

Movement of crude oil and derivatives prices, retail prices and taxes in 2009

S. Vujinović

REVIEW

After dramatic changes in oil industry during 2008, movements in crude oil and derivatives prices in 2009 regained attention of overall public. This article deals with the relationships between crude oil price movements, wholesale and retail prices of derivatives, but for the first time it also gives an overview of relationship between crude oil prices and retail prices of derivatives.

For analysis of retail prices movements we have selected four European countries due to their significant role in derivatives consumption.

Movement of oil derivatives retail prices in Croatian market could not be presented in identical way as for the selected four European countries due to lack of data.

For this reason, based on the last price correction in 2009, the article presents price structure of motor gasoline and diesel fuel and the respective shares of net prices and taxes in total retail price.

Key words: crude oil, wholesale prices, retail prices, taxes

INTRODUCTION

Dramatic changes that marked global oil industry in 2008 instigated events that had various consequences, one of them was unexplainable movement of crude oil prices and along with them, derivatives prices.

Unexplainable steep rise of crude oil prices in 2008, despite some experts' explanations that there were no sound or realistic grounds for such rise, led to absolute uncertainty about future trends in oil industry, particularly when crude prices started to fall by the end of the year and were over 50% lower than at the beginning of 2008. At the beginning of 2009 the situation in crude oil and derivatives market started to stabilise.

Current price forecasts repeatedly show, and the actual movements confirmed it, that large international energy institutions are among those who make the biggest mistakes in price forecasting. Only some institutions and few rare but prominent experts pointed to the fact that crude price ranging 70 – 80 USD/bbl is realistic and that there were no economic reasons for the bubbles that happened.

A narrower analysis in this paper, apart from crude prices, presents also movements of wholesale crude prices in Rotterdam, which is a representative spot market in Northwest Europe.

Movement of retail prices of oil derivatives in four EU countries is presented at the end of the paper together with the movements of oil derivatives prices and taxes in these countries which are then compared with the situation in Croatia.

1. CRUDE OIL AND OIL DERIVATIVES PRICES IN 2009

The paper presents movements³ of prices (Table 1) of four types of crude: Brent as representative type for Western European market, WTI (West Texas Intermediate) as representative type for North American market, URAL as type of crude sold mainly in East and SE Europe and the last one is OPEC basket which comprises types of crude produced in OPEC member countries.

Crude oil price index movement in the period January - December gives a more clear picture, so Table 2 presets index movements.

The data from Table 2 indicate that WTI price had the highest increase of 79.3%, OPEC RB increased by 78.2%, Brent 70.4% and Ural price increased by 71.5%.

We point out once again that Brent and WTI (exclusively for North American market) are the two most representative types of crude traded on daily basis on the largest international exchanges and they serve as benchmark for other types of crude.

Table 1. Movement of crude prices in 2009 (USD/bbl)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
BRENT	43.59	43.07	46.55	50.44	57.27	68.55	64.61	72.84	67.39	72.76	76.66	74.28
WTI	41.50	39.08	48.00	49.82	59.21	69.68	64.23	71.05	69.34	75.73	77.84	74.41
URAL	43.09	42.32	45.65	49.05	56.85	68.38	64.85	72.27	67.09	72.67	76.32	73.88
OPEC	41.54	41.41	45.78	50.20	56.98	68.36	64.59	71.35	67.17	72.67	76.29	74.01

Note: Crude prices in the table above are calculated based on average daily prices.

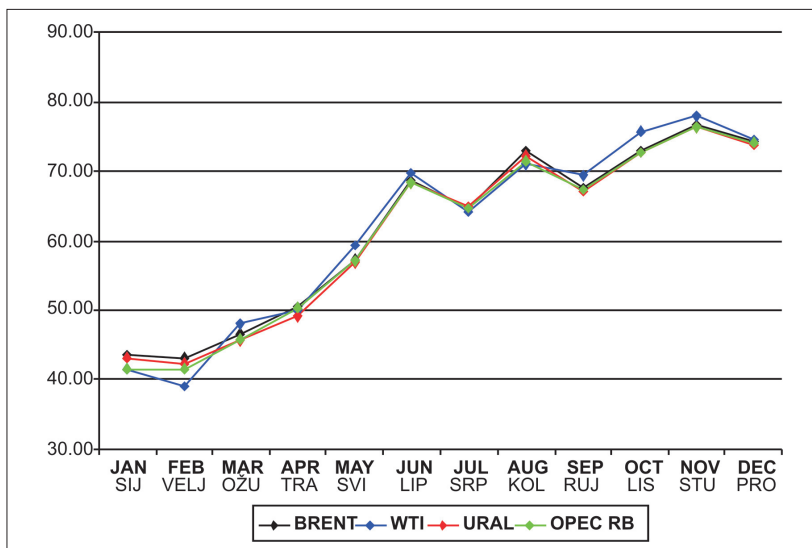


Fig. 1. Price movement of four types of crude (USD/bbl)

Sl. 1. Grafički prikaz kretanja cijena nafte (USD/bbl)

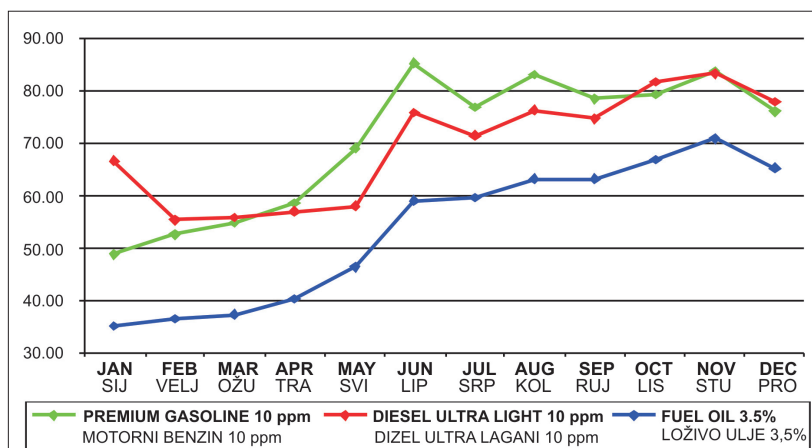


Fig. 2. Graphic presentation of oil derivatives price movements (USD/bbl)

Sl. 2. Grafički prikaz kretanja cijena naftnih derivata (USD/bbl)

Price differentials change in line with movements of average daily prices which can be followed by monitoring trading mechanisms.

Oil derivatives price movements; are reviewed on the basis of Rotterdam wholesale market as a representative North-western European market. Table 3 presents movement of individual derivative prices in 2009.

When we compare the data on oil derivatives price movements from Table 3 and graphic presentation in Figure 2 with crude oil price movements, it can be seen that, in general, derivatives prices follow crude oil price movements.

As mentioned above, prices in absolute amounts, particularly without comparisons, do not give a realistic picture of price movements, therefore Table 4 provides information on price indexes movements which reflect current changes more accurately.

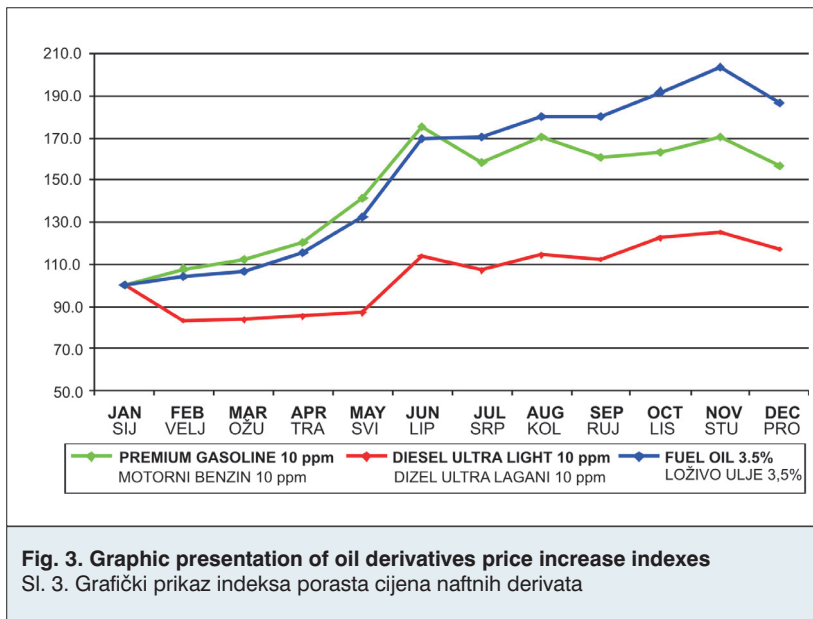
The presented price indexes provide a different picture compared with the data in previous years. Table 4 indicates that in the observed period fuel oil price increased by 86.6%, while premium gasoline price increased by 56% and diesel by only 17%.

2. OIL DERIVATIVES RETAIL PRICES IN EUROPEAN COUNTRIES

As quoted in the introduction of this article, in analysing individual derivatives retail price movements the author focused on two types of derivatives: premium gasoline and ultra light diesel in four European countries: France, Germany, Italy and Spain.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BRENT	100.0	98.8	106.8	115.7	131.4	157.3	148.2	167.1	154.6	167.0	175.9	170.4
WTI	100.0	94.2	115.7	120.0	142.7	168.0	154.8	171.2	167.1	182.5	187.6	179.3
URAL	100.0	98.2	105.9	113.8	131.9	158.7	150.5	167.7	155.7	168.6	177.1	171.5
OPEC RB	100.0	99.7	110.2	120.8	137.2	164.6	155.5	171.8	161.7	174.9	183.7	178.2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Premium gasoline	48.82	52.70	54.68	58.56	68.88	85.27	76.95	83.11	78.34	79.33	83.45	76.06
Diesel ultra light	66.57	55.32	55.90	56.88	57.93	75.69	71.44	76.18	74.77	81.60	83.24	77.91
Fuel oil 3.5%	34.98	36.50	37.29	40.33	46.31	59.14	59.52	63.06	62.96	66.93	70.96	65.26



Individual derivative price movement comprises data on net price, but also on imposed taxes and percentage of these components in the total price.

Premium gasoline retail prices from January to December in selected countries had balanced increase.

In France premium gasoline price increased by 14.5%, in Germany by 15.1%, Italy 14.8% and Spain 12%.

Tax burdens in the observed countries had no significant increase, the lowest taxes were in Spain – 6.6% while the highest increase of 10.3% was in Germany.

As for the ratio between net price and taxes, the structure is as follows:

- France: net price 33%, tax 67%
- Germany: net price 32.1%, tax 67.9%
- Italy: net price 37.6%, tax 62.4%
- Spain: net price 44.4%, tax 55.6%

Table 4. Oil derivatives price indexes on VPT Rotterdam

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Premium gasoline	100.0	107.9	112.0	120.0	141.1	174.7	157.6	170.2	160.4	162.5	170.1	156.0
Dieselultralight	100.0	83.1	84.0	85.4	87.0	113.7	107.3	114.4	112.3	122.6	125.0	117.0
Fuel oil 3.5%	100.0	104.3	106.6	115.3	132.4	169.1	170.2	180.3	180.0	191.3	202.9	186.6

Table 5. Premium gasoline retail price movement (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	1.087	1.137	1.131	1.168	1.200	1.263	1.232	1.267	1.247	1.228	1.268	1.255
GERM	1.128	1.170	1.165	1.225	1.263	1.336	1.284	1.335	1.307	1.292	1.316	1.299
ITA	1.111	1.141	1.162	1.189	1.228	1.296	1.270	1.297	1.276	1.256	1.289	1.287
SPA	0.847	0.897	0.907	0.948	0.977	1.035	1.015	1.057	1.064	1.045	1.074	1.068

Table 6. Premium gasoline net price movement (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	0.303	0.345	0.340	0.310	0.397	0.450	0.424	0.453	0.437	0.421	0.454	0.443
GERM	0.293	0.328	0.324	0.374	0.406	0.468	0.424	0.467	0.443	0.431	0.451	0.437
ITA	0.362	0.387	0.404	0.427	0.459	0.516	0.494	0.517	0.499	0.483	0.510	0.501
SPA	0.334	0.370	0.375	0.410	0.435	0.485	0.468	0.504	0.480	0.464	0.489	0.484

Table 7. Taxes imposed on premium gasoline price (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	0.784	0.792	0.791	0.858	0.803	0.813	0.808	0.814	0.810	0.807	0.814	0.812
GERM	0.835	0.842	0.841	0.851	0.857	0.868	0.860	0.868	0.864	0.861	0.865	0.862
ITA	0.749	0.754	0.758	0.762	0.769	0.780	0.776	0.780	0.777	0.773	0.779	0.786
SPA	0.513	0.527	0.532	0.538	0.542	0.550	0.547	0.553	0.584	0.581	0.585	0.584

Table 8. Diesel fuel retail price movement (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	0.980	0.975	0.939	0.971	0.970	1.011	1.002	1.033	1.024	1.020	1.051	1.044
GERM	1.045	1.029	0.988	1.036	1.050	10.780	1.061	1.110	1.090	1.097	1.108	1.095
ITA	1.050	1.056	1.021	1.045	1.062	1.096	1.088	1.118	1.099	1.094	1.124	1.118
SPA	0.845	0.855	0.838	0.863	0.870	0.905	0.892	0.930	0.947	0.943	0.970	0.965

Table 9. Diesel fuel net price movement (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	0.391	0.387	0.357	0.384	0.383	0.417	0.410	0.436	0.428	0.425	0.451	0.445
GERM	0.408	0.395	0.360	0.401	0.412	0.436	0.422	0.463	0.446	0.452	0.461	0.450
ITA	0.452	0.457	0.428	0.448	0.462	0.490	0.484	0.509	0.493	0.489	0.514	0.509
SPA	0.434	0.435	0.411	0.433	0.439	0.469	0.458	0.491	0.476	0.473	0.496	0.492

Table 10. Taxes imposed on diesel fuel price (EUR/lit)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRA	0.589	0.588	0.582	0.587	0.587	0.594	0.592	0.597	0.596	0.595	0.600	0.599
GERM	0.637	0.634	0.628	0.635	0.638	10.344	0.639	0.647	0.644	0.645	0.647	0.645
ITA	0.598	0.599	0.593	0.597	0.600	0.606	0.604	0.609	0.606	0.605	0.610	0.609
SPA	0.411	0.420	0.427	0.430	0.431	0.436	0.434	0.439	0.471	0.470	0.474	0.473

Diesel fuel retail price movement is very similar to premium gasoline. In the period from January to December diesel fuel retail price increased in France by 12%, in Germany 12.8%, Italy 13% and Spain 11%.

However, in case of diesel fuel, tax burden was slightly lower. In France, Germany and Italy it was above 7% while in Spain it was slightly above 5%.

As for the ratio between net price and taxes, the structure is as follows:

- France: net price 41%, tax 59%
- Germany: net price 40%, tax 60%
- Italy: net price 44.2%, tax 55.8%
- Spain: net price 50.9%, tax 49.1%

RETAIL PRICES IN CROATIA, BASIC DATA

In the observed one-year period taxes on oil derivatives in the Republic of Croatia have undergone some minor amendments.

Motor gasoline and diesel fuel price structure; does not indicate separately the contribution for motorway construction – for Hrvatske ceste (HC) and Hrvatske autoceste (HAC) (amounting to 1.20 kn/lit) but this component is included in excise tax.

The reason for introducing this change is not very clear. It was known that these contributions imposed per litre of motor gasoline or diesel fuel for motorway construction (HC and HAC) represented off budget revenue; possibly, the reason lies in presenting lower budget than it really is.

In addition, VAT is now 23% instead of 22%, but it is not the end of burdens, because there is also an amount for financing Compulsory Stocks Agency⁵, i.e. dues for financing the work of the Agency have also been changed.

In 2008 a share in gasoline price per litre for financing the work of Compulsory Stock Agency was 0.116 kn/lit, while in 2009 it increased to 0.151 kn/lit.

The situation is very similar with diesel fuel: in 2008 a share in diesel price for financing the work of Compulsory Stock Agency was 0.161 kn/lit, while in 2009 it was 0.254 kn/lit.

Increased amount for financing compulsory stocks is not very high in absolute amount, however, this additional burden in case of motor gasoline increased by 30% but in case of diesel even 57.8%.

In order to illustrate the price structure of motor gasoline and diesel fuel and respective share of net price and taxes, we shall analyse INA's retail prices⁴ on its petrol stations on 29 December 2009 when price of euro 95 gasoline was 7.69 kn/lit and euro diesel 7.13 kn/lit.

Consequently, in Croatia share of net price in litre of gasoline is 30.6% and taxes 73.4%, while in case of diesel, net price is 48% and taxes 52%.

3. RELATIONSHIP BETWEEN CRUDE OIL PRICES AND DERIVATIVES RETAIL PRICES

In this chapter we shall compare crude price movements with gasoline and diesel retail price movements for two European countries: France and Germany (Table 11).

Table 11. Crude oil and derivatives price movements (USD/bbl)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BRENT	43.59	43.07	46.55	50.44	57.27	68.55	64.61	72.84	67.39	72.76	76.66	74.28
MOTOR GASOL												
FRANCE	63.59	70.27	68.20	77.90	86.17	100.80	95.23	102.70	99.52	99.21	107.63	105.72
GERM	61.37	66.77	64.87	78.53	88.24	104.77	95.23	105.88	100.80	101.59	106.99	104.29
DIESEL												
FRANCE	82.04	78.86	71.54	80.60	83.15	93.32	92.21	98.73	97.46	100.16	106.99	106.20
GERM	85.53	80.45	72.18	84.10	89.51	97.62	94.91	104.93	101.59	106.52	109.38	107.47

Table 12. Relationship between oil derivatives retail price and price of crude oil

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MOTOR GASOL.												
FRANCE	145.88	163.15	146.51	154.44	150.46	147.05	147.39	140.99	147.68	136.35	140.39	142.32
GERM	140.79	155.03	139.36	155.69	154.07	152.84	147.39	145.36	149.58	139.62	139.56	140.40
DIESEL												
FRANCE	188.20	183.10	153.68	159.79	145.19	136.13	142.72	135.54	144.62	137.66	139.56	142.97
GERM	196.21	186.79	155.10	166.73	156.30	142.41	146.90	144.10	150.75	146.40	142.68	144.68

Derivatives prices are expressed in USD/bbl, according to the data published by IEA – International Energy Agency.

The relationship between crude oil and derivatives prices is presented in Table 12.

At first sight the data from Table 12 reveal big differences, particularly in diesel price movements, however, we should take into account seasonal price fluctuations which are one of typical features of fuel prices, specifically diesel fuel. In addition, there is a growing trend of higher price increase of diesel compared to gasoline.

The analysis of absolute value movements throughout the year indicates that nothing spectacular happened in the market, i.e. that the relationship between the observed prices remained more or less constant.

Without entering into in-depth analysis of refining margins, a well known truth should be restated: in general, refining margins do not determine crude prices and on the other hand, fixed represent a relatively small portion of refining margin.

When crude oil prices are high, it is logical to expect high derivatives prices, however, it does not mean that everybody will earn more than before.

In OGJ magazine, in the „Statistics“ column, the published data indicate that crude oil accounts for about

80% of costs in structure of refined barrel costs at prices ranging from 60-80 USD/bbl, hence, the price of crude has the most significant impact on derivatives price. Consideration of other impacts is not within the scope of this paper.

CONCLUSION

After abrupt changes in crude oil prices in 2008 with steep rise in the H1 and then sharp decline in the H2, despite relatively stable demand and supply, due to reasons which did not lie in oil industry economics (more detailed considerations of these impacts were discussed in the papers presented by the members of Oil Scientific Council of the Croatian Academy of Sciences and Arts), and finally, forecasts on stabilisation of crude prices ranging 60 – 80 USD/bbl started to realise in 2H 2009.

Oil derivatives prices move in line with the movement of crude oil prices, currently very much aligned with previous trends; relative decrease of gasoline prices and relative increase of middle distillates prices reflects less emphasized trends but milder intensity of change.

The only radical change is increase of heavy fuel oil prices as a result of higher demand than supply as refineries increase conversion capacities and process heavy residues in order to obtain higher value distillates, so there is less feedstock for fuel oil.

Movement of retail prices, primarily of motor fuels, is under strong influence of tax policy. The calculation of fuel price elements and their relationship should be a subject of a more comprehensive analysis which should also include refining margins and all other relevant factors that have impact on the studied movements.

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Author:
Mr.sc. **Saša Vujinović**