PENANG INSTITUTE
making ideas work

Recent crude oil price dynamics,

PETRONAS and Malaysia

Lim Kim-Hwa

limkimhwa@penanginstitute.org

Tim Niklas Schoepp

tim.schoepp@penanginstitute.org

23 January 2015

Executive Summary

Since PETRONAS contributed RM73.4 billion (30% of the Malaysian government's expenditure) in 2013, the recent crude oil price fall has profound implications. The commodity effect will mean lower revenue and profits. However, this effect is cushioned by the depreciating USDMYR. This report aims to evaluate the likely price range of crude oil in 2015 and shows the possible impact on PETRONAS under different circumstances.

With contained geo-political risks, global crude oil oversupply, slower global economic growth and cost factors that favour continuous production rather than cuts, crude oil is likely to trade between USD40 – 70 per barrel.

Using the Annual Reports of PETRONAS, we estimated that:

- If USDMYR depreciates slightly to 3.75 and crude oil trades at USD55 per barrel in 2015, PETRONAS' profitability (as measured EBITDA) might fall to RM72 billion; and dividends might fall to RM19 billion (vs. RM123 billion and RM27 billion respectively in 2013);
- In a rosy case (where crude oil trades at USD70 per barrel and USDMYR trades at 4), PETRONAS' EBITDA would fall to RM98 billion but RM26 billion dividends payment might be possible;
- In a bad case (where crude oil trades at USD40 per barrel and USDMYR trades at 3.5), PETRONAS' EBITDA would fall to RM49 billion and dividends might fall by half to RM13 billion.
- Some PETRONAS assets might be impaired, in particular those that were purchased when crude oil price was trading at over USD100 per barrel. The report identified four investments made between 2012 and 2014. A 10% impairment charge on these investments would translate to RM5.8 billion loss using the current exchange rate. Such write downs will reduce corporation tax payable from PETRONAS to the government.

The report can be improved by additional accounting disclosure and more detailed information on segmental basis.

1. Introduction

Oil and gas play a significant role in Malaysia. PETRONAS, the country's wholly owned oil and gas company, contributed RM73.4 billion in total to the Federal and State Governments of Malaysia in 2013 – comprising RM27 billion in dividend, RM33.3 billion in taxes and RM12 billion in cash payments and RM1.1 billion of Export Duty (PETRONAS Annual Report, 2013). This is a significant sum and amounts to 30%[1] of the government's expenditure in 2013.

The average selling price for crude oil between 2011 and 2014 was USD109 per barrel. However the average price in the first 20 days of 2015 is USD49.66[2] per barrel. As such the recent fall in crude oil prices will have profound impact on Malaysia. This article evaluates the crude oil dynamics and provides a possible price range for crude oil for 2015. It also provides estimates of the impact on PETRONAS through likely reduction in profitability and asset impairments.

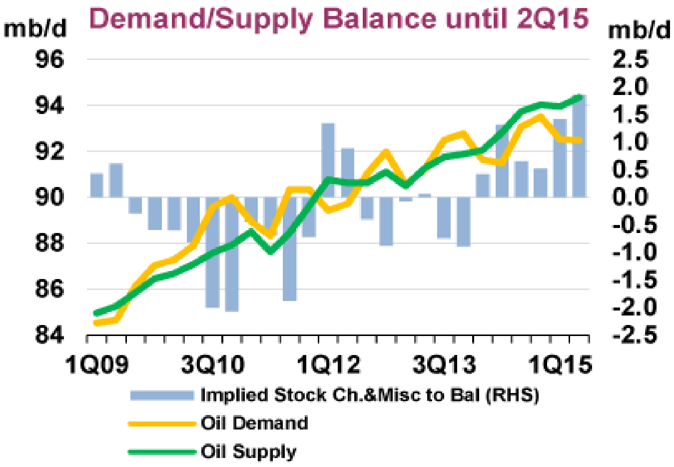
2. Crude oil dynamics

We believe that crude oil price is unlikely to recover to USD109 per barrel in 2015 due to the following reasons.

Global oil supply in excess of demand

According to the International Energy Agency (IEA), there could be a 2 million barrels per day of oil surplus by the second quarter of 2015 (Figure 1). Therefore, near term demand is expected to remain weak amidst slower global economy.

Figure 1: Global oil demand/supply

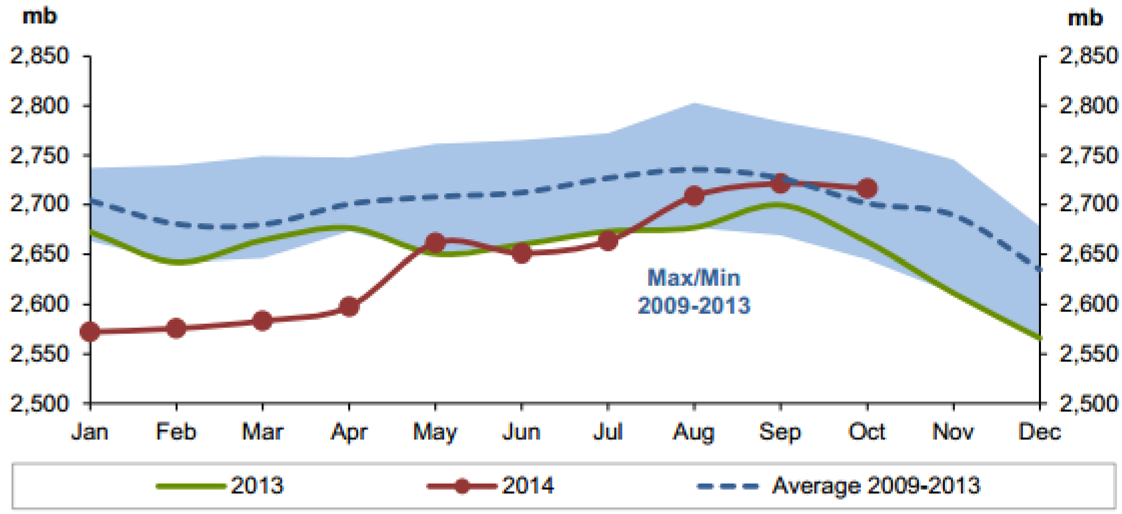


Source: International Energy Agency (IEA)

[1] http://www.epu.gov.my/documents/10124/2257e64f-b08d-41b7-bed0-b6e6498c38a3
[2] http://www.eia.gov/dnav/pet/pet_pri_spt_s1_w.htm

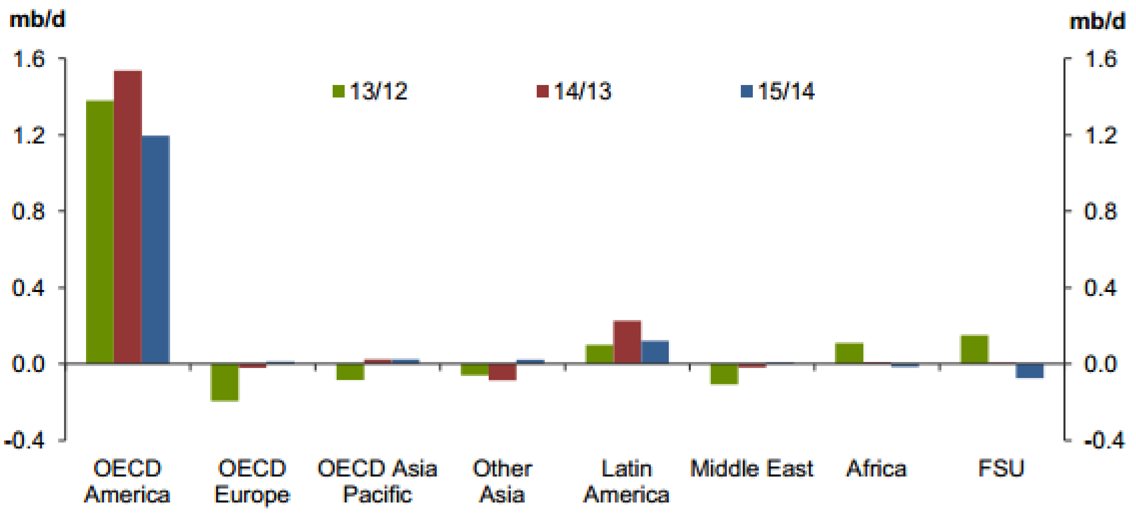
Besides, OECD commercial oil stock is above the 5 year average in October 2014 and 2013 levels (Figure 2). With additional surplus coming in the first half of 2015, more downward pressure could be exerted in 2015. This continuous additional supply is coming from shale oil in the US (Figure 3) given that the OPEC crude production has stabilised over the past few years (Figure 4).

Figure 2: OECD Commercial oil stocks



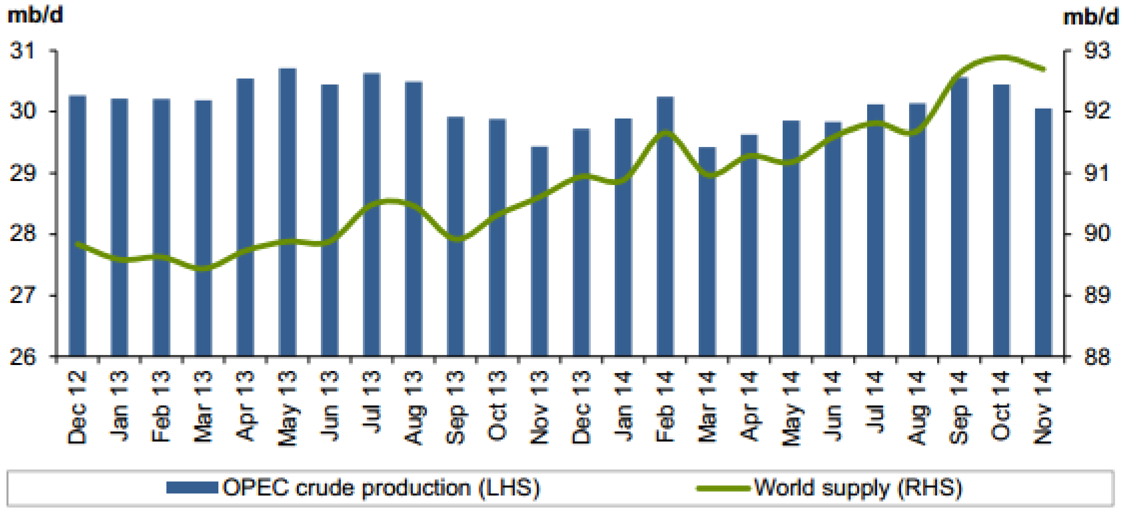
Source: OPEC Monthly Oil Market Report (Dec. 2014)

Figure 3: Regional non-OPEC supply growth, y-o-y



Source: OPEC Monthly Oil Market Report (Dec. 2014)

Figure 4: OPEC and world oil supply

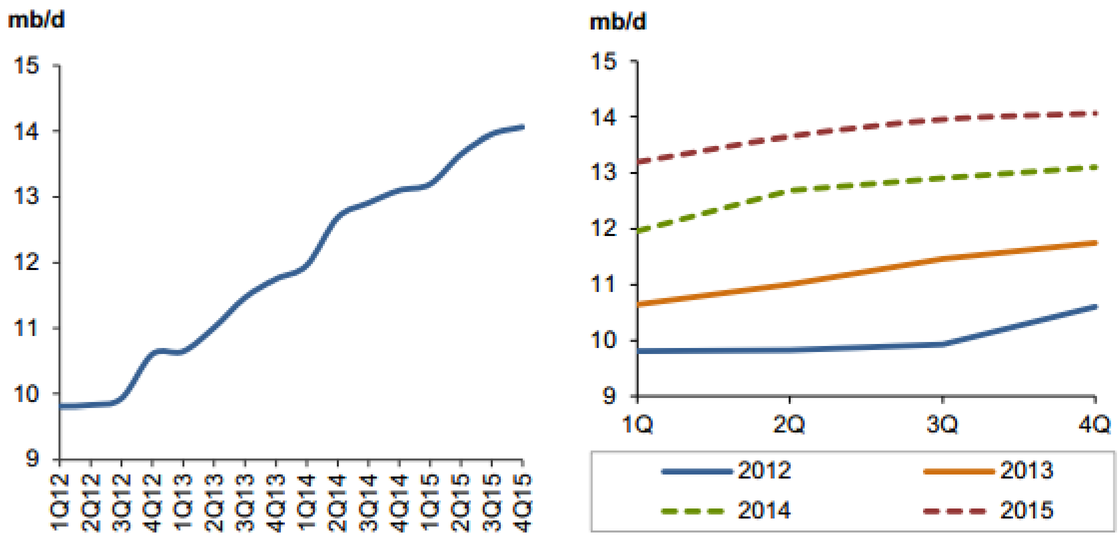


Source: OPEC Monthly Oil Market Report (Dec. 2014)

Oil price fall is not reducing supply

Contrary to expectations, the recent fall in crude oil price is not decreasing crude oil production guidance. The tussle between Saudi Arabia, who has decided to defend its market share, and US shale producers is intensifying. Out of the 11 US shale producers with more than 20,000 BOE per day that announced capital expenditure cuts, only two have projected flat 2015 output; whilst the rest are projecting 5-43% production growth – see Figure 5. This is because exploration cost is often the largest part of total cost. When it is regarded as sunk cost, the ongoing production cost, which is variable, has little effect – see Figure 6.

Figure 5: US quarterly production (left) and annual comparison



Source: OPEC Monthly Oil Market Report (Dec. 2014)

Figure 6: Cost for producing crude oil and natural gas, 2007-2009 (2009 Dollars per Barrel of Oil Equivalent)

	Lifting Costs	Finding Costs	Total Upstream Costs
United States – Average	$12.18	$21.58	$33.76
On-shore	$12.73	$18.65	$31.38
Off-shore	$10.09	$41.51	$51.60

Source: US Energy Information Administration

Weak global growth outlook

Both the International Monetary Fund[3] and the World Bank have recently cut the global growth outlook for 2015 and 2016. This, together with a stronger US Dollar will put a cap on any rise in the crude oil price.

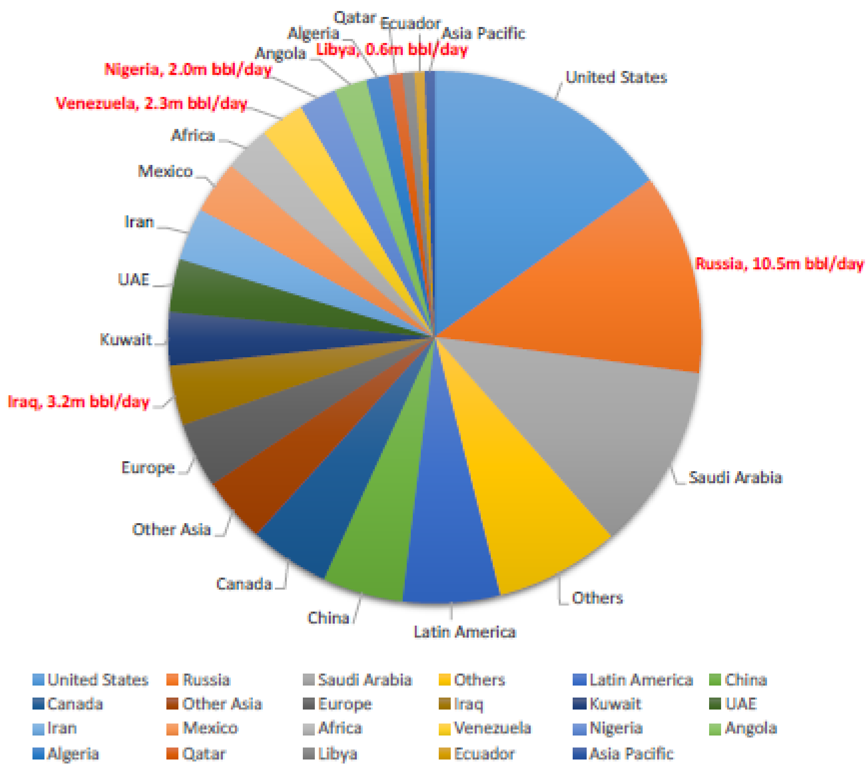
However, given that the fall in oil price amounts to an effective tax cut for oil consuming countries (which include most of the EU countries and the US), these economies would likely perform better than otherwise would be. Their economies might also be helped by the announcement of quantitative easing from the European Central Bank. If demand picks up after in the second half of 2015, then the oversupply situation could be corrected. However, the current oil inventory level is higher than the seasonally adjusted level (Figure 2). Hence, potential price recovery is likely to be delayed to 2016, barring unforeseen geopolitical risk.

Well contained geo-political risks

Although close to 20% of global oil production might be at risk due to geo-political issues, the risks are well contained. Indeed, the recent overtures between Iran and the US might indicate a reduction in risks. Even if the Ukrainian crisis deteriorate, supply from Russia is unlikely to be interrupted as oil is the main export earner.

[3] http://www.reuters.com/article/2015/01/20/us-imf-economy-idUSKBN0KT06C20150120

Figure 7: Q3 2014 Global oil supply



Therefore, in conclusion, we believe that the crude oil price is unlikely to recover to USD100 per barrel in the near term and is likely to trade between USD40-70 per barrel. In the next section, we evaluate the possible impact on PETRONAS under different scenarios.

3. PETRONAS' profitability and dividend

Opposing effects from crude oil price and the USDMYR exchange rate

Through the commodity effect, a fall in crude oil price is obviously negative for an oil company like PETRONAS. However, crude oil is priced and traded in USD; and the Ringgit has depreciated against USD. Hence, given that PETRONAS reports in Ringgit, a weakening USDMYR is positive to PETRONAS through the currency effect.

Using data from PETRONAS Annual Reports, we investigate the likely impact if crude oil trades between USD40-70 per barrel and USDMYR trades between 3.5 and 4. Table 1 shows the extracted revenue and EBITDA data from PETRONAS Annual Report 2013. Assuming that the composition of business remains relatively stable across the period, we calculate the ratios of Revenue/Oil Price, EBITDA/Oil Price and Dividend/EBITDA, all expressed in Ringgit. The Revenue/Oil Price ratio hovers around 0.82 to 0.93 with a 4-year average of 0.86; whilst the EBITDA/Oil Price ratio ranges between 0.32 and 0.36 with an average of 0.35. In the four years, 22% to 36% of EBITDA was paid out as Dividends.

As the fall in crude price is mainly in 2015, using the 4-year averages, the 2014 results are forecast to hold up well with a Revenue of RM295 billion, EBITDA of RM120 billion and Dividends of RM31.5 billion based of the average distribution in the past years.

Table 1: Revenue and EBITDA between 2010 and 2013 (actual) and 2014 (forecast)

Petronas Key Financial Indicators In Billion Ringgit		Annual Report 2013			
	2014 (f)	2013 (a)	2012 (a)	2011 (a)	2010 (a)
Revenue	294.5	317.3	291.2	288.5	210.8
EBITDA	119.9	123.4	120.4	123	83.3
Dividend	31.2	27	28	30	30
Average Annual Crude Oil Price (Brent) USD	104.65	108.56	111.63	111.26	79.61
Average Annual Crude Oil Price (Brent) MYR	342.47	341.73	344.77	340.28	256.50
Dividend/EBITDA Ratio	26%	21.9%	23.3%	24.4%	36.0%
Average Exchange rate USD/MYR	*3.27254*	*3.14780608*	*3.08852025*	*3.05838517*	*3.22194825*
Revenue/Oil Price MYR Ratio	0.86	0.93	0.84	0.85	0.82
EBITDA/Oil Price MYR Ratio	0.35	0.36	0.35	0.36	0.32

Source: PETRONAS 2013 Annual Report and authors' calculation

Impact on PETRONAS in 2015 under various scenarios

Using a similar process, we estimate the Revenue, EBITDA and Dividends based on 9 sets of cases: 1) crude oil price of USD40, 55 and 70 per barrel[4]; and 2) USDMYR exchange rate of 3.5, 3.75 and 4.0[5]. Table 2 shows that ranges for Revenue, EBITDA and Dividend. The bad case scenario occurs when crude oil price drops further to USD40 per barrel and the USDMYR strengthen slightly to 3.5. This will yield a Revenue of RM120 billion, EBITDA of RM49 billion and Dividend of RM13 billion based on the past 4 years average. Likewise, the rosy case scenario occurs when crude oil price recovers to USD70 per barrel but USDMYR depreciates to 4. In this case, Revenue, EBITDA and Dividends will be RM241 billion, RM98 billion and RM26 billion respectively. Since 2013 Dividend was RM27 billion, this rosy scenario will mean government receipt from Dividend is not impacted that much. However, using

[4] Crude oil price per barrel of USD55 is used as this is adopted in the revised Budget 2015 (http://www.themalaysianinsider.com/malaysia/article/budget-reduced-by-rm5.5-billion-deficit-target-changed-to-3.2).

[5] The actual USDMYR exchange rate on 20 January 2015 is 3.6112.

the case of USD55 per barrel, Dividend is likely to fall to RM19 billion if USDMYR depreciates slightly more to 3.75.

Table 2: Forecast results for PETRONAS in 2015 under different scenarios

Petronas Key Financial Indicators									
In Billion Ringgit	Estimation								
	2015								
Exchange rate estimation USD/MYR	3.5	3.75	4	3.5	3.75	4	3.5	3.75	4
Revenue	120.5	129.1	137.7	165.7	177.5	189.4	210.9	225.9	241.0
EBITDA	48.9	52.4	55.9	67.2	72.0	76.8	85.5	91.6	97.8
Dividend	12.9	13.8	14.7	17.7	19.0	20.3	22.6	24.2	25.8
Average Annual Crude Oil Price (Brent) USD	40			55			70		
Average Annual Crude Oil Price (Brent) MYR	140	150	160	192.5	206.25	220	245	262.5	280

Source: authors' calculation

In conclusion, PETRONAS' performance and its possible distribution to the Government in 2015 will be halved if the crude oil falls to USD40 per barrel and USDMYR holds close to the current level. However, a depreciating USDMYR will help cushion the impact of a weak crude oil.

4. PETRONAS' reserves and asset impairments

Oil reserves depend on the commercial viability

Oil and gas reserves are crucial to PETRONAS for obvious reasons. However, "'reserves' describes the recoverable quantity of oil and gas volumes that are *commercially viable* for development given the prevailing economic situation present at the time of estimation" (PETRONAS Annual Report 2013, emphasis added). Therefore, with the fall in crude oil price, there will potentially be some reserves which are no longer commercially viable. In such cases, the carrying value of these assets will be impaired.

Table 3 shows some selected recent overseas acquisition by PETRONAS, the month of purchase and the average crude oil price in the year of purchase. In 2012, PETRONAS purchased Progress Energy Resources Ltd., Canada (a natural gas producer in British Columbia and Alberta, Canada) for CAD5.5 billion and bought 75% of Talisman's Montney shale holding in the Farrell Creek and Cypress area of British Columbia, Canada for USD1.4 billion. PETRONAS also announced investment of USD10.25 billion into Azerbaijan and Turkmenistan in 2014.

Translated using the exchange rates at the time of acquisition, the four cases involve close to RM55 billion of investment. Due to USDMYR having depreciated since then, they would have been worth RM58 billion now if crude oil price had maintained above USD100 per barrel. However, since crude oil price has fallen substantially, there are strong grounds to believe that part of the assets will be impaired since their carrying amount would be less than the recoverable amount of the cash generating unit.

Indeed, the recent fall in oil price is expected to cause write downs in oil fields that might wipe out USD1.6 trillion in earnings for producing companies and nations globally this year according to Bloomberg[6]. Although the impairment loss does not involve an outflow of cash[7], it would have an impact on the profits before tax and thus the tax payable by PETRONAS to the government[8].

Table 3: Selected recent overseas purchases by PETRONAS

Investment			Purchase price ('million)			Impairment loss ('million)					
	Date of purchase	Average crude oil price per barrel in year of investment	Purchase price ('million)	Purchase price at purchase date (MYR 'million)	purchase price in 20 Jan 2015 (MYR 'million)	10%	10%	20%	20%	exchange rate (20.01.2015)	exchange rate (purchase date)
Progress Energy Resources Corp., Canada	12.2012	111.63	CAD 5,500	MYR 16,963	MYR 16,045	CAD 550	MYR 1,604	CAD 1,100	MYR 3,209	2.9172	3.08418
Talisman's Montney acreage (Note 1)	11.2013	108.56	USD 1,400	MYR 4,478	MYR 5,056	USD 140	MYR 506	USD 280	MYR 1,011	3.6112	3.198822
Azerbaijan	10.2014	104.65	USD 2,250	MYR 7,356	MYR 8,125	USD 225	MYR 813	USD 450	MYR 1,625	3.6112	3.269234
Turkmenistan (Note 2)	06.2014	104.65	USD 8,000	MYR 25,744	MYR 28,890	USD 800	MYR 2,889	USD 1,600	MYR 5,778	3.6112	3.217994
Total				***MYR 54,541***	***MYR 58,115***		***MYR 5,812***		***MYR 11,623***		

Notes:
1: 75% of Talisman's Montney shale holding in the Farrell Creek and Cypress areas of British Columbia, Canada. Investment made via Progress.
2: Petronas is investing USD8 billion in oil exploration and production under production sharign contracts. Source: The Star 11 June 2014

Sources:

1.) http://pec.nationalskm.com/wp-content/uploads/p2release.pdf
2.) http://www.bloomberg.com/news/2013-11-08/talisman-sells-montney-assets-to-progress-for-1-4-billion.html
3.) http://themalaysianreserve.com/main/news/corporate-malaysia/6928-petronas-buys-statoils-azerbaijan-assets
4.) http://www.thestar.com.my/Business/Business-News/2014/06/11/PETRONAS-INVESTS-US$8-BLN-IN-TURKMENISTAN-TO-BECOME-STRATEGIC-PARTNER/?style=biz

Figure 8 shows the breakeven levels for different production fields under different geological and geographical locations. The breakeven levels for North American shale and Onshore Rest of the World are estimated at USD65 and USD51 per barrel respectively. Although these respective levels are higher than or close to the assumption of USD55 per barrel used in the revised Budget 2015, it does not mean that PETRONAS' investments would be worthless because: 1) there are other factors

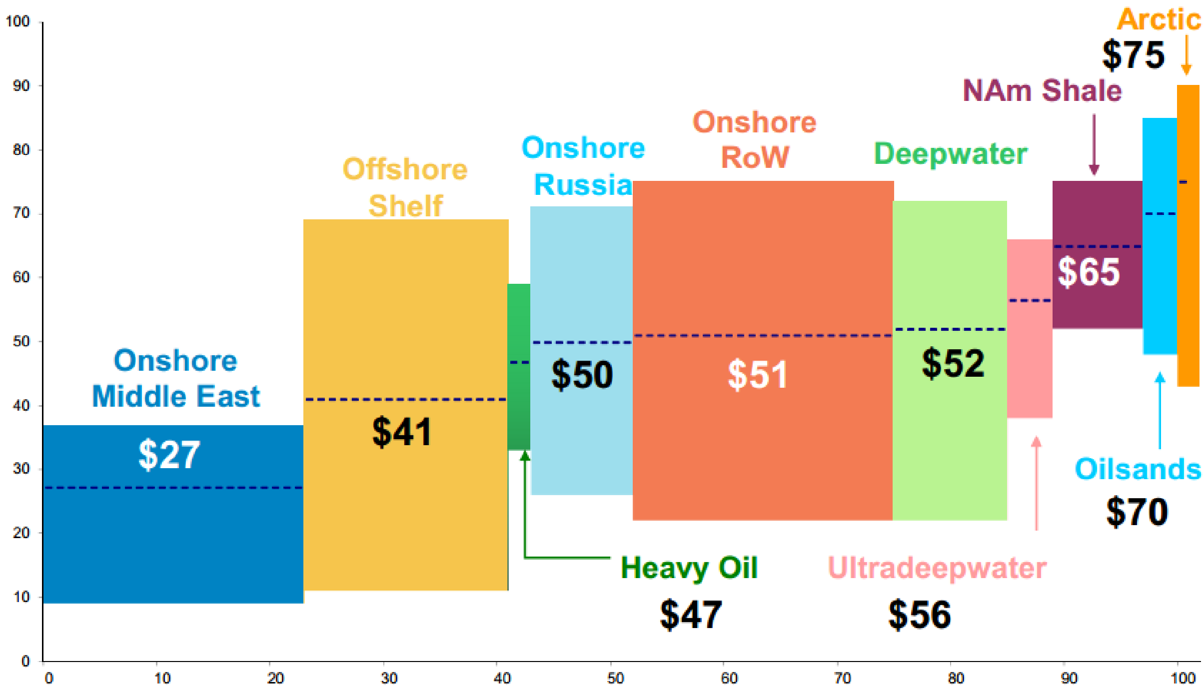
[6] http://www.bloomberg.com/news/2015-01-05/oilfield-writedowns-loom-as-market-collapse-guts-drilling-values.html. Recently Premier Oil warned of an impairment charge of USD300 million (http://www.reuters.com/article/2015/01/14/premier-oil-trading-idUSL6N0UT0Z220150114)

[7] Should crude oil price rises subsequent to an impairment, the impairment loss will be reversed and the asset will be revalued upwards again.

[8] Asset impairments in the oil and gas companies are part and parcel of the industry; and might affect the financial situation of companies. For example, PA Resources reported impairment charges and breaches in the loan covenants (https://globenewswire.com/news-release/2015/01/20/698347/0/en/PA-Resources-reports-impairment-charges-of-SEK-2-100-million-and-breaches-the-financial-covenants-in-its-bond-loans.html?print=1).

in determining the value of the oil field such as quality (viscosity) of the oil/gas, ease of extraction, cost of transportation etc.; and 2) owning the oil field conveys a real option which is of positive value. For example, PETRONAS has chosen to leave the gas deposits of Progress Canada not extracted with the deferment of the LNG project[9].Nevertheless, a 10% to 20% impairment to these four investments would mean a write down of RM5.8 billion to RM11.6 billion using current USDMYR exchange rate of 3.61. Should USDMYR depreciates further, the write down will be larger. This will certainly affect the taxation paid and the distribution level of Dividends in 2015.

Figure 8: Breakeven prices for crude oil produced in different regions of the world



Source: Seadrill Investor Presentation (Sep. 2014)

5.Conclusion

Recent crude oil price fall will affect PETRONAS' revenue and profitability through lower sale price per barrel and asset impairments. Some of the negative impact from the fall in crude oil price is cushioned by a depreciating USDMYR. However, the crude oil price (commodity) factor is likely to dominate the currency effect (barring significant depreciation) such that PETRONAS' corporation tax bill and her ability to pay dividends to the government will be affected.

Without more detailed information and assuming crude oil price of USD55 per barrel, USDMYR of 3.75, a 4-year average dividend payout ratio and Revenue to profitability ratio, 2015 Dividends might

[9] http://www.bloomberg.com/news/2014-12-03/petronas-to-defer-final-investment-decision-on-canada-project.html

fall to RM19 billion. A 10% impairment charge on the foreign investments made when crude oil price was more than USD100 per barrel might lead to a write down of RM5.8 billion. The report can be improved by additional accounting disclosure and more detailed information on segmental basis.