Treasury Bills and Key Interest Rates

U.S. and Canadian Treasury Bills

A **Treasury Bill (T-bill)** is a short-term zero coupon bond issued by the federal government. Therefore, a price, P, is paid at the time of purchase in exchange for receiving the maturity (or redemption) value, C, on the maturity date.

Key Facts:

1. The quoted rate on a U.S. T-Bill is a **simple discount rate**, d. The time value is **based on a 360-day year**. For example, for an n-day U.S. T-bill, we have

$$P = C \cdot \left(1 - d \cdot \frac{n}{360}\right)$$

2. The quoted rate on a Government of Canada T-Bill is a **simple interest rate**, i. The time value is **based on a 365-day year**. For example, for an n-day Canadian T-bill, we have

$$C = P \cdot \left(1 + i \cdot \frac{n}{365}\right)$$

   The most common values of n are 90, 120, and 180.

Remark on Testing: Knowledge of T-bills is likely to be tested with a numeric problem. Knowledge of the information that follows relating key interest rates is likely to be tested in a "Which of the following statements is true?" type format.

The U.S. Federal Reserve and Key Interest Rates

The U.S. Federal Reserve manages the central banking system for the country. It consists of three parts:

1. A board of governors
2. 12 regional "reserve banks" known as District Federal Reserve Banks
3. A committee known as the Federal Open Market Committee (FOMC) that sets policy including when to buy or sell U.S. Treasury bonds

Each bank in the U.S. is required to have a certain amount money, called the bank's **reserve**, on deposit at its District Federal Reserve Bank.

Types of Interest Rates

Prime rate – this is the interest rate at which banks in the U.S. will lend money to their most favored customers

Discount Rate – this is the interest rate at which banks in the U.S. can borrow money directly from the Federal Reserve

Federal funds rate – this is the interest rate at which banks that have more than their reserve requirement at their District Federal Reserve Bank can lend the excess funds to other banks

Remark: Banks generally prefer to borrow money from other banks rather than directly from the Federal Reserve, since doing so signals that the borrowing bank is creditworthy.

Federal funds target rate – this is the target rate for the federal funds rate set by the FOMC.

Remark: If the federal funds target rate is increased, then banks are inclined to keep their excess reserves, and so they write fewer loans. Conversely, if the federal funds target rate is decreased, then banks are inclined to lend their excess reserves, and so they write more loans. By changing the federal funds target rate, FOMC can affect banking lending policy.

London Inter-Bank Offered Rate (LIBOR) – this is an often-used benchmark interest rate at which banks in London charge other banks