

FINM3405 DERIVATIVES AND RISK MANAGEMENT

TUTORIAL SHEET 1: INTRODUCTION TO DERIVATIVE SECURITIES

- Question 1.** (1) What is a derivative security?
- (2) What is the role of derivative security markets in the economy?
 - (3) What is the main difference between forwards/futures and options?
 - (4) How do you use futures and options to speculate on an expected increase in the price of the underlying asset over the short term? What about a decrease? Plot the payoff diagrams from your strategies.
 - (5) Suppose you hold a S&P/ASX200 index ETF and you're worried about the market falling over the short term, but you don't want to sell your holding.
 - (a) How would you use futures contracts to manage this risk? Plot a payoff diagram of your strategy. What futures contracts are available for this?
 - (b) How would you use options to manage this risk? Plot a payoff diagram of your strategy. What options contracts are available for this?
 - (c) What is the payoff diagram if you sold a call option on your ETF whose strike price equals the value of your holding? Why would you do this?

Question 2. What are the differences between OTC markets and trading venues? What is a trading venue? What is a multilateral trading facility (MTF) and what are some examples? What is an alternative trading system (ATS) and what are some examples? How do they compare to traditional exchanges? What is a central counterparty clearing house (CCP) and what are some examples?

- Question 3.** (1) You run a bank that is mostly invested in long duration US Government bonds, but mostly financed by retail demand and term deposits. What is your interest rate exposure here? How might you use interest rate swaps to manage this exposure?
- (2) Your business raised a significant amount of debt financing at fixed interest rates over 2024 and you think interest rates might start decreasing now. How might you use interest rate swaps here to get more favourable borrowing costs if your view does turn out to be correct?

Question 4. Your business just sold off a major offshore division and will be paid in the foreign currency in 1 month. You intend to immediately exchange the foreign currency to your domestic currency. What is your exchange rate exposure here? How would you use currency forwards to manage this exposure?

Question 5. What was LIBOR and where did it go? What was its role in financial markets? What are its proposed replacements? What are some other global reference rates that play a similar role to LIBOR? What are their interest rate quoting conventions: What maturities are quoted? Are they discount rates, simple interest or discrete compound interest? What day count conventions do they use?

Question 6. What went wrong at Silicon Valley Bank (SVB)? Why did depositors run on the bank? What market risk was SVB exposed to and possibly didn't manage well? In hindsight what would you recommend they have done differently?

Question 7. What was the 2008 global financial crisis and what were its impacts on financial markets and the economy? What kind of risks did it present to businesses and how might you think about managing those risks? What impact did it have on OTC market regulation? Have you watched [The Big Short](#)? What is your view on the cause of the GFC?

Question 8. What happened at Long Term Capital Management (LTCM)? What were some of the derivatives trading strategies that LCTM employed? Who were the principal people behind LCTM - are some names familiar? What were the market movements and exposures that they didn't expect and brought them down?

Question 9. (1) What are the main trading venues that trade derivative securities in your home country?

- (2) What are the main contracts traded on these venues?
- (3) What are the contract specifications of these contracts?
- (4) As a retail trader, how can you access trading these derivative securities?
- (5) Who are the main financial market regulators in your home country?
- (6) Who are the main industry associations and bodies?
- (7) Can you find any information or statistics on OTC derivative market activity in your home country?
- (8) Who are the main financial institutions active in derivative security markets (and potential future employers for you) in your home country?