



## ASSIGNMENT COVER SHEET

**THIS FORM MUST BE AT THE FRONT OF EACH ASSIGNMENT  
CANDIDATES MUST KEEP A COPY OF THEIR ASSIGNMENT**

Candidate to complete the following section (and update details in header):

<b>Member ID:</b>	<#>
<b>Subject:</b>	<div><input type="checkbox"/> Asset Liability Management</div> <div><input type="checkbox"/> Communication, Modelling and Professionalism</div> <div><input type="checkbox"/> Banking</div> <div><input type="checkbox"/> Enterprise Risk Management</div> <div><input type="checkbox"/> General Insurance and Health Pricing and Portfolio Analytics</div> <div><input type="checkbox"/> General Insurance and Health Valuation</div> <div><input type="checkbox"/> Investment</div> <div><input type="checkbox"/> Life Insurance and Retirement Product Development</div> <div><input type="checkbox"/> Life Insurance and Retirement Valuation</div> <div><input type="checkbox"/> Data Science Applications</div> <div><input type="checkbox"/> General Insurance Applications</div> <div><input type="checkbox"/> Life Insurance Applications</div> <div><input type="checkbox"/> Superannuation and Retirement Applications</div>
<b>Due Date:</b>	Tuesday, 27 August 2024 at 11am – 1pm AEST (Sydney time)

### PLAGIARISM

By submitting your assignment, you are implicitly stating that the work is your own.

Remember that an important aspect of being a professional actuary is to always act with integrity. Committing plagiarism by copying another person's work or not properly referencing other sources used in your assignment is a breach of the Integrity principle under the Actuaries Institute's Code of Conduct.

Any suspected plagiarism will be referred to the Institute's Executive General Manager, Education for review. Depending on findings, a complaint regarding the member may be made to the Institute's Conduct Committee. Subject marks may not be released until the matter is resolved.

Be aware that your assignment may be vetted using Turnitin.



### QUESTION 1

(10 Marks)

#### Question background.

A Japanese financial services company owns two subsidiaries, both operating in the United States of America:

1. A **regional bank** with assets that comprise mainly home loans denominated in US Dollars;
2. A **life insurance company** with a portfolio of term life insurance and annuity policies, backed by a diversified asset portfolio which includes an allocation to global listed equities.

The yen is currently trading at its lowest level in 34 years versus the US dollar. This is mainly because the US economy has been growing strongly and inflation has been high, so that the US central bank has been maintaining its short term interest rate at a level well above that set by the Japanese central bank.

More recently both countries have reported declining inflation rates.

In the 2024/25 financial year, the regional bank is expected to return a \$1 million USD profit while the life insurance company is not expected to return a profit.

Assume all figures apply as at 30 June 2024.

Country	Japan	USA
Inflation target	2.0%pa	2.0%pa
Inflation (last 12 months)	2.8%pa	3.3%pa
Cash Rate 30 June 2024	0.10%pa	5.25%pa
Exchange Rate 30 June 2024	160 JPY	1 USD
Exchange Rate forecast for 30 June 2025	125 JPY	1 USD

USD: United States Dollar

JPY: Japanese Yen



### Question

- a) Explain how, in the current economic conditions, the US central bank is influencing the rate of money creation and the impact on profit (in USD) of the regional bank. (3 marks)
- b) Demonstrate how the profit (in JPY) of the Japanese parent company is affected by exchange rates. (2 marks)
- c) Describe how leverage drives the returns and the volatility of returns of the listed equity component of the life insurance company's asset portfolio. (2 marks)
- d) Outline three methods for stabilising the profitability of the US subsidiaries, when reported in JPY, against a depreciation of the USD versus the JPY. (3 marks).

**END OF ASSESSMENT**