**CHAPTER 8 – Municipal Securities**

1. **Answer the below questions.**
2. **Explain why you agree or disagree with the following statement: “All municipal bonds are exempt from federal income taxes.”**

Municipal securities are issued by state and local governments and by governmental entities such as “authorities” or special districts. There are both tax-exempt and taxable municipal bonds. “Tax-exempt” means that interest on municipal bonds is exempt from federal income taxation, and it may or may not be taxable at the state and local levels. Most municipal bonds outstanding are tax-exempt.

Taxable municipal bonds are bonds whose interested is taxed at the federal income tax level. Because there is no tax advantage, an issuer must offer a higher yield than for another tax-exempt municipal bond. The yield must be higher than the yield on U.S. government bonds because an investor faces credit risk by investing in a taxable municipal bond. The investors in taxable municipal bonds are investors who view them as alternatives to corporate bonds.

1. **Explain why you agree or disagree with the following statement: “All municipal bonds are exempt from state and local taxes.”**

One would disagree with the statement that all municipal bonds are exempt from state and local taxes. “Tax-exempt” means that interest on municipal bonds is exempt from federal income taxation, and it may or may not be taxable at the state and local levels. Thus, not all municipal bonds are exempt from state and local taxes.

1. **If Congress changes the tax law so as to increase marginal tax rates, what will happen to the price of municipal bonds?**

Tax-Exempt Yield = Equivalent taxable yield (1 – Marginal Tax Rate)

Assume the equivalent taxable yield for the bond is not affected by the marginal tax rate. If the marginal tax rate increases, then the Tax-Exempt Yield decreases. If the yield decreases, the price increases. Another way to think about it is that higher tax rates make tax-free income more attractive. People will pay more for securities with tax-free income.

1. **What is the difference between a tax-backed bond and a revenue bond?**

Tax-backed bonds:

* Issued by states, counties, special districts, cities, towns, and school districts
* Secured by the issuer’s generally taxing power
* Include general obligation debt, appropriation-backed obligations, and debt obligations supported by public credit enhancement programs.
* Limited and Unlimited Tax Obligations:
	+ Unlimited tax general obligation debt is secured by the ***full faith and credit of the issuer***. It is secured by the issuer’s unlimited taxing power and revenue sources include corporate and individual income taxes, sales taxes, and property taxes.
	+ A Limited Tax obligation debt is backed by a specific tax (such as a property or sales tax).

Revenue bonds

* Used to finance specific projects (roads, airports…)
* Backed by revenues from the projects (tolls, fees…)
1. **Which type of municipal bond would an investor analyze using an approach similar to that for analyzing a corporate bond?**

Revenue bonds (Revs) are paid from the proceeds of a specific “business” like Denver International Airport or the E470 highway tolls. The analysis of Revenue bonds is similar to the analysis of corporate bonds in that the investor must consider the state of the “business” backing the bonds.

General Obligation (GOs) bonds are backed by the full faith and credit of the issuer and often rely on tax revenue. In this case the rate is determined by accessing information in four basic categories:

1. Information on the issuer’s debt structure to determine the overall debt burden.
2. The issuer’s ability and political discipline to maintain sound budgetary policy. The focus of attention here usually is on the issuer’s general operating funds and whether it has maintained at least balanced budgets over three to five years.
3. Determining the specific local taxes and intergovernmental revenues available to the issuer as well as obtaining historical information both on tax collection rates, which are important when looking at property tax levies, and on the dependence of local budgets on specific revenue sources.
4. Assessment of the issuer’s overall socioeconomic environment. The determinations that have to be made here include trends of local employment distribution and composition, population growth, real estate property valuation, and personal income, among other economic factors.
5. **“An insured municipal bond is safer than an uninsured municipal bond.” Indicate whether you agree or disagree with this statement.**

An insured municipal bond is safer than THAT bond uninsured. Only issuers with low credit ratings buy insurance. Insured bonds, in addition to being secured by the issuer’s revenue, are also backed by insurance policies written by commercial monoline insurance companies.

Insurance on a municipal bond is an agreement by an insurance company to pay the bondholder any bond principal and/or coupon interest that is due on a stated maturity date but that has not been paid by the bond issuer. When issued, this municipal bond insurance usually extends for the term of the bond issue, and it cannot be canceled by the insurance company.

Because municipal bond insurance reduces credit risk for the investor, the marketability of certain municipal bonds can be greatly expanded. Municipal bonds that benefit most from the insurance would include lower-quality bonds, bonds issued by smaller governmental units not widely known in the financial community, bonds that have a sound though complex and difficult-to-understand security structure, and bonds issued by infrequent local-government borrowers who do not have a general market following among investors.

1. **Who are the parties to a letter-of-credit–backed municipal bond, and what are their responsibilities?**

A **letter-of-credit (LOC) agreement** is the strongest type of support available from a commercial bank. There are three parties to an LOC:

1. LOC provider
2. Municipal issuer
3. Bond trustee

The **LOC provider** is the bank that issues the LOC and is required to advance funds to the trustee if one of any specified events occurs. The **municipal issuer** is the municipality that is requesting the LOC in connection with the offering of the bond. The municipal issuer agrees to two things: (1) to reimburse the LOC provider for any payments that the LOC provider had to make under the agreement, and (2) to make an LOC fee payment periodically to the LOC provider. The LOC fee is typically from 50 basis points to 200 basis points of the outstanding principal amount of the bond issue.

A direct-pay LOCgrants the **trustee** the right to request that the LOC provider provide principal and/or interest for the LOC-backed municipal bond if there is a specified event or default or an inability of the municipal issuer to meet a contractual interest payment or principal at the maturity date. The trustee can make this demand for funds on the LOC provider without requesting that the municipal issuer make the payment first. In contrast to a direct-pay LOC, the other two types of LOC arrangements (standby LOC and confirming LOC) require that the trustee must first request any contractual payment from the municipal issuer before drawing down on the LOC.

1. **Answer the below questions.**
2. **What are the three different types of letter-of-credit in a municipal bond, and how do they differ?**
3. direct-pay LOC
4. standby LOC
5. confirming LOC

A **direct-pay LOC** grants the trustee the right to request that the LOC provider provide principal and/or interest for the LOC-backed municipal bond if there is a specified event or default or an inability of the municipal issuer to meet a contractual interest payment or principal at the maturity date. The trustee can make this demand for funds on the LOC provider without requesting that the municipal issuer make the payment first. From a credit perspective, the
direct-pay LOC provides the trustee and therefore the bondholders with the most comfort. This is because in contrast to a direct-pay LOC, the other two types of LOC arrangements (standby LOC and confirming LOC) require that the trustee must first request any contractual payment from the municipal issuer before drawing down on the LOC.

The distinction between a **standby LOC** and a **confirming LOC** (also called a **LOC wrap**)is that there are small community banks that are unrated by any of the rating agencies but nevertheless can issue an LOC. As a result, these small banks look to a correspondent bank that is a larger rated bank to confirm their LOC.

If the correspondent bank fails to honor its LOC, the smaller bank must do so. That is, the LOC provider is the small bank but the underlying credit is the larger bank. In fact, a confirming LOC can also be provided so that an entity other than a bank can be an LOC provider.

1. **Which of letter-of-credit bond provides the greatest protection for investors?**

From a credit perspective, the direct-pay LOC provides the trustee and therefore the bondholders with the greatest protection compared to either the standby LOC or the confirming LOC. This is because the latter two types of LOC arrangements (in contrast to direct-pay LOC) require that the trustee must first request any contractual payment from the municipal issuer before drawing down on the LOC.

1. **Answer the below questions.**
2. **What is a pre-refunded bond?**

The escrow fund for a refunded municipal bond can be structured so that the refunded bonds are to be called at the first possible call date or a subsequent call date established in the original bond indenture. Such bonds are known as **prerefunded municipal bonds**.

1. **Why does a properly structured prerefunded municipal bond have no credit risk?**

When this portfolio of securities whose cash flow matches that of the municipality’s obligation is in place, the refunded bonds are no longer secured as either general obligation or revenue bonds. The bonds are now supported by the portfolio of securities held in an escrow fund. Such bonds, if escrowed with securities guaranteed by the U.S. government, have little if any credit risk. They are the safest municipal bond investments available.

1. **Give ~~two~~ three reasons why an issuing municipality would want to refund an outstanding bond issue using an escrow account.**
2. Many refunded issues were originally issued as revenue bonds. Included in revenue issues are restrictive-bond covenants. The municipality may wish to eliminate these restrictions. The creation of an escrow fund to pay the bondholders legally eliminates any restrictive-bond covenants.
3. Alter the maturity schedule of the obligation.
4. Pay a lower interest rate.
5. **The following statement appeared in a publication by the Idaho State Treasurer’s Office:**

**“Each year since 1982 the Idaho State Treasurer has issued a State of Idaho Tax Anticipation Note ‘TAN’. These notes are municipal securities that are one-year, interest-bearing debt obligations of the State of Idaho. The distinguishing characteristic of a municipal security is that the interest earned on them is exempt from federal income tax. Idaho municipal securities are further exempt from state income taxes. Idaho’s TANs are issued in multiples of $5,000 which is the amount paid when the bond matures. Idaho TANs are issued with a fixed interest rate.”**

**Why is a TAN issued by a municipality?**

A TAN is a tax anticipation note that is a short-term obligation issued by a state or municipal government in anticipation of future tax collections. Because municipalities need to cover seasonal and temporary imbalances and also need immediate funding for a project (such as
a highway construction), a TAN is an ideal means of raising the money now and paying off the expenditures at a later date through taxes that will be collected.

1. **Historically, what have been the causes of municipal bankruptcies?**
2. Economic conditions: Defaults caused by downturns in the economy and high interest rates.
3. Nonessential services: Revenue bonds issued for services whose service was no longer needed.
4. Feasibility of projects and industries: Revenue bonds are issued after a feasibility study for a project is completed. The feasibility study may have been too optimistic with respect to the demand for the project or the cost of completing the project.
5. Fraud: Municipal officials fail to comply with the terms of the relevant documents.
6. Mismanagement: Inability to successfully manage a project.
7. Unwillingness to pay: A municipality may simply be unwilling to pay (i.e., repudiation of the debt obligation).
8. Natural disasters: The impairment of a municipality’s budget (reduction in revenue and increase in costs) may be the result of a natural disaster such as a hurricane.
9. **In a revenue bond, what is a catastrophe call provision?**

For revenue bonds there is often a catastrophe call provision that requires the issuer to call the entire issue if the facility that generates the revenue supporting the bond is destroyed.

1. **What is the tax risk associated with investing in a municipal bond?**

The investor in municipal securities is exposed to the same risks affecting corporate bonds plus an additional one that may be labeled tax risk. There are two types of tax risk to which
tax-exempt municipal securities buyers are exposed.

The first is the risk that the federal income tax rate will be reduced. The higher the marginal tax rate, then the greater the value of the tax exemption feature. As the marginal tax rate declines, the price of a tax-exempt municipal security will decline.

The second type of tax risk is that a municipal bond issued as a tax-exempt issue may eventually be declared to be taxable by the Internal Revenue Service. This may occur because many municipal revenue bonds have elaborate security structures that could be subject to future adverse congressional action and IRS interpretation. A loss of the tax exemption feature will cause the municipal bond to decline in value in order to provide a yield comparable to similar taxable bonds.

1. **Answer the below questions.**
2. **What is the equivalent taxable yield for an investor facing a 40% marginal tax rate, and who can purchase a tax-exempt municipal bond with a yield of 7.2?**

A common yield measure used to compare the yield on a tax-exempt municipal bond with a comparable taxable bond is the equivalent taxable yield. The equivalent taxable yield is computed as follows:

Equivalent taxable yield = .

In our problem, we assume that an investor in the 40% marginal tax bracket is considering the acquisition of a tax-exempt municipal bond that offers a yield of 7.2%. Inserting our values into our equation gives:

Equivalent taxable yield = = 0.1200 = 12.00%.

1. **What are the limitations of using the equivalent taxable yield as a measure of relative value of a tax-exempt bond versus a taxable bond?**

When computing the equivalent taxable yield, the traditionally computed yield to maturity is not the tax-exempt yield if the issue is selling at a discount because only the coupon interest is exempt from federal income taxes. Instead, the yield to maturity after an assumed tax rate on the capital gain is computed and used in the numerator of the formula that computes the equivalent taxable yield. Also, as described below, one must realize that the effects of other taxes can also pose problems when comparing tax-exempt bonds versus taxable bonds.

Because of the tax-exempt feature of municipal bonds, the yield on municipal bonds is less than that on Treasuries with the same maturity.

Bonds of municipal issuers located in certain states yield considerably less than issues of identical credit quality that come from other states that trade in the general market.

One reason for this is that states often exempt interest from in-state issues from state and local personal income taxes, whereas interest from out-of-state issues is generally not exempt.

Consequently, in states with high income taxes, such as New York and California, strong investor demand for in-state issues will reduce their yields relative to bonds of issuers located in states where state and local income taxes are not important considerations
(e.g., Florida).

1. **What is the yield ratio and why ~~is~~ was it typically less than 1?**

Yield ratio = 

Because of the tax-exempt feature of municipal bonds, the yield on municipal bonds should be less than similar credit bonds and liquidity bonds and at some points in time, less than that on Treasuries.

See the FRED Muni Rates spreadsheet on the course website.

Thus, we should typically get a number less than on

1. **Answer the below questions.**
2. **What is a Build America Bond?**

In 2008 state and local governments and their agencies faced financial difficulties. To provide assistance to these municipal entities, the American Recovery and Investment Act of 2009 authorized the issuance of a new type of taxable municipal bond, *Build America Bonds* (dubbed BABs). A BAB is a taxable municipal bond wherein the issuer is subsidized by the federal government for the higher cost of issuing a taxable bond rather than a tax-exempt bond.

This allowed municipalities to continue planned financing and initiate new projects in order to stimulate employment.

1. **What is the current status of the federal government program authorizing the issuance of such bonds?**

From the time of the program's inception in April 2009, through the end of the program at the end of 2010, a total of $181 billion of Build America Bonds were issued. Under this program, the payment made by the federal government to the issuer is equal to 35% of the interest payments. Issuance of BABs significantly increased the size of the taxable sector of the municipal bond market during its operations in 2009 and 2010. Although the program has been terminated, there is considerable supply of BABs outstanding. There have been various proposals in Congress to reinstitute this program.

Extra Question:

1. **What is a serial bond issue? Why is a serial bond issue used as opposed to an amortizing bond?**

Municipal bonds are often issued with a serial maturity structure. This means that a portion of the total amount borrowed will mature and be retired each year. This type of structure is often used to finance assets that are consumed (house, personal cars…) as opposed to assets that generate revenue (factories, trucks…). The total maturity of the issue is timed to coincide with useful life of the asset.

For example a school district needs $60 million to build a new school. It would then issue 30 $2 million bonds with the first bond maturing in one year, the second in two years and so on until year 30 when the final $2 million bond matures, the total $60 million is paid off and the useful life of the building has ended.

Buyers of municipal bonds prefer “bullet maturity” bonds to self-amortizing bonds. Bond portfolio managers are invested in bonds and usually disperse the coupon income. But the principal remains invested in bonds. If a portion of the principal is return each period, then the manager would have to reinvest small amounts more frequently than with a bullet maturity.