1. Volkswagen's sales in 2016 were €217 billion. Its EBITDA (EBIT + Depreciation) was €19.0 billion. Capex and development expenses were running at 10% of sales, and taxes at 1% of sales. Assume its cost of capital is 10%, and its sales would grow at 3% for the foreseeable future.

   (a) Estimate its share price assuming there are 500 million shares outstanding. Treat 2016 as T=0.

   (b) Now suppose that sales growth slows down to –1% for 2017 and +1% for 2018, and then recovers to 3% after that. How much value is lost because of the slow down in sales in 2017 and 2018? Again, treat 2016 as T=0.

2. In rosier times – end of 1998 to be precise – Worldcom traded at a price of nearly $74. With 1.83 billion shares outstanding, Worldcom had a market capitalization of $74x1.83 = $135 billion.

   The projection for 1999 was made in late 1998. Assume that in 1999 accounts receivables and inventory are up by $500 million, there is no change in cash or current liabilities, taxes are 4% of revenues, and EBIT is 20% of revenues. Long-term debt for Worldcom is $21 billion, and its WACC is 12%.

   What sort of revenue and earnings growth rate beyond 1999 is needed to justify its share price of $74?

Projection for Worldcom, $ millions

	1998	1999	2000
Revenues		35000	
EBIT			
Depreciation		4000	
Capital Exp		7000	
Change in Working Capital			
Estimated Taxes			
FCF			
Enterprise Value			
Debt			
Equity Value			

3. On June24, 1998, AT&T announced its intent to acquire TCI. The assets obtained in the acquisition helped create AT&T Broadband.

   a. Given the following data, what was AT&T's abnormal return at the announcement of the TCI acquisition?

Date	*AT&T Stock Price*	*S&P 500 Index*
June 23, 1998	$32.25	1119.5
June 24, 1998	$29.60	1132.9

   b. Three years later, on July 9, 2001, Comcast announced its intent to purchase the Broadband assets from AT&T. Given the following data, what was AT&T's abnormal return at the announcement of the bid by Comcast?

Date	*AT&T Stock Price*	*S&P 500 Index*
July 6, 2001	$16.69	1190.6
July 9, 2001	$18.66	1198.8

   c. Do you think the results in (a) and (b) are related? Explain.

4. Why does merger activity cluster by industry?

5. While horizontal mergers can be motivated by scale economies, what are some of the motivations for vertical mergers?