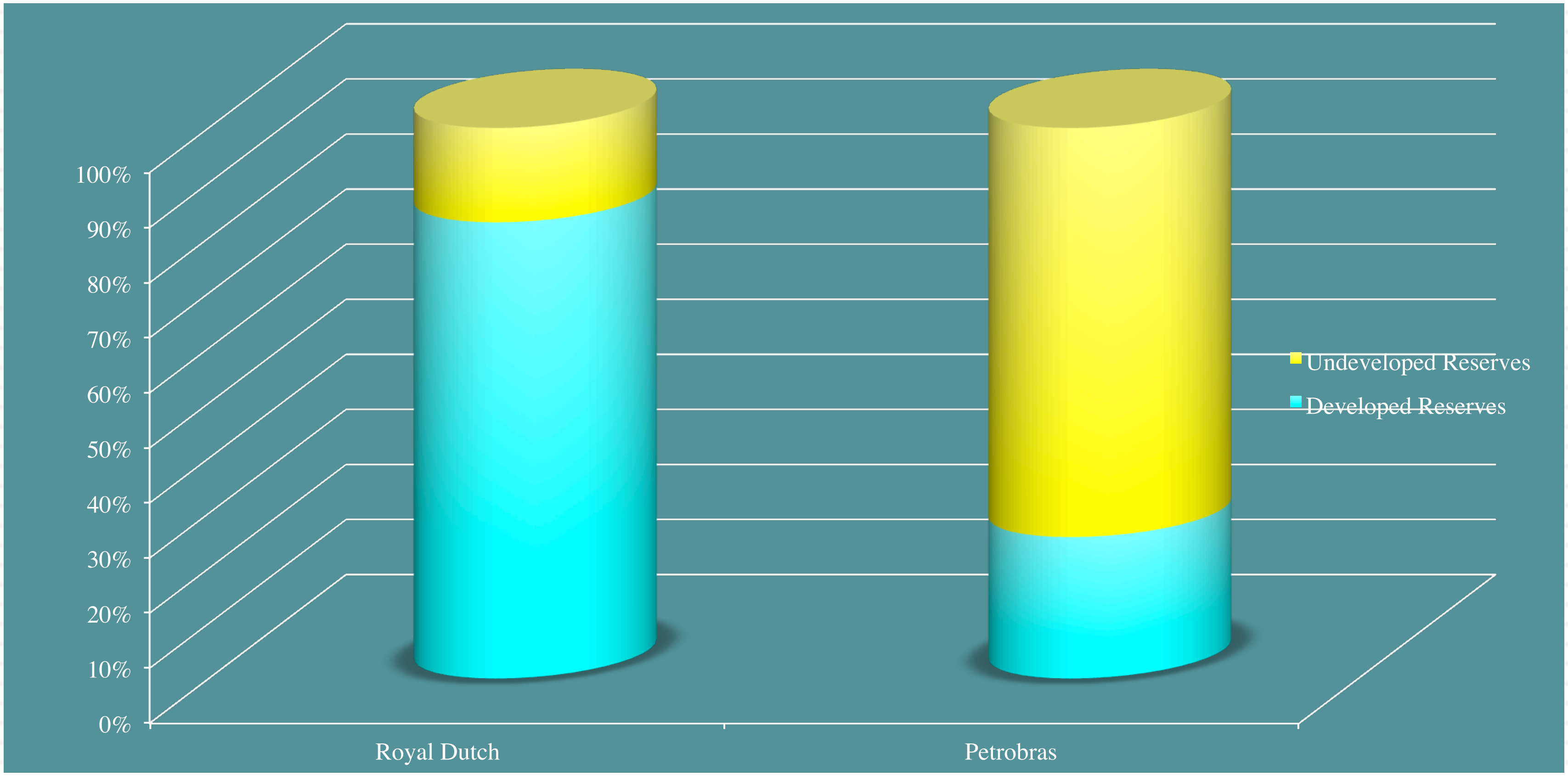
REAL OPTIONS 2

Background..

Assume that the current oil price is $60/barrel



Oil prices moving…

Now assume that a crisis in the Middle East causes oil prices to jump from $60/barrel to $100/barrel tomorrow. What will happen to the market values of the two companies?

a. They will both go up by the same amount
b. Royal Dutch will go up more than Petrobras
c. Petrobras will go up more than Royal Dutch

And back again..

Assume that the crisis passes the day after tomorrow and that oil prices drop back to $ 60/barrel. What do you foresee happening to the market values of the two companies?

a. They will both revert back to the current market cap
b. They will both be worth more than the current market cap, but Royal Dutch will be worth more.
c. They will both be worth more than the current market cap, but Petrobras will be worth more.

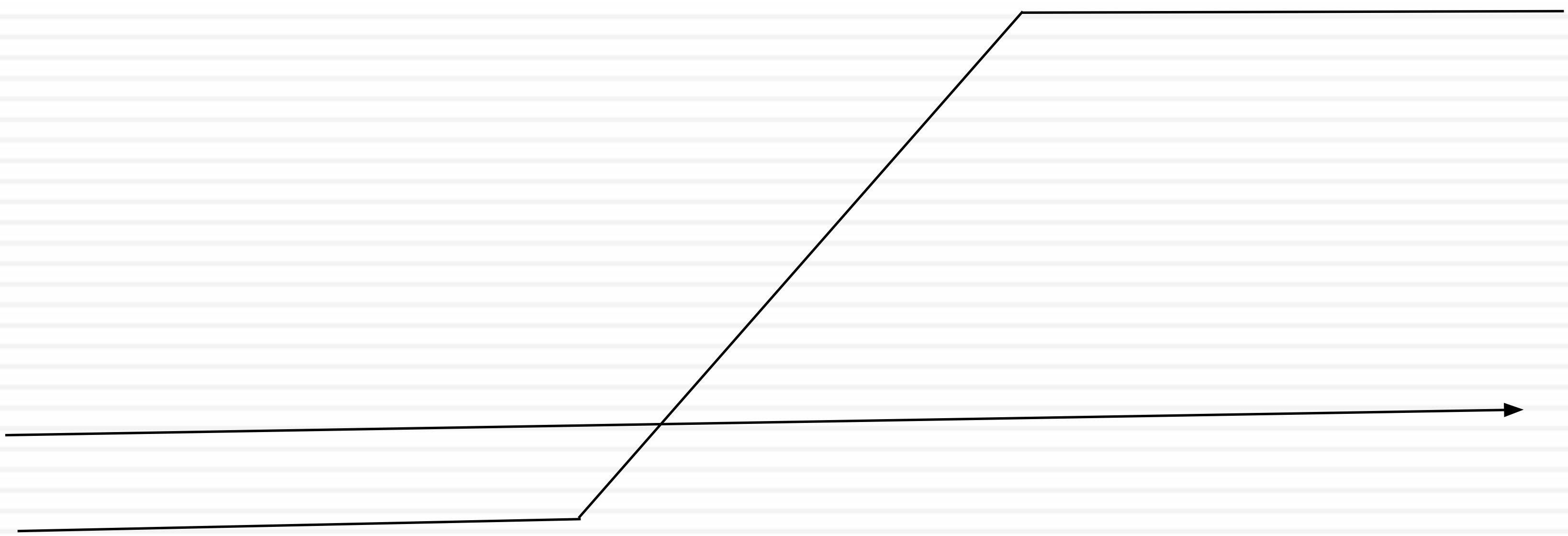
A cap on profits

- Now assume that Petrobras is offering some of its reserves for sale, with the caveat that the price of oil to the winning bidder will be capped at $150/barrel. (The government will claim the excess as a tax). What effect will this have on the value of these undeveloped reserves?
  - None. There is little chance that oil prices will rise above $150/barrel
  - Reduce value
  - Increase value

If you believe that value will be affected, how would you calculate the effect of the cap on value?

Valuing a Capped Call

Value the call option with a strike price of $150



Value the call option with a strike price of $60

Value of resource option = Value of call option with a strike price of $60- Value of call option with a strike price of $150