AFM

Week 4 Assignment

AFM Week 4 Assignment Question and Answer

Question

Lynn Plc is an internationally diversified company based in the UK. It is presently considering undertaking a capital investment in a South American country to manufacture computer chips. The project would require immediate capital expenditure on machinery of SA$20m plus SA$5m of working capital. The project has a planning horizon of four years at the end of which the realisable value of the project's non-current assets is estimated to be SA$8m.

The working capital would be recovered at the end of the project's four-year life. The estimated annual revenue from the project is SA$17m, with estimated annual operating cost of SA$6m.

Included in the annual operating cost is £0.5m being the total per year cost of a component used in the assembly of the computer chips. This component will be manufactured in the UK and is to be transferred to the South American country. It is estimated that this will generate a pre-tax contribution of 80% to Lynn plc.

Corporate tax is at the rate of 35% per year in the South American country and 45% per year in the UK. A tax treaty exists between the two countries and foreign tax paid is allowable against any UK tax liability. Taxation is payable one year in arrears and a 25% straight-line writing-down allowance is available on the machinery in both countries.

Lynn plc plans to finance the project with a £6m four-year euro-sterling loan at 8%, with the balance from retained earnings. Issue costs on the euro-sterling loan will be 2% and are tax deductible.

UK-based firms manufacturing computer chips have an equity beta of 1.76 and an average gearing of 40 per cent. Return on risk-less investments in the UK is currently 8% and the equity risk premium is 7.5%. Corporate debt can be assumed to be virtually risk free.

The current £/SA$ spot rate is £0.5000 =SA$1 and the annual rate of inflation is expected to remain at 6.3% and 1.2% in the South American country and the UK respectively throughout the project duration. All cash flows are assumed to be already inflation-adjusted.

Required

a. Calculate **adjusted present value** of the project stating clearly any assumptions made. **(12 marks)**

b. Assuming once the investment has taken place, the government of the South American country imposed a block on the remittance of dividends to the UK, discuss how Lynn plc might try to avoid such a block on remittances. **(3 marks)**

Answer

Lynn plc:

INVESTMENT DECISION:

Base Discount Rate: **Keu**

Data table	**Industry**	**Lynn**
VE	60	
VD	40	
1-t	0.55	
VD*(1-t)	22	
VE+VD*(1-t)	82	
Be	1.76	
Ba	1.287805	1.287805
Rf	8.0%	8.0%
Rm-Rf	7.5%	7.5%
Keu (CAPM)		**18%**

Year	0	1	2	3	4	5
	SA$m	SA$m	SA$m	SA$m	SA$m	SA$m
Annual revenue		17	17	17	17	
Annual operating cost		-6	-6	-6	-6	
Tax allowable depn		-5	-5	-5	-5	
Taxable		6	6	6	6	
Tax @ 35%			-2.1	-2.1	-2.1	-2.1
Tax on sale of asset						-2.8
Add TAD		5	5	5	5	
Initial	-20					
Resale value					8	
Working Capital	-5				5	
Net $ cash flow	-25	11	8.9	8.9	21.9	-4.9
Exchange rate w1	0.500	0.476	0.453	0.431	0.411	0.391
	£	£	£	£	£	£
	-12.50	5.24	4.03	3.84	9.00	-1.92
Additional 10% tax payable			-0.29	-0.27	-0.26	-0.25
Components contribution		0.4	0.4	0.4	0.4	
Full tax on contribution 45%			-0.18	-0.18	-0.18	-0.18
Net cash flow	-12.50	5.64	3.97	3.79	8.96	-2.34
Keu = 18%	1.000	0.847	0.718	0.609	0.516	0.437
PV	-12.50	4.78	2.85	2.31	4.62	-1.02
Base case NPV			**1.03**			

Exchange rates w1						
South American inflation	6.30%					
UK inflation	1.20%					
Spot rate	0.5	0.476	0.453	0.431	0.411	0.391

FINANCING DECISION	**£m**	**£m**
PV of annual tax relief on gross debt: ($t_2 - t_5$)		
Annual tax relief on gross debt: (£6m x 8% x 30%)		0.144
Annuity factor for 4 years @ 8%		3.312
PV factor in year 1 @ 8%		0.926
		0.442
PV of Issue cost:		
Issue cost: £6m x 2%	(0.12)	
PV of tax relief (30% x 0.120) x 0.926	0.033	(0.087)
PV of financing side-effects		**0.355**
Base Case NPV		**1.030**
Adjusted Present Value		**1.385**

APV **£1,385,000 (approximately)**

Exchange rates

Future rate = Spot rate x (1 + Annual rate of inflation in UK)/(1 + Annual rate of inflation in SA)

Year 0			0.500
Year 1	0.500 x (1.012)/1.063)	=	0.476
Year 2	0.476 x (1.012)/1.063)	=	0.453
Year 3	0.453 x (1.012)/1.063)	=	0.431
Year 4	0.431 x (1.012)/1.063)	=	0.411
Year 5	0.411 x (1.012)/1.063)	=	0.391

Additional 10% tax payable:

Year 1	(SA6m*0.476)*10%	=	0.29 payable in year 2
Year 2	(SA6m*0.453)*10%	=	0.27 payable in year 3 etc

(b) Blocked remittances might be avoided by means of:

- (i) Increasing transfer prices paid by the foreign subsidiary to the parent company.
- **(ii)** Lending the equivalent of the dividend to the parent company.
- **(iii)** Making payments to the parent company in the form of royalties, payment for patents, or management fees.
- **(iv)** Charging the subsidiary additional head office overhead
- **(v)** Parallel loans, whereby the subsidiary in the South American country lends cash to the subsidiary of another a company requiring funds in the South American country. In return the parent company would receive the loan of an equivalent amount of cash in the UK from the other subsidiary's parent company. The government of the South American country might try to prevent many of these measures being used.

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