

Final Project  
Digital Tools for Finance

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## **Introduction**

This report is aimed on the estimation of the cost of capital of the main players of the oil industry.

The first part of the report gives a brief overview of main market characteristics of oil stocks.

The second part of the report is dedicated to the estimation of the cost of capital.

## **Overview of Market Data**

### **Cost of Capital**

#### **Methodology**

According to Damodaran (2001) and Plenborg and Pimentel (2016), one of the most prominent methods in calculating the cost of equity is the CAPM model, that is being implemented in the current research.

#### **Risk-free rate**

For the estimation of risk-free rates we considered global risk-free rates (Figure 1)

The risk free rate for the current project was accepted to be 0.

#### **Beta estimation**

Companies' beta coefficients were calculated, using the methodology, described by Damodaran (2001).

The 5 year time period was used for the estimation. The market index was represented by S&P 500.

The results are presented in Table 1.

#### **Cost of Equity**

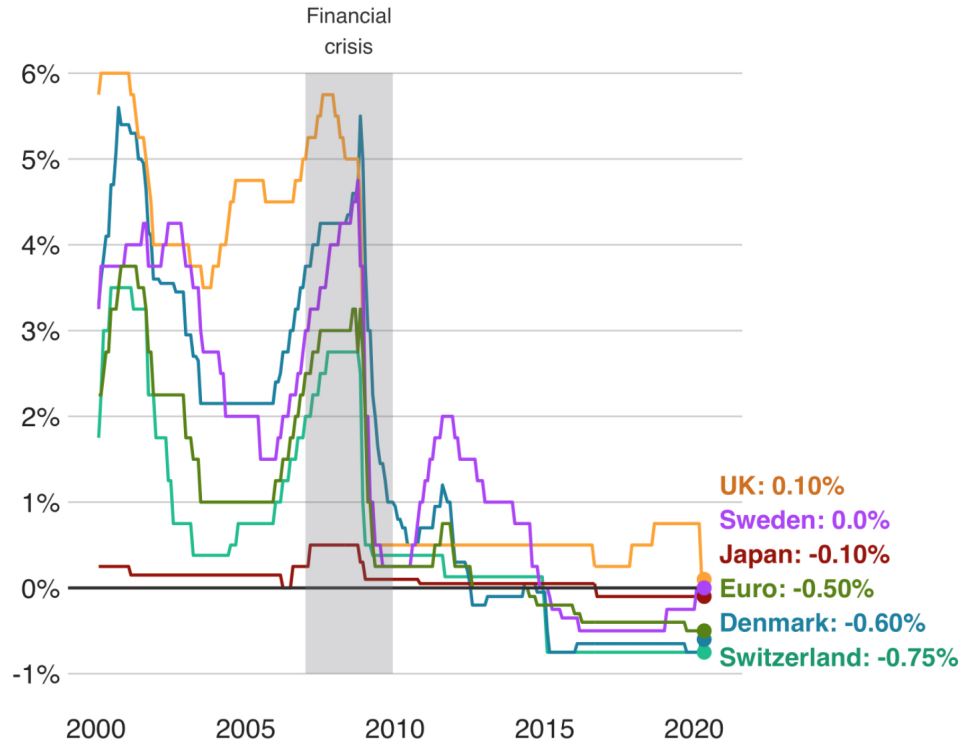
Cost of equity was calculated with the CAPM method, using the following formula:

$$r_e = r_f + \beta(r_m - r_f)$$

The results of calculations are provided in Table 2.

## **Findings and Conclusion**

Figure 1: Global risk free rates



Source: Bank for International Settlements

BBC

Table 1: Beta coefficients

1	China Petroleum & Chemical	0.83
2	PetroChina	0.97
3	Royal Dutch Shell PLC	1.11
4	BP PLC	1.09
5	Exxon Mobil Corp.	1.02
6	Total SE	1.07
7	Chevron Corp.	1.20
8	Marathon Petroleum Corp.	1.54
9	PJSC Lukoil	0.97

## References

Damodaran, Aswath (2001). *The dark side of valuation: valuing old tech, new tech, and new economy companies*. FT Press.

Figure 2: Beta Coefficients

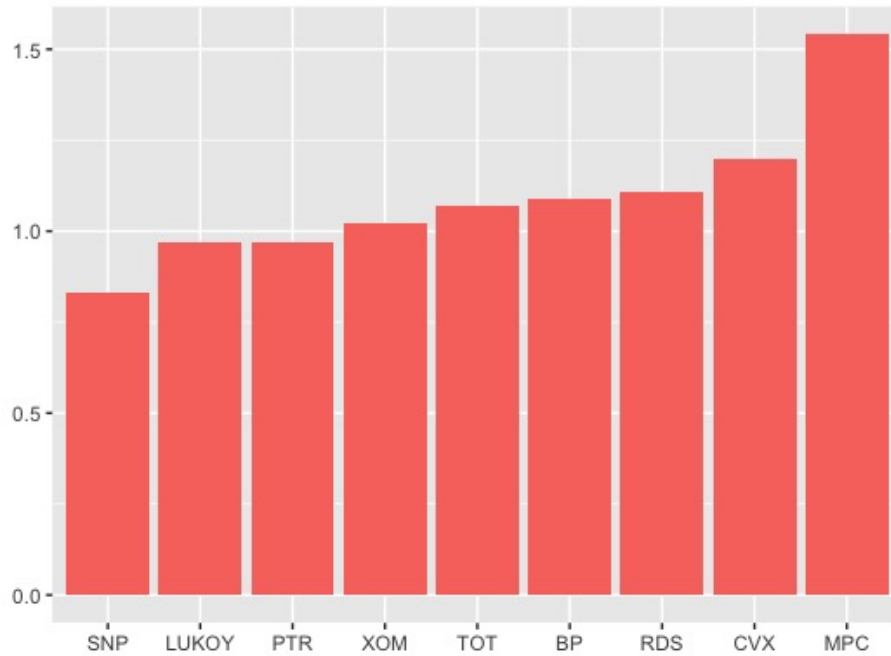


Table 2: Cost of Capital

1	China Petroleum & Chemical	0.15
2	PetroChina	0.17
3	Royal Dutch Shell PLC	0.20
4	BP PLC	0.19
5	Exxon Mobil Corp.	0.18
6	Total SE	0.19
7	Chevron Corp.	0.21
8	Marathon Petroleum Corp.	0.27
9	PJSC Lukoil	0.17

Plenborg, Thomas and Rene Coppe Pimentel (2016). “Best Practices in Applying Multiples for Valuation Purposes”. In: *The Journal of Private Equity* 19(3), pp. 55–64. ISSN: 10965572, 21688508.