so part of its rise reflects higher prices (inflation) rather than more output being produced
- (b) **A1** real GDP removes the effect of rising prices (by deflating nominal GDP using the GDP deflator), isolating the change in the actual VOLUME of goods and services produced
- (b) **M1** since Verdania experienced positive inflation throughout this period (Table 1: the GDP deflator rose from 112.0 to 117.0), part of the nominal GDP increase reflects this price rise rather than genuine extra output
- (b) **A1** therefore the real GDP growth rate (the true increase in output) is smaller than the nominal GDP growth rate, which includes both extra output AND the effect of rising prices
- **(b) Answer: Some of the nominal rise reflects price inflation, not extra output, so real GDP growth (awrt 4.3% over the period) is smaller than nominal growth (8.96%).**

Question 12

- (a) **M1** the pattern of household spending changes over time, e.g. spending on new technology rises while spending on some traditional goods falls
- (a) **A1** if the weights are not updated, the CPI would no longer accurately reflect how a typical household's cost of living is actually changing
- (a) **B1** statistical agencies periodically re-weight and update the basket (e.g. via household expenditure surveys) to keep it representative of current spending patterns
- **(a) Answer: Spending patterns change over time, so weights must be updated to keep the CPI representative.**
- (b) **B1** identifies a plausible group, e.g. low-income households (who spend a higher proportion of income on food/energy), pensioners (who spend more on healthcare/heating), or students
- (b) **B1** explains that if this group's actual spending pattern differs significantly from the average 'basket', their personal inflation rate could be higher or lower than the published national CPI figure
- (b) **B1** gives a specific, consistent example, e.g. a sharp rise in energy prices would raise a pensioner's personal inflation rate by more than the national average CPI, since heating makes up a larger share of their spending
- **(b) Answer: E.g. pensioners: heating/energy is a larger share of their spending, so their personal inflation rate can exceed the national CPI figure.**