Group 1
True/False/Uncertain

Indicate whether the statements below are true or false, and explain your answer in a maximum of three to four sentences.

1- In a recent survey on capital budgeting practices, CEOs of small firms frequently avoided using NPV because it cannot account for volatility of cash flows early on in the life cycle of the project. These firms must be right. **[10 points]**

False: NPV can account for volatility of cash flows by adjusting the discount rates for example.

2- Managers cannot justify the use of Project Finance relative to internal financing, by relaxing Modigliani and Miller assumptions. Project Finance is simply a way to have off balance sheet operations. **[10 points]**

False: Under the MM assumptions project finance cannot create value, by relaxing these assumptions one can compare project finance to internal finance. As we discussed in Petrozuata and Iridium cases, transactions costs tend to be higher under Project Finance, but there may exist lower costs of financial distress or lower agency problems (reduced Free Cash Flow problem), for example.

3- According to Fama and French dividends are “disappearing”. This is not surprising since dividend policy cannot have an impact on firm value or stock prices. **[10 points]**

False. Despite the fact that the share of dividend paying firms was declining until 2000, this does not imply that dividends cannot impact stock prices. One way they may influence stock prices and as such firm value is by acting as a signal about the future prospects of the firm. Other answers identifying MM violations are possible (e.g., taxes, cash management for precautionary motives, etc).

4- The analysis of the case Petrozuata shows that project finance always increases the success of projects while fully protecting the sponsors for downside risk. That is why this financial structure has gained so much popularity. **[10 points]**

False. Despite being a very well-crafted project finance deal that set records in terms of credit ratings, credit spreads, and maturities of issues, some of the underlying risks of the project did not disappear. Completion risk, oil price risk, and political risk all turn out to be very important and had an impact in the value of the project.

5- The case of L'Occitane shows how listing a company in an exchange different from the country of origin of the firm is a bad idea. The reason is that foreign listings unnecessarily expose investors to the local regional risks of the place where the exchange is located, while bringing no benefits for the firm. **[10 points]**

False. While it is true that traditionally firms listed in their home country, there might exist advantages to listing abroad. Some of the advantages may have to do with signalling and commitment to strict disclosure and governance rules. In the specific case of L'Occitane, which decided to list its shares in Asia, another advantage was the potential use of equity as a currency for acquisitions in that region.

Group 2
Payout Policy

BP has announced it will sell \$10bn (£6bn) of assets in the next two years to fund returns to shareholders, as it continues to shrink in the wake of 2010's disastrous Gulf blowout.

The oil company has already sold \$38bn of assets to pay for the damage caused by the accident at the Macondo well in the Gulf of Mexico, which killed 11 men and became the largest environmental disaster in US history. However, the proceeds from the next \$10bn sale are mostly destined for shareholders. (…) BP announced it was increasing its dividend by 5.6% to 9.5 cents a share.

The announcement came as BP said its underlying replacement cost profit – its preferred profit measure, which strips out the effect of oil price fluctuations – was \$3.7bn (£2.3bn) for June to September, down from \$5bn for the same period last year.

BP said that production for the first nine months of 2013 was 3% higher than last year. It blamed the fall in profits on weaker refining margins, selling off refineries and reduced income from its lucrative Russian business.

In March, BP sold its half of Russian firm TNK-BP to Russian state oil firm Rosneft, bringing the curtain down on a fraught but highly profitable deal with a quartet of Russian oligarchs. In return, BP picked up more shares in Rosneft, gaining a 20% stake in the world's biggest oil producer.

With the US district court in New Orleans expected to rule early next year on the fine BP must pay under the Clean Water Act, the company faces billions in compensation costs.

BP has already set aside \$42.5bn for cleanup costs, fines and compensation related to the spill.

BP and its partners face fines of as much as \$1,100 for each barrel of oil released into the Gulf if they are found negligent in their actions while drilling the well and in limiting the effects of the accident. Those fines could rise to \$4,300 a barrel if the responsible parties are found to have acted with gross negligence or "wilful misconduct". The US government has told the court that about 4.9m barrels escaped into the sea; BP claims 3.26m barrels were spilt.

As the second phase of the trial ended earlier this month, Louisiana's coastal protection authority reported a surge in oil washing up on its beaches this year. More than 3m tonnes of "oily material" were cleaned up in the first eight months of this year, a 20-fold increase on last year.

Source: Adapted from The Guardian, October 29, 2013.

1) At this stage and according to the article, what are the main sources of uncertainty that BP shareholders face? **[5 points]**

BP faces several risks, for example: oil price risk and operational risk. But the article emphasis litigation risk and the associated compensation due to the recent oil spill.

2) Suppose that the management team of BP has no superior information than outside shareholders regarding those risks and how they may impact future cash flows. What would be the expected stock price reaction to the dividend announcement? Why? **[15 points]**

If the management has no superior information relative to shareholders there is no expected upward or downward movement in the stock price. In this scenario there is no signal being transmitted by the management about the future prospects of the firm.

3) How would your answer to part 2) change if the management did have better information than outside shareholders regarding the future cash flows of the firm? Please explain. **[15 points]**

If the management has superior information relative to shareholders then the actions of the management may transmit signals to outside shareholders. In this case, given the type of uncertainty that BP is facing, it could signal to shareholders that there is no more need to keep as much cash inside the firm because the expected fine the court will order regarding the oil spill case is low relative to the cash reserves the firm had. In that sense, this dividend payment would be good news for the firm and, as such, we would expect a positive price reaction.

Generally this is the situation we tend to consider as being the most likely: the case where the insiders have superior information about the firm's prospects relative to outsiders.

4) How would your answer to 2) change if the outside shareholders had better information than the management of BP about the future cash flows than the management? Please explain. **[15 points]**

If outside shareholders have superior information, then there is again no signalling effect, since the management has no superior information to signal. However, depending on the shareholders view of the need for cash of the firm, they may interpret this policy as good or bad.
For example if they believe the firm will need cash in the future, they may see a dividend payment as the wrong financial policy.

Group 3
Diversifying Acquisition

You are the CEO of Dig Deep Mining, a 25-year old mining company. Your main competitor is Disastrous Mining, a company whose mining operations are very similar to yours but which has diversified into the sticky note business. You are considering an investment in a project to manufacture and sell sticky notes. The investment will cost $1 billion and will generate after-tax cash flows of $200 million in perpetuity. Another key player is Post-It, a company that specializes in manufacturing and selling the kind of notes you are considering making.

You are given the following additional information:

- Risk-free rate = 3.0%
- Market risk premium = 7.4%
- Disastrous Mining: $\beta E = 0.9$, $(D/E) = 0$
- Post-It $\beta E = 2.0$, $\beta D = 0.4$, $(D/E) = 0.3$
- Disastrous Mining has currently no debt, but has historically maintained a fixed debt to value ratio of 20%.
- Post-It has historically maintained a fixed dollar amount of debt
- Corporate tax rate = 35%

1. Suppose that the investment were 100% equity financed. What discount rate would you use to discount the cash flows from the project? **[10 points]**

First, we should note that we will use Post-It as a comparable company. Now, we will need to unlever the βE of Post-It to get βA of Post-It. Since Post-It has used a "fixed amount of debt", we should use the modified method to lever and unlever.

Now, also note that $D/E = 0.3$ implies that $D*(1-tc)/(D*(1-tc)+E) = 0.163$ and $E/(D*(1-tc)+E) = 0.837$. Then, using the modified formula for asset beta (with fixed amount of debt).

$\beta A(\text{Post-It}) = 0.163 * \beta D(\text{Post-It}) + 0.837 * \beta E(\text{Post-It}) = 0.163*0.4 + 0.837*2 = 1.74$

Therefore, $rA = rf + \beta A(\text{Post-It})*(rm - rf) = 0.03 + 1.74*0.074 = 15.88\%$

2. Instead of using 100% equity finance, Dig Deep is considering financing the project with \$1 billion of fixed perpetual debt issued at 5%. What is the net present value of the project under this financing scheme? **[10 points]**

Use APV – the debt schedule is given, so easy to add on the value of PV[DTS] to NPV of all equity firm.

NPV(100% equity) = –\$1000M + (\$200M/rA) = –\$1000M + (\$200M/(15.88%)) = \$259.4M

*If valuing DTS with rD use: PV[DTS] = \$1000M*0.35*rD/rD = \$350M*
*If valuing DTS with rA use: PV[DTS] = \$1000M*0.35*rD/rA = \$110M*

APV (with DTS at rD) = \$259.4M + \$350M = \$609.4M
APV (with DTS at rA) = \$259.4M + \$110M = \$369.4M

3. Suppose that instead of using 100% equity finance or \$1 billion of debt in perpetuity, Dig Deep will have a stable target debt-to-equity (D/E) ratio of 0.5 after undertaking the project. Assume that the βD for Dig Deep is 0.2 and that Dig Deep will be able to issue debt at rD = 4.5% for the project. Compute the WACC that should be used to discount the cash flows from the project. Compute the NPV of the project using the WACC. **[10 points]**

First note that D/E = 0.5 implies that D/(D+E) = 0.33. We know that rD for WACC is 5.

*WACC = (E/D+E)*rE + (D/D+E) * rD * (1-t) = (0.67)* rE + (0.33)* 0.045 * 0.65*

Also note, rE = rf + βE(rm – rf)*

To get βE we have to relever the βA from above. Since Dig Deep will have a stable D/E ratio, we can use Method 1 outlined in the class to lever and unlever:

βE = βA + (D/E)(βA – βD) = 1.74 + 0.5*(1.74 – 0.2) = 1.74 + 0.5*(1.54) = 2.51*

rE = 0.03 + 2.51(0.074) = 21.57%*

*WACC = 0.67*21.57% + (0.33*0.65)*4.5% = 15.42%*

WACC Value = -\$1000M + (\$200M/0.1542) = \$297.01.

Group 4
Gas Exploration in Russia

On May 25, 2011 a fundraising deal totaling EUR 1.1 billion was financially closed for the Yuzhno-Russkoye oil, gas and condensate field development project owing to the long-term joint efforts of Severneftegazprom and its shareholders – Gazprom, BASF SE and E.ON AG. The loan was issued by an international consortium comprising 14 foreign and one Russian bank (Gazprombank). The loan maturity date is set for December 31, 2018 with an early repayment option.

In 2007 the project fundraising for Severneftegazprom's activity was defined as the financing priority by the Shareholders Agreement. At the preparatory stage the foreign banks issued short-term multi-currency loans to the company against the shareholders' guarantees. The closed deal is unique not only by raising the loan directly from the foreign financial markets, but also by the fact that financing was obtained by the company registered in Russia and receiving proceeds in rubles under the gas supply contracts regulated by the Russian legislation.

According to Alexander Medvedev, Deputy Chairman of the Gazprom Management Committee and Chairman of the Severneftegazprom Board of Directors, “Successful project fundraising is far beyond a mere internal event of Severneftegazprom. This is not just a paramount, I would say historical, milestone in the company's evolution, but also a result of successful joint efforts taken by Gazprom and its partners – subsidiary companies of BASF SE and E.ON AG. Gazprom opens new prospects for the efficient large-scale infrastructural projects implementation while their fundraising can be arranged using the experience gained by Severneftegazprom.”

Stanislav Tsygankov, Director General of Severneftegazprom noted that, “Severneftegazprom became the first producing company of Gazprom that managed to raise credit resources in the foreign capital markets on the basis of the project fundraising principles. I am sure that the successful deal closing is a positive experience for Severneftegazprom development as a leading company adhering to international standards.”

Background

Severneftegazprom is a gas producing company of Gazprom Group. The company holds the license for hydrocarbons development, exploitation and production in the Yuzhno-Russkoye oil and gas field located in the Krasnoselkupsky District of the Yamal-Nenets Autonomous Okrug, Tyumen Oblast. ABC1+C2 natural gas reserves of the field exceed 1 trillion cubic meters. In October 2007 the field was put into commercial operation. In August 2009 the Yuzhno-Russkoye field reached its design capacity of 25 billion cubic meters per year one year ahead of the schedule.

Severneftegazprom has the following shareholding structure: Gazprom holds 50 per cent plus six ordinary registered shares, BASF SE holds 25 per cent less three ordinary registered shares plus three preference non-voting shares, E.ON AG holds 25 per cent less three ordinary registered shares plus three preference non-voting shares.

Source: Gazprom.com

1- This project was funded using project finance. Please point out what you believe are the main advantages of using project finance instead of corporate finance in this case. **[10 points]**

There are several possible answers here. As we saw in the Petrozuata case, a potentially important source of value resulting from the use of project finance is the reduction in Agency Problems – due to the use of high levels of leverage, large amount of bank debt and cash waterfalls.

2- If you were one of the sponsors of the project not based in Russia – BASF and E.ON (both headquartered in Germany) – what would be your three main concerns related to this investment? **[10 points]**

Similarly to Petrozuata the biggest risks of this project would be related to the volatility of the price of the output (oil and gas) and to the political instability of the region and potential future expropriation.

3- What type of adjustments would you do to your valuation model if you wanted to adjust the cash flows in order to take these risks into account? **[15 points]**

If we wanted to adjust the cash flows we could do one of two things:

- *If we knew the probability of expropriation and loss upon expropriation we could directly adjust the expected cash flows by taking this into account.*
- *We could use the insurance premium that we would have to pay if we were to buy political risk insurance for this project.*

4- What type of adjustments would you do to your valuation model if you wanted to adjust the discount rate in order to take these risks into account? **[15 points]**

If we were to adjust the discount rate, there are many ways we could proceed. In class we did several adjustments:

- *Country Spread (difference between the yields of Russian and US Treasury bonds)*
- *Country Beta*

$R = rf + \text{country spread} + \beta\text{project} \times \beta\text{country} \times (1-0.4) \times (\text{risk premium})$