ACCA THE GLOBAL BODY FOR PROFESSIONAL ACCOUNTANTS

INTERNATIONAL PROJECT APPRAISAL

International project appraisal is an integral part of the Paper P4 syllabus, with two questions having been set on this topic under the current examiner (Q2 June 2011 and Q1 December 2011).

The purpose of this series of articles is to assist your preparation for Paper P4 by demonstrating how to attempt exam questions on this area of the syllabus. Coupled with a comprehensive mode of study and revision, you should be ready for whatever the paper may contain. International project appraisal will be a large component of your studies, and I will demonstrate a systematic method of answering a question on this topic for each section of the exam.

In this article, I will demonstrate how to answer a 'Section B' style 25-mark question.

Stable Economy

$ = Home Currency

PENN CO

Penn Co is successful company based in a European country where the local currency is the dollar and inflation has been stable at 5% pa. Income tax is charged on company profits at the rate of 25% and is payable in the same year as the profits are earned.

C. TAX + No time delay

Home Inflation

The company is listed on several major stock exchanges as it has operations all over the globe. Its market capitalisation is $655m. The company has bonds with varying maturities trading at $145m.

Ve

when = ??

Vd

Includes Inflation

The treasury department of the company regularly computes the company's nominal cost of capital and this has been fairly stable at 10%. However, when Penn Co have carried out projects in developing markets it has used a nominal risk-adjusted rate of 12%.

Co WACC

Primary business activity

Penn Co's primary business is construction and laying of train tracks and tramlines. Their main consumers are governments due to Penn Co's position as the market leader. Penn Co has a record of completing long and complex contracts within schedule, as well as conducting its business in an ethical manner.

good for company image.

The CEO of Penn Co recently attended a trade delegation to Africa where he met the prime minister of the fast developing country called Zanadia. The prime minister and his political team provided Penn's CEO with an outline of a contract that the Zanadian government would like to award to Penn Co.

May award to Penn Co?

TRAMLINE PROJECT

FX

Zanadia is situated on the African West coast, with the local currency being the dinar. Although being relatively small when compared to its neighbours, its economy has grown at over 15% pa for the past five years, but this has led to an inflation rate currently running at 30% pa. The democratically elected government has taken full **credit** for this economic prosperity.

good news

cause dinar to devalue

The prime minister is adamant that the performance of the country is a result of trade links he created with European-based multinational corporations (MNCs). He believes that by encouraging investment from these entities in his country, the MNCs will generate substantial returns with minimal risk, as many of the projects are government contracts.

PM taken all credit?

Concern

There has been varied success when European MNCs have invested in Zanadia, with political interference, particularly from the prime minister, being blamed for below par returns. Rumours have been rife that the prime minister has been ordering his government to make ad hoc requests for payments to be made at various times during the contracted period. The government themselves have stated that, on a very rare basis, penalty charges have been levied when companies have not been keeping to schedule.

Risk Issue

Reduce the NPV of the project

Penn's business

The Zanadian government's latest project is to create an environmentally friendly electric tramline network to connect all areas of Enat, which is Zanadian's capital city. The project will ultimately take 20 years to complete. However, the initial contract will be to lay the tramline to connect Enat to the national airport located 23 kilometres away. Providing this is completed to the satisfaction of the Zanadian government, they will extend the contract to allow initial supplier connect the rest of the city.

High Risk associated with time

Trial / Test Project

Risk for Penn Co

Following the recent meeting between the prime minister and the CEO of Penn Co, the prime minister has authorised his government officials to release financial projections to Penn Co to allow it to assess the financial viability of the contract.

NPV CASH FLOWS

FINANCIAL DETAILS

The government will pay a fixed price of dinar 5000m for the initial contact to lay the tramline between Enat and the national airport. This will be paid in stages:

includes local inflation

Time period	%
6 months	10
12 months	20
18 months	40
24 months	30

Columns for NPV

CAPEX

Machinery needs to be purchased in Zanadia at a cost of dinar 1000m at the start of the project. The other costs will be locally incurred labour costs, which are estimated to be 30% of the revenue. All values are given in nominal terms. The government has already purchased sufficient materials from a low cost provider based in the US for the initial 23 kilometres of the tramline. They only require Penn Co to lay and test the tramline.

Incremental outflow.

Quality ?

Not their tramline

The government taxes company profits at 40% and this is to be paid in the year in which the profit is earned. The government has no provision to offset tax allowable depreciation (TAD).

No TAD

No double tax.

The current spot rate Dinar/$ 150 – 175 and this is expected to change in the future based upon the relative inflation rates.

Bid offer — Receipts in dinars

After two years, the prime minister will personally review the work carried out by Penn Co and he expects to extend the contract to complete Enhat's city tramline. The exact terms of this contract extension will be subject to negotiation but the returns are expected to be substantial.

No guarantee for PennCo

Quantify

Requirement

(a) Prepare a financial assessment of the project covering the initial two-year period assuming Penn Co appraises projects by discounting nominal $m cash flows at the appropriate cost of capital. State clearly any assumptions that you make. *(11 marks)*

(b) Explain the main risks and issues faced by Penn Co if it chooses to undertake this project. *(14 marks)*

(25 marks)

The key to a good Paper P4 answer is to have a clear plan when answering the question. Knowing where to start and how to progress through in a smooth and efficient way is vital.

TIME ALLOCATION

The 25-mark question needs to be completed in 45 minutes, allowing 1.8 minutes per mark. A split of 20 minutes for part (a) and 25 minutes for part (b) is a good starting point in terms of allocation, but with students often finding the numerical elements challenging, allowing a minimum of 20 minutes for part (b) will give flexibility.

UNDERSTAND THE REQUIREMENTS

What are you been asked to do? Read the requirements and understand the key words. Match them to your Paper P4 knowledge.

In this case:

(a) Compute a net present value in $m. 'Nominal' cash flows means adjusted for relevant inflation. 'Appropriate' cost of capital – my initial thoughts are either the company's weighted average cost of capital (WACC) or a risk adjusted WACC. I need to list out any assumptions I make.

(b) 'Risks and issues' – I assume I will be able to derive most of these from the main body of the question coupled with the relevant Paper P4 knowledge areas.

WHICH PART TO ATTEMPT FIRST?

From experience, most candidates attempt the question in the order it is set. There are no instructions on the front of the paper that says you *have* to do this. Decide which order you feel most comfortable with, but ensure you make a valid attempt at both parts of the question.

As for me, *I would attempt Part (b) first*. I feel I am more likely to be in control of my time this way. However, I will show my answer in the order the question was set.

THE READ THROUGH

I understand the requirements. Now, I need to digest the details of the question. My approach is a simple one – **read, relate to the requirements and scribble down notes**.

Part (a) – Answer

To address this requirement I need to show a disciplined approach. Let me break this down into stages and explain my thought process for each step.

(1) Dinar cash flows

Description	Now Dinar (m)	6 months Dinar (m)	12 months Dinar (m)	18 months Dinar (m)	24 months Dinar (m)
Revenue		500	1,000	2,000	1,500
Variable cost (30%)		(150)	(300)	(600)	(450)
Taxable cash flows		350	700	1,400	1,050
Taxation @ 40%		(140)	(280)	(560)	(420)
Initial investment	(1,000)				
Project cash flows	(1,000)	210	420	840	630

The points to notes here:

- Columnar layout corresponding with the timing of the cash flows specified in the question.
- Cash flows are in nominal dinars; they have already been adjusted for Zanadian inflation.
- Revenue is dinar 5000m allocated per the percentages specified in the question. I see no reason to show a working for this.
- Variable cost is just 30% of the revenue figures as indicated on the schedule.
- Sub-totalled to show the taxable 'profits'. As there is no TAD in this question, these are equal to the operating cash flows.
- Taxation is a relevant cash flow. On the read through stage, I noted that there was no time delay in the payment of the tax to the Zanadian government.
- Initial investment is a simply copy and paste.
- The total project cash flows show that Penn Co will need to initially buy dinars (sell $s) to make the investment. Subsequently, Penn Co will be receiving dinars that it will covert into $s. Care needs to be taken when choosing/calculating the spot rates.

(2) Spot rates and conversion to $m

Project cash flows	(1,000)	210	420	840	630
Spot rate (W1) Dinar/$	150	196	217	243	269
Free cash flows ($m)	(6.67)	1.07	1.94	3.46	2.34

The question stated that the current spot rate was dinar 150 – 175/$. As Penn Co needs to sell $s initially, the bid rate of dinar 150/$ will apply. As all other cash flows are receipts in dinars, a working is needed to compute the projected offer spot rates via the purchasing power parity theory (PPPT) formula.

		Dinar/$
Now		175
6 months	(175 + 217) / 2	196
12 months	175 x 1.30 / 1.05	217
18 months	(217 + 268) / 2	243

24 months	217 x 1.30 / 1.05	269

The PPPT formula is used to calculate the annual spot rates. The intervening half-year rates are average values.

Finally, many students fail to convert the foreign cash flows into the home currency correctly. Based on my experience, I have seen many answers where confusion has reined supreme, as students are not sure whether to divide or multiply. In this case the project cash flows are in dinars and our spot rates are dinar/$. We divide the dinar cash flows to convert to $m.

(3) Final answer

Description	Now Dinar (m)	6 months Dinar (m)	12 months Dinar (m)	18 months Dinar (m)	24 months Dinar (m)
Revenue		500	1,000	2,000	1,500
Variable cost		(150)	(300)	(600)	(450)
Taxable cash flows		350	700	1,400	1,050
Taxation @ 40%		(140)	(280)	(560)	(420)
Initial investment	(1,000)				
Project cash flows	(1,000)	210	420	840	630
Spot rate (W1) Dinar/$	150	196	217	243	269
Free cash flows ($m)	(6.67)	1.07	1.94	3.46	2.34
Cost of capital (12%)	1.000	0.945	0.893	0.844	0.797
Present values ($m)	(6.67)	1.01	1.73	2.92	1.87
Net present value ($m)			+$0.86m		

Discounting at the risk adjusted WACC of 12% (see assumptions below) should be the easy part. The discount factors for 12 and 24 months can be taken from the tables provided at the back of the exam. Those same tables provide the formula to use to calculate the six-month and 18-month discount factors remembering that r = 0.12 and n = 0.5 and 1.5 respectively.

(4) Assumptions

The requirement invites the students to state any assumptions. Here is a sample of some that could be made:

- The nominal risk adjusted cost of capital of 12% is the appropriate discount rate given that the project is based in a developing country.
- There is no additional taxation to pay in Penn Co's home country on the remitted dinar cash flows.
- Inflation rates in both countries will remain constant at their respective rates for the next two years.
- The PPPT formula provides a materially accurate assessment of the projected spot rates.
- There is no residual value for the machinery after two years, as it will continue in use after this initial period.

Part (b) – Answer

As stated above, students could choose to 'front load' the answer to this requirement. My thought process here is to derive as many relevant points from the information in the scenario that relate to 'risks and issues' and expand on these. The examiner is looking for students to apply their knowledge to the details given in the question. It is these points that will ensure you achieve a sound pass mark for this requirement.

In addition, I will include the relevant factual points that can be found in any of the Paper P4 approved textbooks. They will certainly earn some marks.

RISKS AND ISSUES FACING PENN CO

- Sensitivity analysis – irrespective of the final NPV, the values used to arrive at this number are subject to estimation errors. The ones of particular concern are the cost of capital and predicted spot rates. Penn Co should carry out sensitivity analysis to identify how any changes to these variables affect the NPV.
- Recent history – although many MNCs have invested in Zanadia, this has not always led to success. Penn Co needs to investigate and ascertain a little more detail as to why this has been the case. Blame could lie with both parties to the contract.
- Ad hoc Payments – Penn Co needs to obtain some clarity on this matter. These charges would reduce the NPV of the project and may even change the decision that the company takes. The terms of the contract need to be carefully reviewed to ensure that Penn Co is aware of what the Zanadian government expects.
- Supplier – Penn Co has a reputation for manufacturing as well as laying tramlines. In this case, they will be installing lines purchased from another supplier. There may well be quality and specification issues.
- Prime minister – the prime minister has a lot of influence over this contract. He will 'personally' review the work carried out by Penn Co before deciding to extend the contract. The criteria on which his decision will be made are not specified and may well be highly judgmental.
- 20-year contract – this is a long project and the risks associated with time are very high. The returns are said to be substantial but again not quantified.
- Other issues – there are a number of other issues Penn Co should accrue for:
  – The company would need to be aware of local customs and work practices.
  – The legal and regulatory issues would need to be quantified.
  – If managers would be recruited in Zanadia or sent from Penn Co's home country.
  – The project will not damage Penn Co's business and ethical reputation.

International project appraisal questions are challenging, but far from impossible. Students need to follow a disciplined approach. The format is very similar to when preparing a standard 'home country based' NPV which candidates have practised many times as it is part of both Papers F9 and P4.

For projects based abroad it is about starting with the relevant nominal foreign currency cash flows. The key differences are the computation of the spot rates and conversion of foreign currency cash flows to domestic currency values. Discounting at risk-adjusted rates should not be unexpected given the change in risk levels when investing abroad.

There are certain skills that we have not seen tested above such as royalties, transfer pricing and double taxation. These will be part of my next article when we return to Penn Co and look at another international project it is considering as an investment opportunity.

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