

September 21, 2017

World prices for oil and metals have ceased to correlate2

Lower sensitivity of oil prices to US dollar exchange rate3

Ruble volatility follows declining oil volatility4

Russian non-oil exporters benefit on shale oil

Commodity market trends

- **Shale oil producers have untied oil prices from prices to other commodities...** Duration of investment cycles and similarity of forecast prerequisites for demand trends determine the synchronism of shortages and surpluses in the commodity markets and prices for oil and metals. However, short investment cycles demonstrated by shale oil producers reduce the volatility of oil prices and accelerate the rebalancing of the oil market.
- **...reduced the impact of US dollar exchange rate on oil prices...** Up to a half of the volatility of commodity prices was due to the volatility of the US dollar against other world currencies. But if shale oil producers remain marginal in the oil market, the dollar rate will cease to be a price driver, as the costs of shale oil producers do not depend on the dollar exchange rate.
- **...for Russian non-oil exporters to get extra income of up to RUB 400 billion in 2017,** as the growing commodity prices (primarily, for metals) are not accompanied by rising oil prices and stronger ruble in 2017.

Vasilii Tanurcov

Associate Director,
Corporate Ratings Group

+7 (495) 139-0344

vasilii.tanurcov@acra-ratings.ru

Natalia Porokhova

Director, Head of Research and
Forecasting Group

+7 (495) 139-0490

natalia.porokhova@acra-ratings.ru

Contact for media

Maria Mukhina

Operating Director

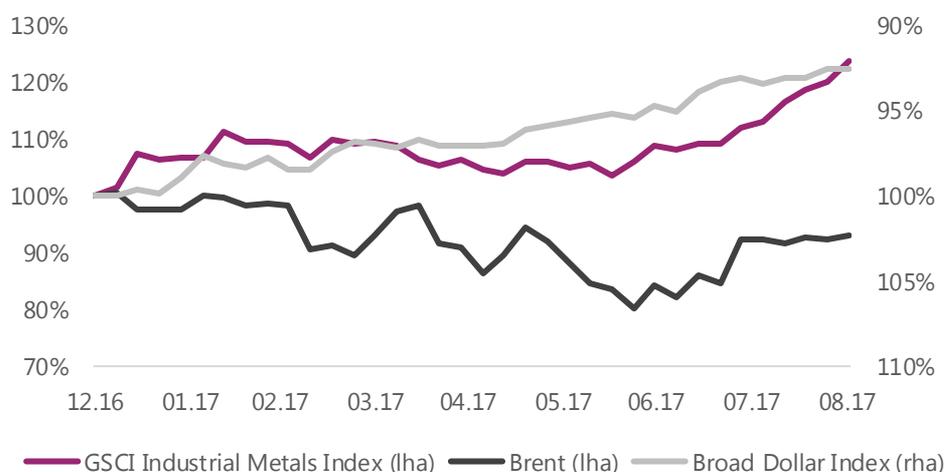
+7 (495) 139-0480

maria.mukhina@acra-ratings.ru

World prices for oil and metals have ceased to correlate

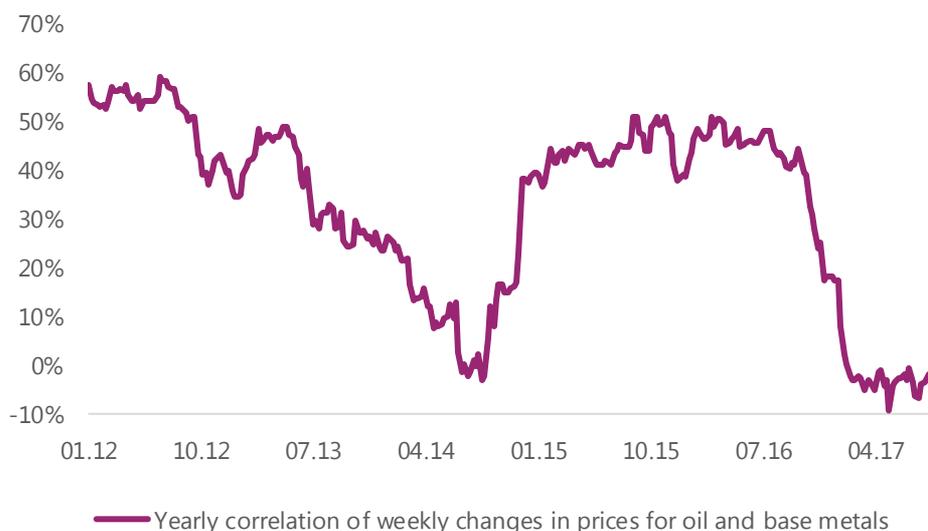
In January–August 2017, the Industrial Metals Index rose by 23.6%, while oil prices fell by 7.2%. This is in contrast to the generally strong correlation between oil and industrial metals prices, which is caused by the driving factors (the growth rates of the global economy in general and emerging markets in particular) similar for both markets, and matching durations of investment cycles. Periods of reduced correlation between oil and industrial metals prices have taken place before, but they were limited in time and fundamentally justified. For example, the weaker correlation seen in 2013–1H2014 was primarily due to geopolitical reasons: the growth in oil supply was limited due to conflicts in the Middle East and North Africa, while oil prices included a substantial risk premium.

Figure 1. Prices for oil and industrial metals and US dollar exchange rate



Source: ACRA estimates

Figure 2. Atypical decorrelation of prices for oil and industrial metals since late 2016



Source: ACRA estimates

On the other hand, sharp decorrelation of prices for oil and industrial metals observed since late 2016 looks atypical in terms of both duration and driving factors. We believe that such decorrelation reflects the fundamental changes in the oil market related to growing shale oil production volumes, and therefore it is of a long-term nature. Shale oil production in the USA is characterized by high but rapidly falling production rates of newly drilled wells, as a result, the payback period of such wells is very short — about 2–3 years. Thanks to the high production rates of new wells, producers can effectively hedge future production volumes, thereby reducing sensitivity to oil prices. Rapidly decreasing well flow rates, in turn, lead to a rapid decline in production when drilling of new wells is stopped, thereby speeding up the market rebalance in case of an excess supply. Another feature of shale oil producers is their ability to increase rapidly drilling volumes under favorable market conditions, which is related both to the developed infrastructure in well drilling areas and the excess drilling capacities in the USA. The flexibility of shale oil production makes shale oil a key balance factor in the oil market: an increase of its share in the global oil production will decrease price volatility and make oil price range relatively narrow (compared with historical price fluctuations) for a rather long period of time (until the main US shale basins are depleted).

Lower sensitivity of oil prices to US dollar exchange rate

Broad Dollar Index reflects the rate of US dollar against currencies of 26 trading partners of the USA, weighted by trade turnovers.

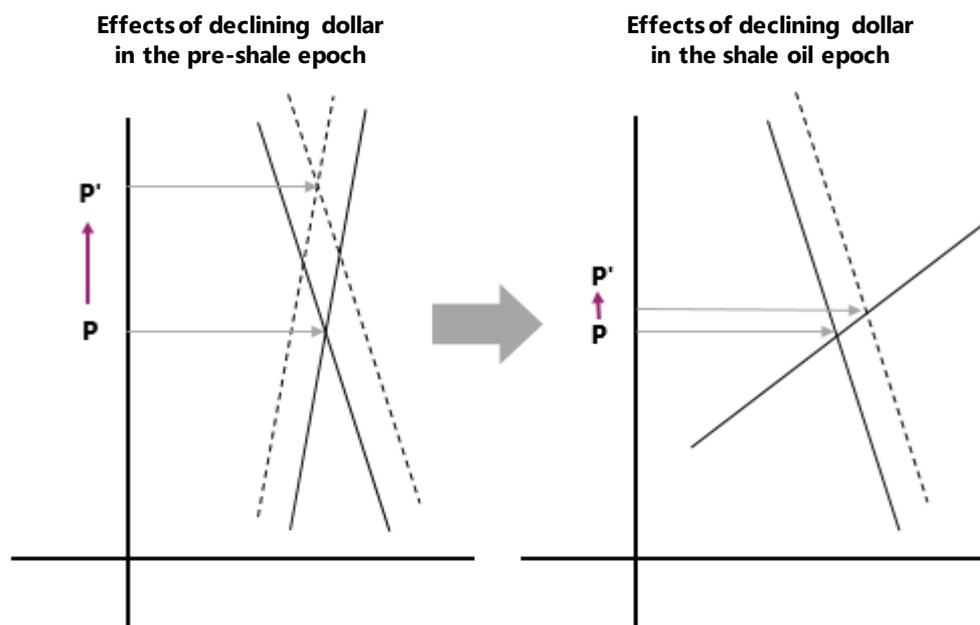
The US dollar exchange rate has been a driver common for all commodity markets. For the purposes of this paper, the Broad Dollar Index is used as a reference value of US dollar. The US dollar exchange rate influences commodity markets, from both the demand side and the supply side, and up to a half of the volatility in commodity prices can be explained by the volatility of the Broad Dollar Index. In our opinion, one of the key drivers of the growing prices for industrial metals seen in 2017 was precisely the weakening dollar, while the change in the supply and demand balance had a significantly lower impact on such prices.

In this paper, we will consider only the immediate impact of the dollar on commodity prices, although the accelerating economies that are US trading partners make dollar weaker, which is also reflected in commodity prices. In terms of demand, weaker dollar increases the purchasing power of non-US consumers, expressed in dollars (which, in the supply-demand ratio diagram, leads to a shift of the demand curve towards the upper right corner). On the supply side, with the dollar weakening, the costs of non-US producers, expressed in dollars, increase (which leads to a shift of the supply curve towards lower left corner). The price elasticity of supply for most commodities is extremely low, reflecting a long investment cycle and a significant share of fixed costs in the total cost of raw materials. The price elasticity of demand is also low, which is associated with a relatively low share of the prime cost of raw materials in the total cost of products, as well as inability to replace quickly certain types of raw materials or the lack of substitutes under the current state of technology. As shown in Figure 3, the weakening dollar leads to a noticeable increase in commodity prices with a slight change in sales volumes. Historically, this is reflected in the negative beta ratio of commodities against the dollar exchange rate, which is significantly higher than 1 in absolute value (-2.16 for industrial metals and -2.33 for oil in the period from 2010 to the present time).

Beta reflects the sensitivity of price for one asset to variation of price for other asset.

The above relationship was generally inherent to both the industrial metal market and the oil market. However, with the growing role of shale oil, the situation is changing significantly. Short lifecycles of shale oil wells and a significant share of variable costs in the total costs of shale oil producers significantly increase the price elasticity of supply. At the same time, US companies are now playing the role of marginal producers, and their dollar costs do not react to the weakening dollar. As a result, no shift of the supply curve is observed. Thus, the effect of changing dollar exchange rate (provided that the shale oil producers remain profitable thanks to sufficiently high oil prices) is much lower than that in the past (see Fig. 3).

Figure 3. Effect of weaker dollar on the oil market supply-demand ratio in the pre-shale and shale epochs



Source: ACRA estimates

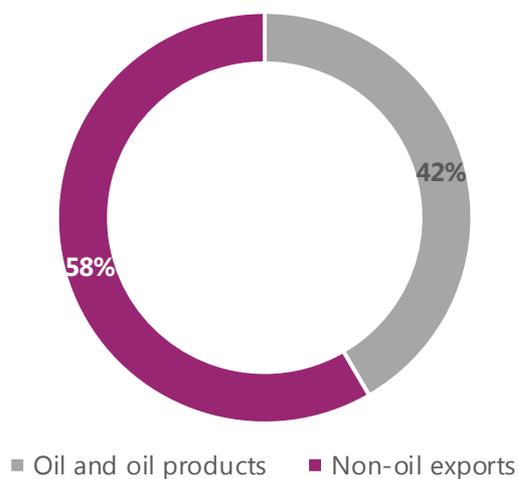
Taking into account heavy dependence of ruble exchange rate on oil prices, one can expect that the decreasing impact of DBI volatility on oil prices will decrease the ruble volatility but increase the volatility of ruble prices for industrial metals. Thus, in case dollar goes further down, dollar and ruble prices for metals will grow, with relatively stable ruble exchange rate and oil prices. In case dollar gets stronger, the decline in dollar prices for metals will cause a fall in ruble prices sharper than in the past.

Ruble volatility follows declining oil volatility

Lower sensitivity of oil prices to the dollar exchange rate is important for the Russian economy too, which is primarily due to the high dependence of the ruble exchange rate on oil prices. Today, dollar decline without an equivalent increase in oil prices is beneficial for non-oil exporters. For eight months of 2017, the average Brent price is about 52.2 USD/bbl, with the RUB/USD exchange rate of 58.2. At the same time, if the dependence of oil prices on BDI remains unchanged, we could expect the average Brent price at 59 USD/bbl and the average RUB/USD exchange rate of about 55. A cheaper ruble means higher profits for exporters: due to a lower strengthening rate of ruble, the profit of non-oil exporters turned

out to be 5.8 pps higher in January–August 2017, while the ruble revenues of non-oil exporters grew by RUB 265 billion, and the positive revenue difference may amount to RUB 400 billion in 2017. In the long term, the declining volatility of oil prices and ruble, accordingly, should decrease the risks in the Russian economy, including by reducing the risk of relapse of the Dutch disease.

Figure 4. Lower volatility of oil and ruble will improve the conditions for 58% of Russian export (2016 data)



Source: ACRA estimates

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Analytical Credit Rating Agency (Joint-Stock Company), ACRA (JSC)
75, Sadovnicheskaya embankment, Moscow, Russia
www.acra-ratings.com

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