Tutor-Marked Assignment 2

The Shanghai Project Assignment Brief

Unit: Study Unit 2 – Treasury Applications

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1 Assignment brief

Before starting work on this Assignment Brief, please make sure you read and familiarise yourself with the contents of the TMA Assignment Guide. This includes **important information** on word length, submission procedures and deadlines, referencing, plagiarism, and marking, feedback and assessment.

In this assignment, which is based on a real-life project, we will practise a range of skills covered in Study Unit 2. This TMA will also provide a methodology for tackling the range of treasury issues surrounding a commercial project that you will be able to take away with you, to refine, develop and apply throughout your career. The subject of this TMA is one you will often be presented with in real-life; a commercial case prepared by more or less well informed operating unit personnel where you have to translate the proposal into a bankable proposition. This will include not only proposals for a funding structure, but also outline terms including covenants, an estimate of other facilities that might be required, control proposals, and a detailed assessment of the risks involved and their mitigation. It is in this process that you can really add value as treasurers – translating the business proposal into an efficiently funded and securely structured operating unit.

Some of the requirements have a clear 'right' answer, and some are less clear cut. As professionals, one of the things you have to become comfortable with is uncertainty, but please be reassured, whilst there is sometimes more data than you require, there are no deliberate traps or tricks. What we want is for you to make your best effort as professionals, to use your judgement and to apply what you have learnt together with your own personal experience and background research. Where you perceive uncertainty, choose your sources wisely, quote your sources, and state your assumptions. If necessary, an answer may be set out as a range or a set of alternatives, but do not sit on the fence when you can clearly identify and justify a preference.

Style

You should answer the questions below in a **report** format. You should present your findings in a professional way in a format which is easy to read and well presented. Consider who your report is for and why you have been asked to write it. You should submit one MS Word report including any narrative appendices, an MS Excel spreadsheet for any quantitative appendices, plus an MS Excel spreadsheet of the revised model to support your answer to Part 4.

Word Limit

The word length for TMA2 is 4,500 words and we allow you to vary this by +/- 10%. You should not exceed this allowance. See the Assignment Guide for more information.

Marks

Total Marks Parts 1-5	94
Marks awarded for style and format of report, for appropriateness of language for audience.	3
Correct referencing and use of resources to support argument/statements.	3
TOTAL	100

2 Background information

For the purpose of the assignment, you are the Assistant Group Treasurer of an international natural resource development company, International Mining and Minerals Pty (IMM), whose reporting currency is the US Dollar.

Your company is a leading player in an international consortium bidding for the concession to build and operate a major mineral processing plant in the Shanghai conurbation. The plant will be devoted to processing raw material imported from either your primary production units in Australia or from an alternative supplier but subject to minimum volumes bought from IMM. The overall project will be located in a Joint Venture (JV) vehicle, Alpha China Limited (ACL), whose functional currency is the Chinese Yuan (CNY). This will be the first major project finance deal for IMM.

In order to submit the bid, IMM knows that its proposal has to be deliverable. Apart from evaluating the commercial and corporate finance positions, this also entails making sure that the project can be financed, and that all issues that might affect the price and terms for the bid are identified up front.

Commercially, the project meets IMM's strategic objectives of growing extraction and processing of minerals, and it pays back inside ten years. You have details of the capital expenditure, operating costs, pricing, production volumes and macro-economic assumptions, as well as the proposed ownership structure of the joint-venture company. Capital costs are drafted as a 25:75 mix of local currency and US Dollar costs, while revenues are in local currency.

Your role

You are a member of the corporate development team, which is reviewing the feasibility of the project before IMM makes its formal bid. Within the team, you have two main responsibilities:

i) to review the project model and comment on the viability of the project; and
ii) to identify any treasury issues and propose the complete funding, control and risk management package for the project.

Approach

Once you are familiar with the background, you will tackle the problem in five parts:

1. Review the project model and comment on the viability of the project.
2. Review the Treasury Evaluation outputs and propose possible lenders' covenants.
3. Use scenario and sensitivity analysis to identify the major risks to the project, and propose means to mitigate them.
4. Propose the complete funding package for the JV
5. Propose an appropriate treasury control structure for the JV.

This is a substantial ask – but treasurers do it all the time and, as with TMA1, you will find that the issues will become evident as you progress through the project.

Preparation
Before getting started, make sure you have read the document The Shanghai Project Background Information including the appropriate sections of the background material and that you are familiar with the project structure and the Chinese and global environment.

You are also provided with an MS Excel spreadsheet called Shanghai Project Evaluation January 2017 where you will find three worksheets. The *Evaluation* worksheet holds inputs which can be flexed, some accounting workings and outputs. The inputs on the Evaluation worksheet link to the appropriate cells on the Ungeared DCF and Geared DCF worksheets. The *Ungeared DCF* and *Geared DCF* worksheets are two corporate finance evaluations. These two sheets are driven almost entirely (except for volumes) by inputs on the Evaluation worksheet.

You need to have an appreciation of how the project evaluation spreadsheets work. Identify the key inputs in the spreadsheets - prices, volumes, timings, market rates, inflation etc. which are shown coloured brown in the Inputs section of the Evaluation tab. By adjusting these inputs, you should be able to assess the impact on the model, particularly on the Corporate Finance Evaluation, highlighted in fluorescent blue on the Evaluation tab. Note that it is not necessary to fully understand the model workings, although the more familiar you are with the model, the better you will be able to understand what it is outputting and why. As far as spreadsheet skills go, what you really need is a clear head, the application of logic, and an understanding of how the financials interact. The number of specialist Excel functions is minimal.

As in any commercial project, the model will have its limitations and may even contain errors. In particular it may fail to generate sensible results when the key inputs are at extreme levels. As in the real world you have to decide how you overcome these.

3 Questions

PART 1 Project and model evaluation
Total 22 Marks

a) Why does the analysis look at three evaluations: ungeared, geared and shareholder? What are the differences between the approaches? Which in your opinion is the most important? *4 marks*

   Student Notes: Remember that you are looking at this primarily from IMM's perspective. You should consider *what* the model sets out to achieve and *why*. A summary of the three results is on the Evaluation worksheet headed Corporate Finance Evaluation (highlighted in fluorescent blue). Do not consider the discount factors at this stage.

b) The project is being evaluated against IMM's global DCF criteria as set out in the background material. As a company with global ambitions IMM evaluates all its projects in US Dollars. As most projects within IMM's business are of a long term nature, IMM favours real terms data because it makes year-on-year comparison easier. IMM's global DCF criteria are used as benchmarks for all IMM projects, but the corporate finance

team is not sure whether or not this is "best practice". What discount rates, if any, might be more appropriate to the project and why? What effect does it have on the corporate finance evaluation if you use these as your input values? *8 marks*

Student Notes: You are provided with the Corporate Finance Department's WACC and Cost of Equity calculations on the MS Excel spreadsheet **IMM Corporate Finance Hurdle Rates**. For each of the ungeared, geared and shareholder evaluations, what discount rates might be more appropriate for a highly geared joint venture based in China? You will need to develop IMM's Corporate Finance Hurdle Rates model to go beyond the simplistic approach taken by the corporate finance team. Remember that you are trying to calculate real discount rates. It is therefore important to consider what inflation rate to apply to each constituent part of the discount rate and to justify your reasoning. You should also consider the location of the debt and the tax deductibility of interest, making reasonable assumptions if necessary. Having estimated revised discount rates, enter your values into the input section on the Evaluation worksheet in order to see the effect; the relevant cells are bordered in red.

c) Building on your results from part b, consider the impact of varying the project gearing rate on the ungeared evaluation. *4 marks*

Student Notes: Adapt the spreadsheet used in part b above to assist in running the sensitivities for different levels of gearing. You will have to make some assumptions about interest rates at different levels of gearing. We suggest that the following borrowing margins are used:

Project leverage	Margin
50% and below	5%
60%	6.3%
70%	8.3%
80%	10.8%
90%	13.3%

These rates are high when compared to historical experience in project finance but reflect very difficult financing markets and uncertainty around the implications of Basel III during 2016 when this project is under negotiation. Note that these rates would also apply to the RCF in the model and the commitment fee for the RCF is set at 20% of the drawn margin.

As in part (b) you will need to amend the discount rate in the input section of the Evaluation worksheet. You will also need to amend the Initial Gearing assumption and the margin assumptions; the relevant cells are bordered in green. You should also note if there is a requirement for additional finance at any stage and comment on any covenant or regulatory breaches, although at this stage you are not expected to make any further adjustments.

d) In the light of the various corporate finance evaluations of the project based on each of IMM's global hurdle rates and your alternative suggestions discuss the project's viability.

6 marks

Student Notes: Looking at the corporate finance evaluation, what general conclusions can you draw at this stage? In the case of the Shanghai Project, the following approach should be used. Use the ungeared analysis to determine the most favourable gearing level. The geared and shareholder analyses should then be used to determine if the project is viable at this gearing level. Consider what makes the project viable? Is this limited to the NPV calculations? For example, what about IMM's strategic aims? What about other benefits from this project? What about the other shareholders and stakeholders and IMM's relationship with them? Could the NPV be improved by sensible means? Have any income sources been omitted? Is it appropriate to use a discount rate based on initial financing? You might find it helpful to carry out some additional calculations.

Please note that, depending on the discount rates which you use, it is possible that you may NOT have a positive geared or shareholder NPV at this level or indeed you may not have positive values for all three measures at any gearing level.

Please note that whatever you conclude in part 1 regarding the viability of the project, you should assume that the project proceeds for the purposes of parts 2 to 5.

PART 2 Treasury evaluation
Total 17 marks

Before starting Part 2, set the Initial Gearing input value and margin (bordered in green) on the Evaluation worksheet to the values which give you the highest ungeared NPV as in Part 1d. Replace the values for WACC in Cell J21 and the Cost of Equity in Cell J22 (bordered in red) with the appropriate values for the WACC and the cost of equity for this level of gearing. No other values should be changed so, if you're not sure, download a new copy of the spreadsheet and then make the changes. Having changed Initial Gearing and margin, you may also need to amend the shareholder loan amount, drawdown and repayment profile. The inputs for this are in the Evaluation worksheet but ensure that interaction with the bank loan drawdown and equity drawdown is consistent. There should be no need to change anything in the *Ungeared DCF* or *Geared DCF* sheets as they are all formula driven.

a) Comment on the levels of cash anticipated in the JV. What issues does this raise?

5 marks

Student Notes: What are the key drivers which give rise to any cash surplus? How should the cash surplus be safeguarded and best utilised? What implications does a long-term cash balance have for the corporate finance evaluation? What amendments would you recommend for the initial financing assumptions? Consider the amount of finance required, drawdown dates, etc.

b) The banks have indicated that they are not prepared to advance funds beyond the capex plans in the business model, i.e. they will not fund start-up costs or delays. Suggest how you would meet any cash shortfall during the build phase and comment on any issues that might arise. *3 marks*

Student Notes: Set the "% finance flex" to zero on the Evaluation tab of the spreadsheet (ringed in green). Note that a Revolving Credit Facility would probably only be available for drawdown when the plant has been commissioned and is operational and the borrower will probably undertake to only use the RCF for operational requirements. Consider varying the share capital/ shareholder loan mix, drawdown dates, etc.

c) Comment on the proposed revolving credit facility. *3 marks*

Student Notes: Why include a revolving credit facility? Are the term and amount modelled appropriate? Consider the implications for the overall facility amount and security implications.

d) Do the draft financial covenant ratios provide a workable basis for negotiating financial covenants with the project's lenders, assuming that they are assessing the project on the basis of its cash flows? If not, what changes – including more appropriate financial covenants - would you recommend? Explain your reasoning. *6 marks*

Student Notes: The draft financial covenant ratios are shown in bold (with red in-fill) in the treasury evaluation section of the Evaluation worksheet. Comment on how appropriate / useful each draft financial covenant ratio might be. Remember that you are considering this from the JV's viewpoint. In your opinion, do these provide a workable basis for agreeing financial covenants with lenders? If not, what would you suggest? At this stage you are not expected to quantify the financial covenants other than in general terms, i.e. minimum (or maximum as appropriate depending on the ratio) acceptable levels.

PART 3 Risk analysis and mitigation
Total 18 marks

a) Apart from project leverage, what are the biggest financial risks to shareholder value? Comment specifically on foreign exchange risk in the JV, addressing the issues of currency breakdown of debt as well as its transaction exposure. *6 marks*

Student Notes: On the Evaluation worksheet, flex the remaining inputs to see which have the biggest effect on the NPV of the Shareholder Analysis in cell F42. Do any of the input assumptions seem imprudent or unreasonable? Consider what might cause inputs to change, and if one were to change favourably or adversely, what is the implication for other parameters? Similarly, what inputs is the project insensitive to? And what flexibility might these give? In considering FX exposure, what might be the rationale for having any debt in USD? Where might competition be experienced for the JV?

b) What in your opinion are the principal other risks to and opportunities for shareholder value not specifically addressed in the model? *6 marks*

Student Notes: Use the background information to explore risks that may not be reflected in the model; also any additional research you may undertake on China. Bear in mind that IMM will be responsible for the operation of the plant going forward. So consider for example:

- the value of available real options
- the relative strength of the JV partners, and their roles in the project
- the attitude of the Chinese government
- currency & fiscal controls

c) Propose means to mitigate the risks (both financial and non-financial) which in your opinion pose the biggest threats to shareholder returns. *6 marks*

Student Notes: Consider both the construction and operational phases, bearing in mind what credit protections the lenders are likely to request. Look at the causal factors underlying the risks themselves. You should consider changing factors within IMM's control such as gearing or contract terms, or by using hedging or other instruments.

PART 4 Funding
Total 20 marks

a) Prepare and save a revised version of the model which reflects your optimum parameters, the risks you have identified, and any means to mitigate them. Do this by changing the input parameters on the Evaluation worksheet, but ONLY those within your power or IMM's power to change or influence. Thus production volumes, selling price, capex, depreciation and similar variables cannot be changed. The *values in the WACC, Cost of Equity, Initial Gearing and Margin cells on the Evaluation worksheet should be the values used in Part 2. The "% Finance flex" cell (ringed in green) should be set to zero.* Do ensure, however, that the model produces sensible results. Your revised model should aim to improve the Shareholder NPV if possible, but it must comply with regulatory constraints and be within your proposed covenants - which you should model in the section below the draft covenants on the Evaluation tab (coloured in light green). You should submit your project model along with your answers to these questions.

Summarise the changes you have made in your report and quantify the effect of each change on the Shareholder NPV (note: the order in which you make the changes will affect the impact on the Shareholder NPV). You should also note any areas where you believe the assumptions in the model could be improved. (The outputs from the revised model will form the basis of your funding and control recommendations in Parts 4 and 5.) *5 marks*

b) Assume that the Shanghai Project is to proceed on the basis of your revised model created in Part 4a above. Based on your revised model propose IMM's preferred funding package for the JV. In order to present coherently to lenders (and to IMM's Board), you should indicate WHY you are making your proposals, and for IMM's benefit

in the negotiation, what RANGE of outcomes might be acceptable – including pricing where possible. *15 marks*

Student Notes: The background information indicates the initial financing assumptions for the project – you may wish to challenge these. It is up to you to set the priorities, but a concrete proposal is required and this should reflect your earlier conclusions. The overall proposal might include:

- Overall funding split and leverage – shareholder financing and external debt.
- Type of funding e.g. term loan, revolving credit facility, lease finance, capital markets.
- External facility amount, maturity and repayment schedule.
- Ancillary facility requirement – FX, interest, commodity hedging, trade finance, guarantees & indemnities etc.
- Interim funding requirement during the project development phase (based on any negative cash number prior to the equity drawdown anticipated in 2018).
- Financial covenants.
- Other covenants.
- Credit support for external funding package?
- Recourse to shareholders?
- Acceptable / bankable mechanisms for extracting cash back to the shareholders, such as dividends, management charges / royalties and the repayment of any shareholder loans.
- Outline criteria for short-listing external funders.

PART 5 Control and management issues
Total 17 marks
Based on your revised model (saved in Part 4), discuss potential treasury management and control structures for the JV in each of the build and operating phases of the project.

Student Notes: Now you have a plan for financing the project (based on your revised model) and an appreciation of the risks involved and their mitigation, you can build on this in addressing issues of treasury management and control. From IMM Treasury's point of view, what would you want to see in place and why? You should also consider the other stakeholders and shareholders. It's up to you to set the priorities but you might consider:

- Issues to be dealt with in the Joint Venture or Shareholders' Agreement such as shareholder responsibilities and board structure
- Local board composition & authorities
- Powers reserved for the shareholders
- Reporting from the JV. Verification thereof.
- Treasury size, organisation & structure and impact on controls
- Implications for IMM treasury
- Personnel, secondment?
- Scope of policies
- Cash management issues, both within the JV and relative to the shareholders
- Relationship management – lenders, shareholders / partners, tax and legal advisors.