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## Financial Analysis Case Study: BP, Repsol and Royal Dutch Shell

### Introduction

The purpose of this case study is to encourage you to combine both financial analysis and Excel 2007 functionality. By the end of this case study you will not only have analysed three Oil & Gas industry companies but you will also have used a wide variety of Excel 2007 formulas, functions and techniques. However, because this is an open ended case study, the exact nature of the analysis is not something that can simply be written down and applied: the case can be considered at least a level two case, therefore.

In this case you are presented with the following information for three Oil & Gas Industry companies, BP, Repsol and Royal Dutch Shell:

- income statements
- balance sheets
- most pessimistic, consensus and most optimistic scenarios
- historical oil prices
- future oil prices

The case begins with the tasks you need to complete and then provides you with notes of advice and guidance to help you with your work.

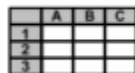
You **tasks** are

- 1 **compare** the performance of the three companies from the financial information provided
- 2 **prepare** scenarios for each company using the most pessimistic, consensus and most optimistic forecasts: there is no reason why all three scenarios should be the same as each other
- 3 **use** the historical and future oil prices to **support** or reject the scenarios you have prepared in the previous task

### Company Backgrounds

- **BP plc** is an oil company, operating through its subsidiaries. With effect from 1<sup>st</sup> January 2008, it operated in two business segments: Exploration and Production and Refining and Marketing. A separate business, Alternative Energy, reported in other businesses and corporate, handles its low carbon businesses. Exploration and Production's activities include oil and natural gas exploration, development and production (upstream activities), together with related pipeline, transportation and processing activities (midstream activities), as well as the marketing and trading of natural gas (including liquefied natural gas), power and natural gas liquids. The activities of Refining and Marketing include the refining, manufacturing, supply and trading, marketing and transportation of crude oil, petroleum and petrochemicals products and related services. In April 2008, BP registered in Russia its subsidiary, BP Exploration Services.
- **Repsol YPF (YPF)** is an integrated oil and gas company engaged the petroleum business, including exploration, development and production of crude oil and natural gas, transportation of petroleum products, liquefied petroleum gas (LPG) and natural gas, petroleum refining, petrochemical production and marketing of petroleum products, petroleum derivatives, petrochemicals, LPG and natural gas. It operates in five segments: Upstream, which is responsible for oil and gas exploration and production activities, except for those undertaken by YPF S.A, which manages LNG midstream and marketing activities, except for those undertaken by YPF; Downstream, which is responsible for refining and marketing of oil, chemicals and LPG; YPF, which is responsible for the integrated value chain activities (exploration, production, refining, logistics, marketing and chemicals) undertaken by YPF, and Gas Natural, which corresponds to its stake in Gas Natural SDG SA.
- **Royal Dutch Shell plc** is a holding company, which owns, directly or indirectly, investments in the numerous companies constituting the group. Shell is engaged globally in the principal activities of oil and natural gas industry. The Company operates in five business segments: exploration and production, gas and power, oil sands, oil products, and chemicals. The exploration and production business searches for and recovers oil and natural gas globally. The gas and power business liquefies natural gas and transports it to customers. Its gas to liquids (GTL) process turns natural gas into cleaner burning synthetic fuel and other products. The oil sands business extracts bitumen and converts it to synthetic crude oils that can be turned into a range of products. The oil products business makes moves and sells a range of petroleum based products globally for domestic, industrial and transport use. The chemicals business produces petrochemicals for the industrial customers.

**Source:** <http://markets.ft.com/ft/markets/companyResearch.asp>



## The Excel 2007 File

In the Excel 2007 file that accompanies this case, *bp\_repsol\_shell.xlsx* (see the link at the end of the page), you will find the following **templates**:

- a ratio analysis **template**
- a common size statement **template**
- rates of change **templates**

You can use these templates for your answers to task 1.

You can use as much of these templates as possible and if you are free to provide further analyses as you feel appropriate.

It is worth pointing out that BP and Royal Dutch Shell have reported in US Dollars while Repsol has reported in Euro.

## Notes for Task 1

### Ratio Analysis

The ratio analysis formulas are given as guidance only: there are alternative formulas for some of those presented and there are additional ratios to consider: hundreds of them, in fact. Feel free to add further ratios as you wish.

### Common Size Statements

Common size statements can reveal a lot of additional information over and above the raw data and the ratios. All common size statements are essentially the same as each other but we feel the need to help as follows:

for the income statement, the common size statement starts in this way:

	2008	2007	2006
Revenue	Revenue2008//Sales2008%	Revenue2007//Sales2007%	Revenue2006//Sales2006%
Other Revenue, Total	Other Revenue 2008/Sales2008%	Other Revenue 2007/Sales2007%	Other Revenue 2006/Sales2006%
<b>Total Revenue</b>	Sales2008/Sales2008%	Sales2007/Sales2007%	Sales2006/Sales2006%
Cost of Revenue, Total	Cost of revenue 2008/Sales2008%	Cost of revenue 2007/Sales2007%	Cost of revenue 2008/Sales2006%
Sell/General/Admin. Expenses, Total	SGA2008/Sales2008%	SGA2007/Sales2007%	SGA2006/Sales2006%
Research & Development	R&D2008/Sales2008%	R&D2007/Sales2007%	R&D2006/Sales2006%
Depreciation/Amortization	DA2008/Sales2008%	DA2007/Sales2007%	DA2006/Sales2006%
Unusual Expense (Income)			
<b>Total Operating Expense</b>			

for the balance sheet, the common size statement, starts this way:

# Excel Master

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	2008	2007	2006
Cash and Short Term Inv	Cash2008/total assets2008%	Cash2007/total assets2007%	Cash2006/total assets2006%
Total Receivables, Net	TR2008/total assets2008%	TR2007/total assets2007%	TR2006/total assets2006%
Total Inventory	TI2008/total assets2008%	TI2007/total assets2007%	TI2006/total assets2006%
Prepaid Expenses	Prepays2008/total assets2008%	Prepays2007/total assets2007%	Prepays2006/total assets2006%
<b>Total Current Assets</b>	<b>TCA2008/total assets2008%</b>	<b>TCA2007/total assets2007%</b>	<b>TCA2006/total assets2006%</b>
Prop./Plant/Equip. - Net	PPE2008/total assets2008%	PPE2007/total assets2007%	PPE2006/total assets2006%
Goodwill, Net	Goodwill2008/total assets2008%	Goodwill2007/total assets2007%	Goodwill2006/total assets2006%
Intangibles, Net			
Long Term Investments			
Note Rcvble - Long Term			
Other Long Term Assets			
<b>Total Assets</b>			

## Rates of Change

There are various ways of **calculating a rate of change ratio** but the simplest method we use is as follows:

$$\text{Rate of Change} = \frac{\text{this year} - \text{last year}}{\text{last year}} - 1 * 100$$

This formula provides the rate of change from one year to the next.

Alternatively, you might be familiar with:

$$\text{Rate of Change} = \frac{\text{this year} - \text{base year}}{\text{base year}} - 1 * 100$$

This formula provides a change from a base year, much like an index number.

There are even more ways of showing a rate of change: use the one that you are most familiar with as the two approaches given above are suggestions only.

	A	B	C	D
1	<b>BP, Repsol and Shell Income Statements</b>			
2	Source: <a href="http://markets.ft.com/ft/markets/companyResearch.asp">http://markets.ft.com/ft/markets/companyResearch.asp</a>			
3	All statements for the years ended 31st December			
4	BP			
5	in Millions of USD	2008	2007	2006
6	(except for per share items)			
7				
8	Revenue	361,143	284,365	265,906
9	Other Revenue, Total	4,557	4,586	4,696
10	<b>Total Revenue</b>	<b>365,700</b>	<b>288,951</b>	<b>270,602</b>
11	Cost of Revenue, Total	296,165	226,681	210,976
12	Sell/General/Admin. Expenses, Total	21,938	19,384	18,068
13	Research & Development	882	756	1,045
14	Depreciation/Amortization	10,985	10,579	9,128
15	Unusual Expense (Income)	380	-808	-3,165
16	<b>Total Operating Expense</b>	<b>330,461</b>	<b>256,599</b>	<b>235,444</b>
17	<b>Operating Income</b>	<b>35,239</b>	<b>32,352</b>	<b>35,158</b>

## Preparatory Work

The income statement and balance sheet data have been copied from the **Financial Times** database of company data and have not been formatted in any way. In addition, we have made no attempts to program any functions or formulas into the financials but you **ought** to do that **before** you begin. For example, in the income statements, see the screenshot below, row 10, Total Revenue, has been hard coded by the FT as have rows 16 and 17, total Operating Expenses and Operating Income respectively. All other totals and sub totals have similarly not been programmed.

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## Notes for Task 2

In the accompanying Excel 2007 file, you will find the worksheet *scenarios*. That worksheet contains the scenario data for the years 2008 – 2011. Those scenario variables have been copied from Palepu et al. We think it will be advisable for you to reorganise the schedule you see there before you try to use and program with it.

It's not vital to reorganise the schedule but in terms of using the information in it, you will find it easier to do that when constructing the various formulas and functions that you will probably want to build into your scenarios.

You should then prepare a series of schedules to reflect the three scenarios. The layout and format of your schedules is for you to decide and again no guidance is given here.

By the end of this task you should have formed and stated your opinion of which scenario you favour: in order to do this you should include any relevant parts of your solution to task 1.

## Notes for Task 3

This task has the further objective of testing your scenario analysis by asking you to imagine that you have completed your analyses as per tasks 1 and 2 and then the information relating to oil prices is made available to you.

Before you begin this task, you are advised to look at and reorganise the schedule to be found on worksheet *history\_oil*. Reorganising that schedule will allow you to isolate the relevant parts of it for your use in this task. Additionally, you might find that not all of the data in that table are useful for you.

We have prepared a correlation matrix and put it on that worksheet: you should be able to find a use for it in your analysis in this task.

You should find a useful way to include the table to be found in the *future\_oil* worksheet: oil prices taken from oil price futures as found on the Yahoo Finance web site.

## References

- 1 Krishna G Palepu, Paul M Healy, Victor L Bernard and Erik Peek (2007) *Business Analysis and Valuation: IFRS Edition* South Western Cengage Learning
- 2 **Company Financials** from <http://markets.ft.com/ft/markets/companyResearch.asp>
- 3 **Historical Oil Prices** from <http://www.interconnresources.com/news/wp-content/uploads/2009/08/Historical%20Oil%20Prices%20NYMEX%20Close.pdf>
- 4 **Crude Oil Futures Prices** <http://finance.yahoo.com/q/fc?s=CLV09.NYM>

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