

**Corporate Finance: Final Exam**

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Zegala Inc. is an all-equity funded company that operates in two businesses and derives all of its revenues in the United States.

	Estimated Value (in \$ millions)	Unlevered Beta
Hotels	\$500.00	0.90
Travel Services	\$1,000.00	1.20
<b>Company</b>	<b>\$1,500.00</b>	<b>1.10</b>

The firm is considering borrowing \$1.5 billion and expanding its hotel business into Mexico. The US 10-year T.bond rate is 3%, the Mexican government 10-year peso rate is 8%k the equity risk premium for the US is 5% and the equity risk premium for Mexico is 7.5%. Estimate the **cost of equity in US \$ terms** for the company, after the expansion. (The marginal tax rate is 25%) (4 points)

2. You have been asked to estimate the cost of capital for Lemur Enterprises, a company with a significant debt load, and a depressed stock price. You have the following information:

- The company has a book value of equity of \$1 billion. There are 150 million shares, trading at \$4/share. The unlevered beta of other companies in the same business is 1.20.
- The company has bank loans outstanding of \$1 billion, with 5 years left to maturity and interest expenses of \$40 million a year. The company currently has a CCC bond rating and has a default spread of 7% over the riskfree rate.
- The firm reported a net loss of -\$15 million, but its operating income is expected to be \$32 million next year.
- The risk free rate is 3%, the equity risk premium is 5% and the marginal tax rate for all companies is 25%.

Estimate the cost of capital for the company, for next year.

(4 points)

3. You have been hired by a movie company and asked whether they should invest in a streaming service, and have collected the following information:
- The company will have to spend \$2 billion in acquiring a proprietary streaming product. This investment will be depreciated straight line over five years to a salvage value of zero.
  - You expect to have 25 million subscribers, paying \$100/year, for the next five years and the operating expenses (not including depreciation) of servicing these subscribers to be 60% of revenues.
  - The cost of capital is 8% and the marginal tax rate is 25%.
  - To provide exclusive content on its streaming, the company will have to pull movies that it now shows on Netflix and forfeit \$500 million in licensing fees (pre tax) that it would have received every year for the next five years.

Estimate the net present value of the streaming service, assuming that it will be wound up in five years. (4 points)

4. You work for a Genome Drugs, small biotechnology company that has a 10-year patent for a drug that it plans to license to a larger pharmaceutical company and it has two offers:

- Biogen has offered to pay \$100 million today and \$50 million a year, each year for the next 5 years.
- Merck has offered to pay \$50 million today and share 15% of net income, expected to be \$400 million annually, each year for the next 10 years.

The following table lists financing costs of Pfizer and Merck:

	After-tax cost of debt	Pre-tax cost of debt	Cost of equity	Cost of capital
Biogen	3.75%	5.00%	12.00%	10.00%
Merck	3.00%	4.00%	9.00%	7.50%

Which offer would create more value for you?

(4 points)

5. Marley Inc. is a small, publicly traded music producer, with 20 million shares trading at \$15/share and no debt. The company announces that it will borrow money to move to a debt to capital ratio of 20% and lower its cost of capital to 7.5%. If the stock price jumps to \$15.90 on the announcement, **investors are rational** and there is no growth in the financing cost savings over time, **estimate the beta for the company after the borrowing**. The risk free rate is 3%, the equity risk premium is 5% and the marginal tax rate is 25%. (4 points)

6. Minster Inc. is examining its dividend policy and has provided you with the following information:

	1	2	3
Revenues	\$1,200.00	\$1,400.00	\$1,600.00
Net Income	\$30.00	\$70.00	\$160.00
Total Non-cash WC as % of revenues	12.00%	9.00%	6.00%
Dividend Payout	0.00%	10.00%	20.00%

- The non-cash working capital currently is \$150 million and the company has a cash balance right now of \$50 million.
- In the most recent year, depreciation amounted to \$75 million and capital expenditures were \$125 million. You expect depreciation to grow 10% a year and capital expenditures to increase 8% a year, each year for the next 3 years.

Assuming that the company would like to **double its cash balance** by the end of year 3 and **do a stock buyback** in year 3, estimate how much cash the company will have available for its buyback. (5 points)

7. Justin Enterprises, a **company with a 9% cost of capital**, reported the following numbers in its financial statements for the most recent year:

<i>Income Statement</i>		<i>Balance Sheet</i>			
Revenues	\$500.00	Fixed Assets	500	Debt	200
EBITDA	\$150.00	Non-cash Working Capital	125	Equity	550
DA	\$50.00	Cash	125		
EBIT	\$100.00	Total	750	Total	750
Interest Expense	\$20.00				
EBT	\$80.00				
Taxes	\$20.00				
Net Income	\$60.00				

In the most recent year, the company also reported capital expenditures of \$90 million and an increase in working capital of \$ 10 million. Justin will continue to reinvest at the same rate as it did in the most recent year and generate the same return on invested capital it earned in the most recent year, for the next three years. If after year 3, it becomes a mature firm, growing 3% a year in perpetuity (while maintaining its current return on capital), **estimate the value of the equity today**. (5 points)

Spring 2019

Name:

		NUMBER OF YEARS IN ANNUITY												
		1	2	3	4	5	6	7	8	9	10	15	20	25
DISCOUNT RATE	0%	1.0000	2.0000	3.0000	4.0000	5.0000	6.0000	7.0000	8.0000	9.0000	10.0000	15.0000	20.0000	25.0000
	1%	0.9901	1.9704	2.9410	3.9020	4.8534	5.7955	6.7282	7.6517	8.5660	9.4713	13.8651	18.0456	22.0232
	2%	0.9804	1.9416	2.8839	3.8077	4.7135	5.6014	6.4720	7.3255	8.1622	8.9826	12.8493	16.3514	19.5235
	3%	0.9709	1.9135	2.8286	3.7171	4.5797	5.4172	6.2303	7.0197	7.7861	8.5302	11.9379	14.8775	17.4131
	4%	0.9615	1.8861	2.7751	3.6299	4.4518	5.2421	6.0021	6.7327	7.4353	8.1109	11.1184	13.5903	15.6221
	5%	0.9524	1.8594	2.7232	3.5460	4.3295	5.0757	5.7864	6.4632	7.1078	7.7217	10.3797	12.4622	14.0939
	6%	0.9434	1.8334	2.6730	3.4651	4.2124	4.9173	5.5824	6.2098	6.8017	7.3601	9.7122	11.4699	12.7834
	7%	0.9346	1.8080	2.6243	3.3872	4.1002	4.7665	5.3893	5.9713	6.5152	7.0236	9.1079	10.5940	11.6536
	8%	0.9259	1.7833	2.5771	3.3121	3.9927	4.6229	5.2064	5.7466	6.2469	6.7101	8.5595	9.8181	10.6748
	9%	0.9174	1.7591	2.5313	3.2397	3.8897	4.4859	5.0330	5.5348	5.9952	6.4177	8.0607	9.1285	9.8226
	10%	0.9091	1.7355	2.4869	3.1699	3.7908	4.3553	4.8684	5.3349	5.7590	6.1446	7.6061	8.5136	9.0770
	11%	0.9009	1.7125	2.4437	3.1024	3.6959	4.2305	4.7122	5.1461	5.5370	5.8892	7.1909	7.9633	8.4217
	12%	0.8929	1.6901	2.4018	3.0373	3.6048	4.1114	4.5638	4.9676	5.3282	5.6502	6.8109	7.4694	7.8431
	13%	0.8850	1.6681	2.3612	2.9745	3.5172	3.9975	4.4226	4.7988	5.1317	5.4262	6.4624	7.0248	7.3300
	14%	0.8772	1.6467	2.3216	2.9137	3.4331	3.8887	4.2883	4.6389	4.9464	5.2161	6.1422	6.6231	6.8729
	15%	0.8696	1.6257	2.2832	2.8550	3.3522	3.7845	4.1604	4.4873	4.7716	5.0188	5.8474	6.2593	6.4641
	16%	0.8621	1.6052	2.2459	2.7982	3.2743	3.6847	4.0386	4.3436	4.6065	4.8332	5.5755	5.9288	6.0971
	17%	0.8547	1.5852	2.2096	2.7432	3.1993	3.5892	3.9224	4.2072	4.4506	4.6586	5.3242	5.6278	5.7662
	18%	0.8475	1.5656	2.1743	2.6901	3.1272	3.4976	3.8115	4.0776	4.3030	4.4941	5.0916	5.3527	5.4669
	19%	0.8403	1.5465	2.1399	2.6386	3.0576	3.4098	3.7057	3.9544	4.1633	4.3389	4.8759	5.1009	5.1951
	20%	0.8333	1.5278	2.1065	2.5887	2.9906	3.3255	3.6046	3.8372	4.0310	4.1925	4.6755	4.8696	4.9476
	21%	0.8264	1.5095	2.0739	2.5404	2.9260	3.2446	3.5079	3.7256	3.9054	4.0541	4.4890	4.6567	4.7213
	22%	0.8197	1.4915	2.0422	2.4936	2.8636	3.1669	3.4155	3.6193	3.7863	3.9232	4.3152	4.4603	4.5139
	23%	0.8130	1.4740	2.0114	2.4483	2.8035	3.0923	3.3270	3.5179	3.6731	3.7993	4.1530	4.2786	4.3232
	24%	0.8065	1.4568	1.9813	2.4043	2.7454	3.0205	3.2423	3.4212	3.5655	3.6819	4.0013	4.1103	4.1474
25%	0.8000	1.4400	1.9520	2.3616	2.6893	2.9514	3.1611	3.3289	3.4631	3.5705	3.8593	3.9539	3.9849	
<b>HOW TO USE THIS TABLE:</b> PV OF OF A 10-YEAR ANNUITY (OF \$1) WITH A 12% DISCOUNT R								5.6502	(Look under 10 years on the top axis and for 12% in the vertical axis)					
		IF YOU HAVE \$50 MILLION A YEAR FOR 10 YEARS, @12% =						282.51	! 50*6.6502					