Essay on options, derivatives, and international financial management

Business, Company

Question 1

Beta is a measure of a project's risk relative to the entire market . There are several factors that determine the value of beta of a project when it is calculated from domestic stock index against the world stock index. They include; financial leverage, operating leverage and the nature of the project .

Financial leverage is the amount of debt in a firm's capital structure. Payment of interest on debt is a contractual obligation and is fixed. Fixed financing costs cause profits after tax of a project to vary with changes in sales and earnings before interest and tax. Financial leverage increases a project financial risk. Therefore, the higher the financial leverage the higher the beta of the project would be .

Operating leverage is the amount of fixed costs in a project. Whereas variable costs change in relation to sales, fixed costs are unaffected by changes in sales. Changes in earnings before interest and tax (EBIT) are caused by changes in sales which are brought about by fixed costs. The degree of operating leverage is the change in earnings before interest and tax caused by a change in gross revenue. Operating leverage causes cyclicality on projects returns. Projects with higher operating leverage tend to be more risky. Therefore, the higher the operating leverage the higher the beta of the project would be .

Nature of the project; All economies in the world go through business cycles. Projects react differently to business cycles. The earnings of some projects have higher fluctuation than those of other projects. A project that is highly

sensitive to business conditions is more risky. It will therefore have a higher beta value.

Question 2

Risk free rate is the hypothetical rate of return an investor expects in a risk free investment. Risk free investments are investments with zero or no risk. Risk free interest rate has a direct proportional relationship with the price of a call option. An increase in the risk free rate of return reduces the prices of common stocks. This results in an increase in the price of a call option. Increase in risk free interest rates will motivate investors to invest in risk free assets such as government bonds and buy call options to minimize losses in risky investments such as common stock. In case an investor decides to acquire the underlying security instead of the call option, the financial cost measured by the opportunity cost, would increase with increases in the risk free rate of return. Therefore, investors would prefer a call option over purchasing the underlying security because the cost of the premium would be the only cash outflow .

Writers of options will be aware of investors' reaction to increases in risk free rate of return and therefore charge a higher premium thereby increasing the price of a call option. The increase in price of call option will also be motivated by increased demand for call options. An increase in demand without a corresponding increase in supply will result in an upward pressure on the price of calls. Therefore, an increase in the risk free interest rate will result in an increase in the price of a call option .

Question 3

Warrant is similar to an option in the sense that they both confer to the holders a right to sell or purchase an underlying security at any time before expiration in the case of American style or on expiration in the case of European style. There are however fundamental differences in terms of pricing .

Warrants are a type of over the counter derivative. Warrants are issued and guaranteed by financial institutions on behalf of companies. They are therefore not exchange traded. They can be customized by corporations to suit their needs. Most companies issue warranties to hedge against reduction in the value of the company. Therefore, the issuer company benefits irrespective of whether the investors exercises his right or not. They are contractual agreements between investors and the issuer company. The issuer company is therefore the market maker in this case and determines the price of the warranty. Warrants tend to have a lower risk since they are guaranteed by the issuing financial institution. They therefore have a lower value compared to options .

On the other hand, options are contracts between investors. Options are not issued by companies. Companies do not directly benefit from options. It is the investor who benefits if the option appreciates in value. Options are freely traded in the open market. Investors are the market makers. Prices of options are therefore determined by forces of demand and supply in the open market. Options tend to have a higher risk than warrants since they are not guaranteed. They therefore tend to have a higher value than warrants .

Question 4

Multinational corporations (MNCs) are corporations that produce and deliver goods and services in several countries. Managers in multinational corporations are faced with certain issues that a manager in a purely domestic firm is not faced with. They include; transaction risk, political risk and, translation and economic risk .

Transaction risk is the risk that cash flows would vary from the expected due to exposure to exchange rate fluctuations in the currency market. All firms are faced with exchange rate risk even if it operates solely in one country. However, multinational corporations are more exposed to transaction risk since they have very high proportion of cross border transactions. Multinational corporations therefore deal with numerous currencies resulting in uncertainties in their cash flows. Transaction risk cannot be eliminated but multinational corporations can hedge using financial contracts to reduce the uncertainty in cash flows.

Political risk can be defines as actions and policies adopted by a government that negatively impact on foreign corporations' value in the country it is operating. Political risk could also be caused by political changes or political revolutions. Multinational corporations are faced with political risk since they operate in several countries.

Translation risk refers to complexities of operating internationally with subsidiaries or affiliates in foreign countries. These complications are caused by translating revenues and costs denominated in different foreign currencies to report in the group's financial reports which is denominated in their home currency. Multinational corporations reduce exposure to

translation risks by matching costs and revenues in one currency and by using sophisticated currency derivatives .

Exercise

Question 1

A rise in the value of euro will make French wine more expensive to consumers in the United States. This will result in a decrease in the sales volume of wine in the United States market. On the other hand, it will make importing United States semi conductors for a German firm cheaper. This would result in an increase in the sales volume of the German firm holding other factors constant.

Firms and individuals engaged in the export and import business have to enter the foreign exchange market in order to settle bills denominated in foreign currency and convert revenues in foreign currencies to domestic currency. In this case the US consumers of French wine will have to convert dollars to euros to purchase the wine while the German firm intending to import semiconductors from the United States will have to convert euros to dollars.

An increase in the value of the euro implies the US consumers of French wine will need more dollars to convert to euros hence the French wine will be expensive to US consumers. The law of demand states that price and demand have an inverse relationship. Therefore, a rise in the value of euro would result in a decline in the sales volume of wine in United States. On the other hand, the German firm will require less euros to convert to dollars

hence the semi conductors will be cheaper. Therefore, if the law of demand holds, the sales volume of the German firm will increase.

Question 2

Debt holders will prefer project A that has a guaranteed payoff of 200 million dollars over project B. Debt holders are risk averse and would therefore prefer a project that guarantees them of their return . If the firm invests in project A, debt holders are sure of being compensated since the return of 200 million dollars is sufficient to compensate them. If the firm invests in project B, there is a 50 per cent chance that they will not be paid when the payoff is zero. On the other hand, if the returns for project B is $400 million, debt holders will not benefit from the extra income since their return is limited to the contractual interest rate. Investment in project B represents higher risks to debt holders yet they will not be compensated for taking higher risks.

Shareholders would prefer project B which has a 50 per cent chance of having a payoff of $400 million and a 50% chance of having a zero payoff over project A. Shareholders are risk takers and would prefer a risky project that guarantees them higher returns . If the firm invests in project A, shareholders will not have any return on their investment since the return on project A is just enough to compensate debt holders. However, investing in project B represents a 50 per cent chance of receiving some return. If the return of project B is $400 million dollars then shareholders will be entitled to $200 million dollars that is the net income after compensating debt holders. Shareholders would therefore prefer project B over project A.

Question 3

The law of one price states that goods that are similar should be sold at the same price in one currency irrespective of where it is bought. This law exists because of arbitrage opportunities for arbitrageurs. If the price of a commodity, an asset or a security was different between two markets, then arbitrageurs will buy the assets in the low priced market and sell in the high priced market to make arbitrage profits. This will persist until prices in the different markets converge at some point.

The law of one price can be used to explain the changes in currency value and inflation. If prices of goods in one country are increasing faster than prices of goods in another country, then the value of the currency in that country with higher inflation will fall. If this does not happen, then goods in the country with high inflation will became more expensive than goods in the country with a lower inflation rate when they are converted to a common currency. With the motive of arbitrage profits, arbitrageurs will purchase the goods in the country with a low inflation rate and sell it in the country with a higher inflation rate. Increased flow of imports implies that there will be a higher demand for foreign currency than domestic currency in the country with a higher inflation rate. This will result in a decline in the value of currency in the country of higher inflation. Therefore, there is an inverse relationship between the value of a currency and inflation

Question 4

Political risk can be defined as actions and policies adopted by host governments that negatively impact on foreign corporations’ value in the

country they are operating. There are two types of political risks that would require different mitigation strategies to minimize losses .

Macro political risk occurs when all foreign firms in a given country are affected which could be due to political change, political revolution or the host government adopting new policies. For example, policies aimed at promoting local companies and businesses are likely to adversely affect all foreign firms. Macro political risk in developing countries can be minimized by multinational corporations by choosing politically stable countries to invest in to minimize financial losses due to political upheavals. Foreign firms can lease equipment instead of buying to minimize financial losses in case of political upheaval. Multinational corporations can also collectively threaten to withdraw investments if favourable policies are not put in place .

Micro political risk occurs when the host government imposes punitive measures targeting a particular firm. Micro political risk in developing countries can be minimised by including clauses in agreements entered into with the host government that makes it difficult to breach the original agreement. Foreign firms can partner with host citizens by selling shares of local subsidiary to local citizens. Multinational corporations can also take trade disputes with the host government to the World Trade Organization. Lastly, multinational corporations could minimize micro political risk by being proactive in developing labor and environmental standards in the host country to attract goodwill of the host country.

References

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