

## Higher Prices Lower Government Take?

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For quite a few years now most governments have been agonizing over what to do to encourage greater exploration activity in their countries. While this has been a long-standing problem, the issue for many countries has become increasingly critical.

It is not enough anymore for countries to ensure that they have “competitive” or “comparable” terms because they realize that “comparable terms” yield comparable lackluster exploration activity, the bane of almost all governments. They need big changes to get big results. If they want a sea change in exploration activity they must get more creative and provide some high octane incentives.

Many countries and provinces have been considering how they might possibly double or triple the number of exploratory wells drilled each year. Oil companies would be pleased to see the kind of improvements and incentives required to magnify exploration activity that much. Unfortunately, it is usually difficult for government officials to make big changes. This is because the officials who see the need to make changes often do not have authority to do so. For those who do have the authority, it takes a brave soul.

Each year many countries announce new incentives or new programs designed to encourage greater activity but these have often been small and relatively insignificant especially compared to the diminishing potential of their maturing basins. Rarely has the industry seen the kind of changes that can justify large increases in exploration activity. The British managed this but to do it they had to make things exciting.

With changes resulting from the 1983 budget, exploration in the UK sector of the North Sea reached record levels. This is because the government allowed exploration costs to cross the ringfence as deductions against the (then) 75% Petroleum Revenue Tax (PRT) on older fields. Prior to this all fields were ringfenced for PRT purposes. This created a huge exploration incentive for any company paying the PRT. Exploration risk was suddenly reduced by a factor of 75%. The UK sector of the North Sea became (almost overnight) the most active offshore province in the world. Some of the larger companies had substantial unused tax cover, and smaller companies did not have enough. The

smaller companies purchased what came to be known as "Forties Units" to take advantage of the exploration relief provided by the hole in the ringfence. These "units" were a quarter of a 1% working interest in the British Petroleum operated Forties field which at the time was producing in excess of 160,000 BOPD. By late 1984 the Forties field had gained 22 new owners all with shares of less than 2%. A dozen companies owned only a 0.25% working interest "unit". Then, in 1993 the UK dropped the PRT altogether to create some of the best terms in the world (in terms of government take).

In Norway there is no ringfence but companies do not have to own production to take advantage of this. If a company drills a dry hole the government will reimburse nearly 78% of the dry-hole costs! These are big and exciting innovations.

### **What now?**

Now the relatively recent run-up in oil prices may reverse the trend towards more lenient terms or big incentives. Governments contemplating the installation of improvements and/or incentives are likely to shelve those plans. One reason is that for most governments with higher oil prices (relative to the 1980s and 1990s) their over-all percentage "take" (government take) has gone down. This is because most systems are regressive to some degree—that is—when profitability goes up government take goes down. The difference is not great, usually only a few percentage points, but it is psychologically troubling for many government officials.

For a system to be regressive it must have at least one regressive fiscal element. The main reason for the generally regressive nature of systems around the world is that most countries have a royalty. Royalties are regressive. With a royalty, government take goes down with increased profitability/higher oil prices. The take in terms of *dollars* does go up of course (for both governments and oil companies) but the percentage goes down for most governments. This is shown in Table 1 with a simple royalty/tax system that has a 15% royalty and a 50% income tax.

During the 1990s with average prices around \$18/BBL, a system like this would have yielded a government take of around 63.5%. With a higher oil price regime (\$40/BBL in this example) government take drops by 4 points to around 59.4% (see Table 1).

When the increase in profitability is solely a function of an increase in oil prices often referred to as "windfall profits" then there is another perspective. The "marginal government take" statistic shows how the windfall profits (such as the difference between \$18.00 and \$40.00 per barrel) are divided. This is shown in Table 2. Marginal government take for the example royalty/tax system found in Table 1 is only 57.5% a full 6 points lower than ordinary government take for this system. This really bothers some government officials.

The natural question is: What will happen if the new oil price regime is expected to persist. For many (but not all) of this generation in the industry, this is the first experience with such a large and persistent price shift. The key consideration is this—even with

higher oil prices many governments will still want to see exploration activity increased, and by a wide margin. There are a number of scenarios to consider:

**First scenario:** Everybody changes their terms and increases government take like we saw in the 1970s. This would increase the government take in many countries (in terms of % and \$) and may spark some disputes depending upon the nature of the changes. This scenario does not create many happy thoughts with oil companies but it is not likely to happen either. Conditions are quite different now than the 1970s. Prior to the embargo in 1973, oil prices had been extremely stable for decades. The 1973 embargo and subsequent events more than doubled oil prices and then they doubled and doubled again. Furthermore, since that time fiscal system design has evolved to a point where the arrangements are somewhat more flexible and efficient than the agreements of the late 1960s and early 1970s. Also, prospectivity has been deteriorating steadily, although the deterioration is certainly mitigated with higher oil prices. The most important factor though is that countries now are much more desperate for greater exploration activity than they were in the 1970s.

**Second scenario;** Nobody changes their terms. Again, not a likely scenario but worth considering. If this happens then there will be improvement in exploration activity but not a 3 to 4-fold increase. There is a finite amount of exploration capital available and it will likely still be allocated to the same regions in roughly the same proportions as before. So countries like Thailand, Colombia, Indonesia, Morocco, Argentina, Egypt, Brazil, Gabon, Syria, Yemen, Vietnam, Norway, China, Australia, India, Italy and New Zealand are likely to see only a modest increase in exploration activity. No sea change.

**Third scenario:** Mixed bag. Some countries make adverse (from the oil company point of view) changes and increase government take in one fashion or another. Depending on the nature and magnitude of the changes there is likely to be some reduction in exploration activity for these countries and improvement in countries where adverse changes are not made. Countries with better-than-average potential or prospectivity can better afford to increase government take. But, the countries that want to significantly increase exploration (and other) activity whether or not they are highly prospective are better advised to hold off. In fact they still probably could justify adding incentives. I believe a 3 to 4-fold increase in exploration activity will take more than just \$40+/BBL oil prices. Governments wanting to kick exploration activity up a couple of notches need to come up with something that will put a big smile on the face of oil executives. Better prices are just a start.

### **Resurrection of Price-cap Formulas or Windfall Profits Taxes**

Many governments right now probably wish they had had a “price-cap formula”. And, I am hearing more discussion of these mechanisms lately. Price-cap formulas are designed to “trigger” when oil prices get above a certain (inflation adjusted) price. They target directly “windfall profits” or “windfall rent” (see Box). The classic example of a price-cap formula is where the government takes all revenues in excess of a pre-defined reference price. The contractor revenues then are based on an artificial price—the pre-

defined reference price (not the actual market price). However, there are many variations on this theme (see Table 3). Some formulas only provide for the government to take a portion. The basic mechanics of a price-cap formula are shown in Figure 1.

Regardless of the outcome – I have been thinking a lot lately of the famous passages from the “Oilman’s Prayer” of the 1980s such as: “. . . give us another Boom and we promise not to screw this one up.” Many governments had a similar prayer. Amen.

**Table 1**

**Most Fiscal Systems Are Regressive**

**This example simply illustrates the regressive nature of a royalty and the regressive nature of most fiscal systems because most systems have a royalty.**

- **Royalty = 15%**
- **Tax rate = 50%**
- **Example #1 \$18.00/BBL Crude**
- **Example #2 \$40.00/BBL Crude**

<b>Example #1</b>	<b>Example #2</b>	
<u>\$18.00</u>	<u>\$40.00</u>	Gross Revenues
- 2.70	6.00	15% Royalty
<u>= 15.30</u>	<u>34.00</u>	Net Revenue percentage
- 8.00	8.00	Assumed Costs (capital and operating)
<u>= 7.30</u>	<u>26.00</u>	Taxable revenues
- 3.65	13.00	Income tax (50% of taxable revenues)
<u>= 3.65</u>	<u>13.00</u>	Contractor after-tax net cash flow
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\$18.00	\$40.00	Gross Revenues
- 8.00	8.00	Costs (capital and operating costs)
<u>= \$10.00</u>	<u>\$32.00</u>	Total Economic Profits
3.65	13.00	Contractor share
6.35	19.00	Government share
<b>36.5%</b> [3.65/10.00]	<b>40.625%</b> [13.00/32.00]	Contractor Take
<b>63.5%</b> [(2.70+3.65)/10.00]	<b>59.375%</b> [(6.00+13.00)/32.00]	Government Take

**Table 2**

**Marginal Take Calculation**

**The marginal take statistic shows how windfall profits are divided. An increase in oil prices for all practical purposes will be divided 57.5%/42.5% in favor of the Government.**

- **Royalty = 15%**
- **Tax rate = 50%**

\$1.00	Incremental increase in Revenues (\$1.00/BBL)
- 0.15	15% Royalty
= 0.85	Net Revenue percentage
- 0.00	Assumed Costs *
= 0.85	Taxable revenues
- 0.425	Income tax (50% of taxable revenues)
= 0.425	Contractor after-tax net cash flow

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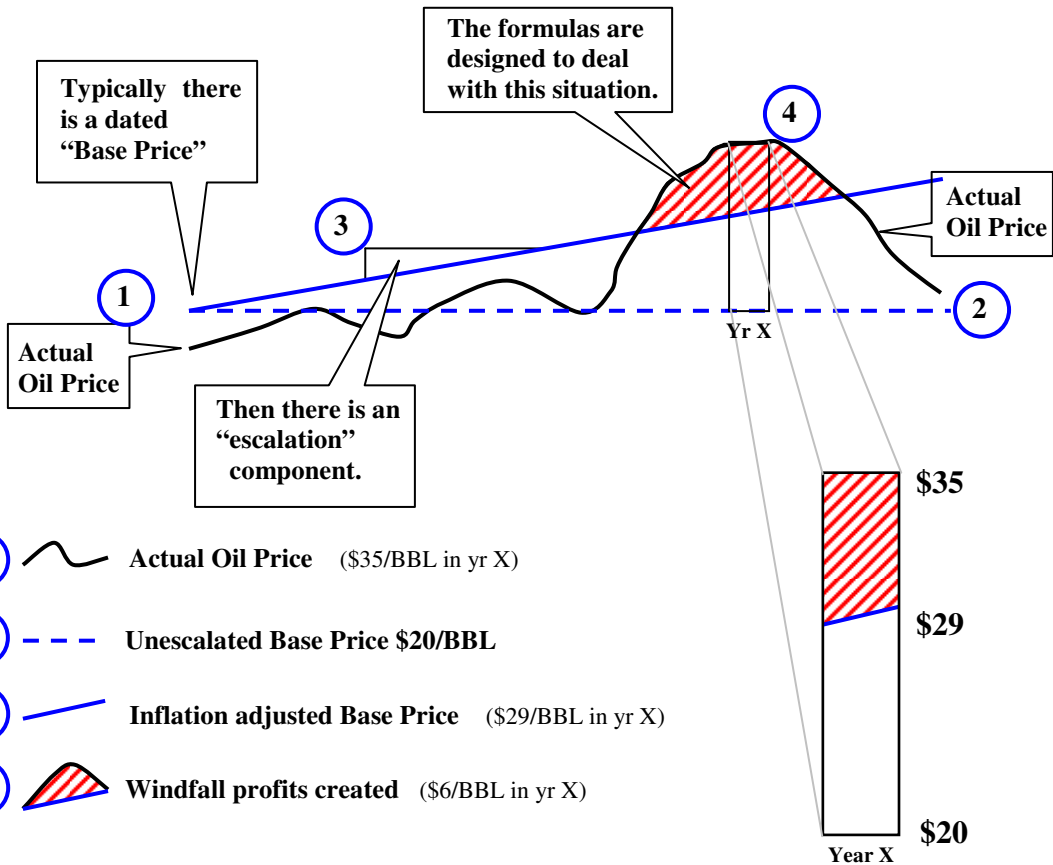
\$1.00	Gross Revenues
- 0.00	Costs (capital and operating costs)
= \$1.00	Total Economic Profits
0.425	Contractor share
0.575	Government share

<b>42.5%</b>	Contractor Marginal Take
[0.425/1.00]	
<b>57.5%</b>	Government Marginal Take
[(0.15+0.425)/1.00]	

\* It is assumed that the incremental increase in oil prices (\$1.00/BBL) here is not accompanied by and increase in costs.

**The Mechanics of a basic Price-cap Formula (2 examples)**

- **Example 1:** In year X government takes \$6/BBL “off the top” and company revenues/royalties/taxes based on \$29/BBL.
- **Example 2:** In year X government takes \$3/BBL “off the top” (half of the difference) and company revenues/royalties/taxes based on \$31/BBL.



**Figure 1**

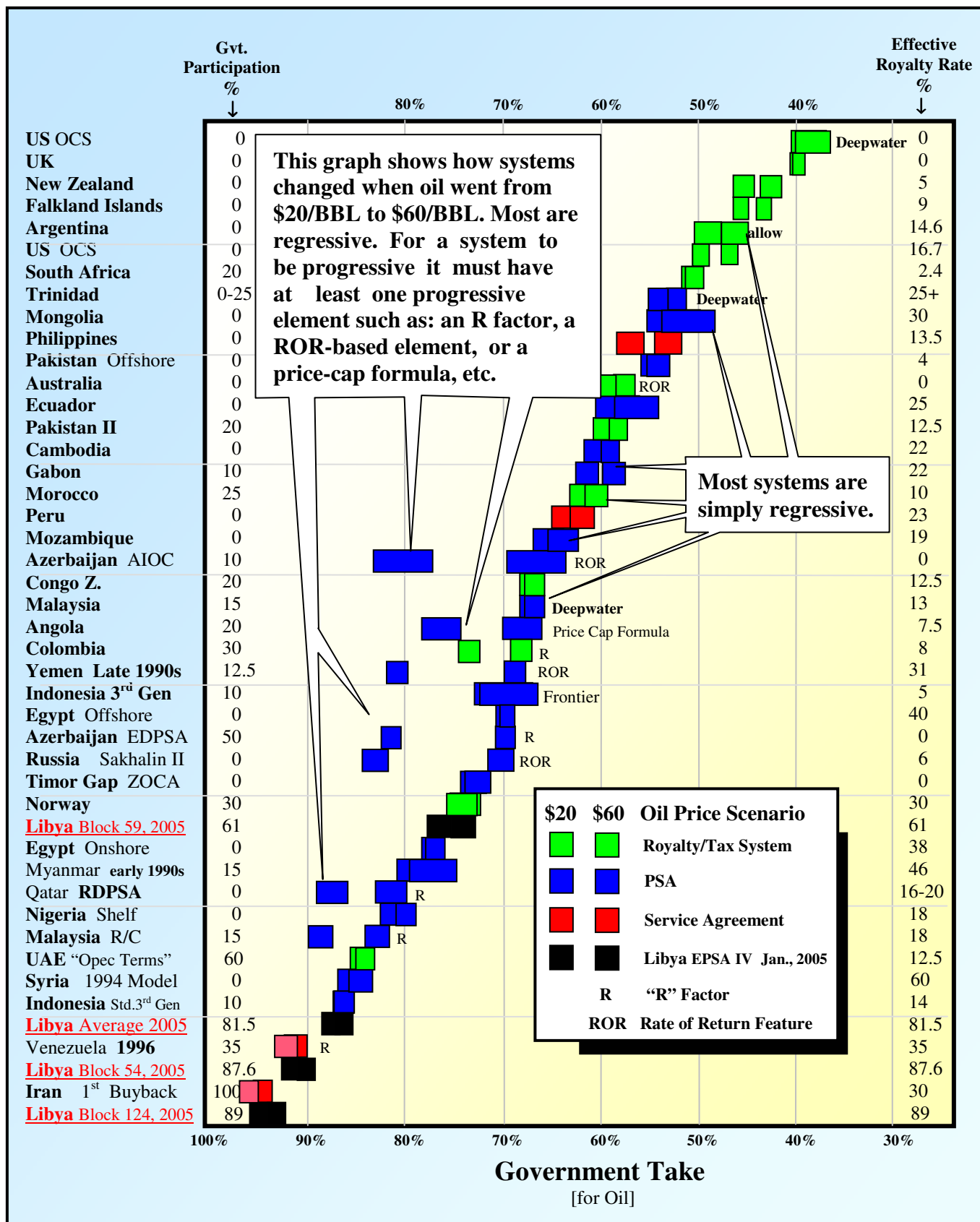


Figure 2 The difference between \$20/BBL and \$60/BBL

### **Box**

**Windfall Profits** – *During the American Revolutionary War, the use of any lumber, cut one foot or greater in width, was forbidden on the interior of new homes constructed by colonists. All such lumber was sent to Britain to be used in shipbuilding to support its war effort. Detection of such wall paneling or flooring by the British Army usually resulted in colonist imprisonment.*

*There was, however, a clause that allowed certain lumber to be used. If a tree fell on one's property through an "Act of God," such as a severe storm, the lumber could be used for any purpose. Further, it could be sold for a great deal of money. Thus, if a number of trees fell during a Nor'easter, they could bring a sizable stipend for a colonist. This monetary reward was called "windfall profit".* From Chubb Insurance

**Windfall Profits Tax** – In the petroleum industry these taxes are typically based on a price differential between actual market price and some (artificial) reference price (adjusted for inflation). The reference price can be a bid item, negotiated or statutory. The term is also used in the same context as "Windfall Rent".