*Please answer the following :*

*Why might a variable rate mortgage be considered a “derivative” and a fixed rate mortgage not?*

*Explain the impact transaction costs have on the ability to make arbitrage profits in forward and futures markets.*

*Why can repos be used to simulate borrowing?*

A fixed-rate mortgage charges a set rate of interest that does not change throughout the life of the loan. Although the amount of principal and interest paid each month varies from payment to payment, the total payment remains the same. The main advantage of a fixed-rate loan is that the borrower is protected from sudden and potentially significant increases in monthly mortgage payments if interest rates rise. A variable rate mortgage is a type of home loan in which the interest rate is not fixed. Instead, interest payments will be adjusted at a level above a specific benchmark or reference rate (such as LIBOR + 2 points). The value of such a mortgage depends on the reference point and therefore in essence it behaves like a derivative.

The examples in the textbook have considered zero transaction costs. The presence of transaction costs can greatly reduce the profits arising from arbitrage opportunities.

A repurchase agreement (repo) is a form of short-term borrowing for dealers in government securities. In the case of a repo, a dealer sells government securities to investors, usually on an overnight basis, and buys them back the following day at a slightly higher price. That small difference in price is the implicit overnight interest rate. Repos are typically used to raise short-term capital. The repo enables both a) banks with excess funds to deposit them short term in lieu of alternative investments, and b) provides funding (i.e. loans that have to be paid back) to banks who need cash immediately in order to fund long-term investments such as ABSs.