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## Commodity prices recovery to shore up Russia's metals & mining industry

### Russian iron & steel industry 2021 outlook

- **Steel prices are not expected to plunge any further.** Construction of new steel plants will be limited, and the industry overproduction problem will be resolved by China according to the 1970s EU scenario. By 2021, worldwide capacity utilization will reach 75%, and commodity prices will rise compared to the average 2016 levels. During this period, rising production costs will push global hot-rolled steel coils prices to levels above USD 500 per ton (from USD 484 per ton in 2016).
- **The ore price drop will continue in 2017–2018.** By 2021, iron ore concentrate prices will reach USD 76 per ton (+14% to the current year's expected level). Demand for Chinese iron ore is sagging; yet, China's mining costs will continue to determine global prices. As a result, the inflation-driven spike of iron ore mining costs in China will bolster prices on iron ore raw materials.
- **Coking coal prices have halted for the first time since they began sliding in 2012.** During the forecast period, coking coal prices will reach USD 140–150 per ton (+12% to the current year's expected level). U.S. coal exports will keep dwindling, but the U.S. coal mining industry, which can balance out the market deficit in the face of the growing prices, will remain a pivotal element for the world market price. Production costs of U.S. coal miners will be growing at an annual rate of up to 2%; there will be no significant coal price surges.
- **Russia's steel consumption is projected to undergo a gradual recovery; its production will amount 72 mln tons (+2.6% against the current year).** The recovery process will be backed by a slow restoration of construction volumes to the 79.3 mln sq meters level (short of the 2014–2015 peak but 13% higher than the pre-crisis 2013 level). Replacements for deteriorated equipment plus construction of new oil and gas pipelines will also contribute to the industry turnaround.
- **Credit quality of Russian metals & mining sector companies will be on the rise.** Their cash flows will grow, and the maximum positive effect from the price recovery on both the international and Russian markets will be felt by companies with high self-sufficiency of raw materials.

Table 1. Russia's iron &amp; steel industry and world coking coal, iron ore, and hot-rolled steel coils prices: the 2017–2021 forecast

| Indicator   | Measuring Unit                 | Fact          |               |               | Estimate      | Forecast      |               |               |               |               |
|---|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   |                                | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          | 2019          | 2020          | 2021          |
| <b>Steel production</b>   | <b>mln tons</b>                | <b>69</b>     | <b>71</b>     | <b>71</b>     | <b>70</b>     | <b>70</b>     | <b>71</b>     | <b>71</b>     | <b>71</b>     | <b>72</b>     |
| Steel production capacity   | mln tons                       | 83.3          | 86.0          | 86.5          | 87.3          | 88.5          | 90.2          | 89.7          | 89.2          | 88.7          |
| Capacity unitization  | %                              | 83%           | 83%           | 82%           | 80%           | 79%           | 78%           | 80%           | 80%           | 81%           |
| <b>Cast iron production</b>                                       | <b>mln tons</b>                | <b>49.9</b>   | <b>51.4</b>   | <b>52.4</b>   | <b>51.3</b>   | <b>52.7</b>   | <b>53.7</b>   | <b>54.5</b>   | <b>53.9</b>   | <b>54.4</b>   |
| Sheet steel production  | mln tons                       | 31            | 28            | 28            | 28            | 29            | 29            | 30            | 29            | 30            |
| Bar steel and structural steel production                         | mln tons                       | 23            | 24            | 23            | 23            | 22            | 22            | 23            | 23            | 23            |
| Production of billets and slabs for export                        | mln tons                       | 13            | 14            | 15            | 15            | 15            | 15            | 15            | 16            | 16            |
| Lump coke production  | mln tons                       | 28.5          | 29.3          | 28.9          | 29.3          | 29.3          | 29.5          | 29.7          | 29.7          | 29.8          |
| <b>Production of iron ore concentrate (IOC)</b>                   | <b>mln tons</b>                | <b>102</b>    | <b>102</b>    | <b>101</b>    | <b>100</b>    | <b>101</b>    | <b>103</b>    | <b>105</b>    | <b>104</b>    | <b>105</b>    |
| Production of iron ore pellets (IOP)                              | mln tons                       | 36            | 36            | 35            | 34            | 40            | 41            | 41            | 41            | 42            |
| Production of direct reduced iron (DRI)                           | mln tons                       | 5             | 5             | 5             | 5             | 6             | 6             | 6             | 7             | 7             |
| IOC exports   | mln tons                       | 11            | 12            | 11            | 11            | 8             | 8             | 8             | 8             | 9             |
| IOP exports   | mln tons                       | 9             | 9             | 7             | 7             | 11            | 11            | 11            | 11            | 11            |
| <b>Coking coal mining</b>   | <b>mln tons</b>                | <b>74</b>     | <b>74</b>     | <b>75</b>     | <b>75</b>     | <b>75</b>     | <b>76</b>     | <b>77</b>     | <b>77</b>     | <b>78</b>     |
| Coking coal exports   | mln tons                       | 21            | 22            | 21            | 21            | 21            | 21            | 22            | 22            | 23            |
| <b>Thermal coal mining</b>  | <b>mln tons</b>                | <b>261</b>    | <b>280</b>    | <b>288</b>    | <b>290</b>    | <b>294</b>    | <b>298</b>    | <b>302</b>    | <b>305</b>    | <b>308</b>    |
| Thermal coal exports  | mln tons                       | 133           | 130           | 129           | 131           | 133           | 135           | 138           | 140           | 143           |
| <b>Hot-rolled steel coils, RF (EXW Moscow)</b>                    | <b>RUB per ton, net of VAT</b> | <b>18,110</b> | <b>19,817</b> | <b>24,414</b> | <b>28,570</b> | <b>29,050</b> | <b>28,999</b> | <b>30,212</b> | <b>31,714</b> | <b>32,447</b> |
| <b>Rebar, RF (EXW Southern Federal District)</b>                  | <b>RUB per ton, net of VAT</b> | <b>19,317</b> | <b>20,641</b> | <b>22,152</b> | <b>25,941</b> | <b>26,376</b> | <b>26,331</b> | <b>27,431</b> | <b>28,795</b> | <b>29,461</b> |
| Hot-rolled steel coils price on the U.S. market                   | USD per ton                    | 632           | 657           | 448           | 491           | 489           | 498           | 515           | 531           | 540           |
| Cast iron price on the RF market                                  | RUB per ton, net of VAT        | 12,260        | 13,937        | 15,007        | 15,625        | 15,887        | 15,859        | 16,522        | 17,344        | 17,745        |
| Cast iron export price, RF (FOB the Black Sea)                    | USD per ton                    | 385           | 392           | 248           | 248           | 247           | 251           | 260           | 268           | 272           |
| Scrap metal, RF (CRT Central Federal District)                    | RUB per ton, net of VAT        | 9,450         | 10,428        | 11,244        | 11,654        | 11,849        | 11,829        | 12,323        | 12,936        | 13,235        |
| <b>Iron ore concentrate, RF (FCA)</b>                             | <b>RUB per ton, net of VAT</b> | <b>2,739</b>  | <b>2,408</b>  | <b>2,330</b>  | <b>2,475</b>  | <b>2,226</b>  | <b>2,253</b>  | <b>2,574</b>  | <b>2,861</b>  | <b>2,929</b>  |
| Iron ore pellets, RF (FCA)  | RUB per ton, net of VAT        | 3,243         | 2,744         | 3,140         | 3,395         | 3,054         | 3,090         | 3,531         | 3,924         | 4,017         |
| Iron ore concentrate, China (CIF Qingdao)                         | USD per ton                    | 136           | 97            | 57            | 66            | 58            | 60            | 68            | 75            | 76            |
| Coke, RF (FCA Northern Federal District)                          | RUB per ton, net of VAT        | 5,595         | 5,470         | 8,941         | 13,040        | 15,222        | 14,693        | 14,741        | 14,957        | 14,530        |
| <b>Coking coal, Zh &amp; GZh grades, RF (FCA)</b>                 | <b>RUB per ton, net of VAT</b> | <b>3,575</b>  | <b>3,532</b>  | <b>4,544</b>  | <b>5,742</b>  | <b>6,703</b>  | <b>6,470</b>  | <b>6,492</b>  | <b>6,587</b>  | <b>6,399</b>  |
| Coking coal price (hard coking coal), Australia (FOB contract)    | USD per ton                    | 152           | 126           | 102           | 131           | 148           | 148           | 147           | 146           | 141           |
| Thermal coal RF, 6,000 kcal (FCA)                                 | RUB per ton, net of VAT        | 1,350         | 1,310         | 1,693         | 1,649         | 1,802         | 1,972         | 1,993         | 1,964         | 1,900         |
| Thermal coal export price FR, 6,000 kcal (FOB Vostochny, Vysotsk) | USD per ton                    | 78            | 74            | 57            | 57            | 61            | 68            | 68            | 66            | 63            |

Source: ACRA

## The period of rapidly falling prices in the global iron & steel industry is over, slow recovery ahead

At the start of 2016, global iron & steel industry overcame the negative trends it displayed in 2013-2015 and entered a period of recovery, which unlike the previous turnarounds (following the 2005 and 2009 recessions) is expected to be less than speedy, as the declining economic growth in China will keep it from charging ahead as the world's economy power engine.

The iron & steel commodity and steel product markets will be primarily affected by the following factors:

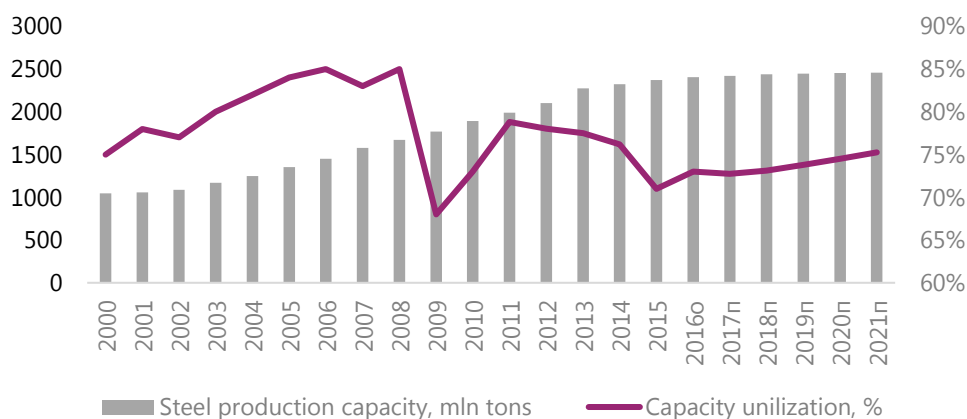
- A forcible reduction of China's steelmaking and coal mining capacities (global capacity utilization will be on the rise);
- Growing production costs of mining ore and coal from such marginal producers as China and the United States (commodity prices will be pushed up).

Russia will mirror the global trends with due consideration for devaluation factors.

### Plant closures in China to reduce the excess supply of steel

ACRA expects that by 2021, in the absence of heavy economic jolts, global capacity utilization will reach 75%.

**Figure 1. Forecast for global iron & steel capacity and capacity utilization dynamics**



Source: OECD, Worldsteel, ACRA estimates

In 2015, global steel mill capacity utilization registered at 72%, which was due to a global slump in steel consumption against the backdrop of a large number of new steel mills commissioned between 2004 and 2015, mostly in China.

In 2015, the slowing domestic steel consumption in China triggered the growth of steel exports from China by 20% to the level of 112.4 mln tons. In light of this, many countries were forced to impose safeguard measures against Chinese steel.

International pressure had forced the Chinese government to consider industry consolidation and closure of inefficient small scale facilities. By 2020, it plans to have decommissioned enterprises with a total steelmaking capacity of 150 mln tons and total coal mining capacity of up to 500 mln tons. The Chinese steelmaking industry's hefty debt load of USD 1.5 trillion may act as a major obstacle to such a downsizing.

*China's steel mills take up over 50% of the global capacity; their partial closure will lead to a growth of the remaining world capacity.*

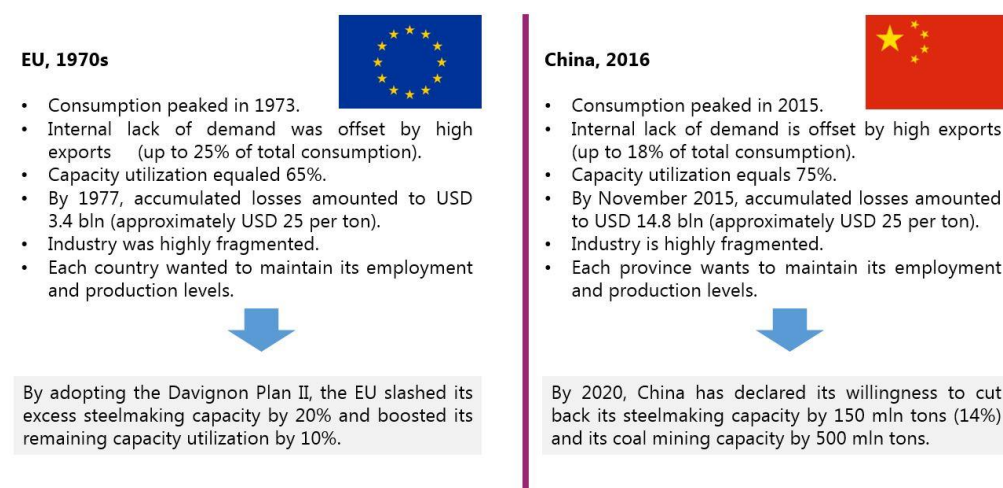
*The recovering commodity prices will cause steel prices to leap as well, as manufacturers try to make up for the growing production costs.*

*Global capacity utilization is a reflection of the world business climate: under 80% means a global supply surplus, over 80% signals a deficit.*

*The planned reduction of capacity in China's iron & steel industry and coal mining confirms the conclusion made by ACRA in its August 9, 2016 research entitled ["China no longer invests in raw materials."](#)*

Since the current state of affairs on the market has a historical precedent, ACRA has reasons to believe that China will deliver. It will presumably take advantage of the successful track record of the EU, which in the 1970s was compelled to adopt a policy (known as the Davignon Plan II) allowing it to rationalize excess capacities, retrain personnel, and restore profitability. The upcoming optimization in China is expected to be painless: it will primarily affect small scale manufacturers, while the key enterprise giants located in the coastal provinces are unlikely to be involved.

**Figure 2. Comparison of steelmaking industries of the EU in 1970s and China in 2016**



Source: OECD, ACRA

Due to the expected recovery of global steel demand and a simultaneous slowing pace of commissioning new steelmaking facilities (including the anticipated reduction of the number of enterprises in China), capacity utilization of steel mills should gain momentum within the next five years. That will have a positive effect on the state of the market and will help steelmakers strengthen their pricing positions.

### Chinese producers' costs to back up prices on iron ore raw materials

According to ACRA estimates, in 2016–2021, demand for Chinese ore will dwindle from 507 mln tons in 2016 to 424 mln tons by 2021 (-3% annually) due to a growing supply of cheaper ore from Australia and Brazil.

The low downsizing rate of China's domestic steel production is linked to a reduced number of iron ore mining facilities that are planned for commissioning in Australia, Brazil, and South Africa, which will be increasing only by an average of 25–30 mln tons per annum during the forecast period. This moderate pace cannot make up for the natural decommissioning caused by the depletion of the global mineral resource base (30–40 mln tons per annum), and hence, demand for the costly Chinese ore will endure.

During the forecast period, the role of Chinese iron ore producers as the global market marginal suppliers will remain unchanged, as it is their production cost dynamics that will determine the global price trends on iron ore.

The anticipated acceleration of China's inflation rate (from 1.7% in 2016 to 3% in 2021) will push iron ore prices upward. According to projections, the CNY will not be devalued within the above timeframe. On the other hand, since a smaller

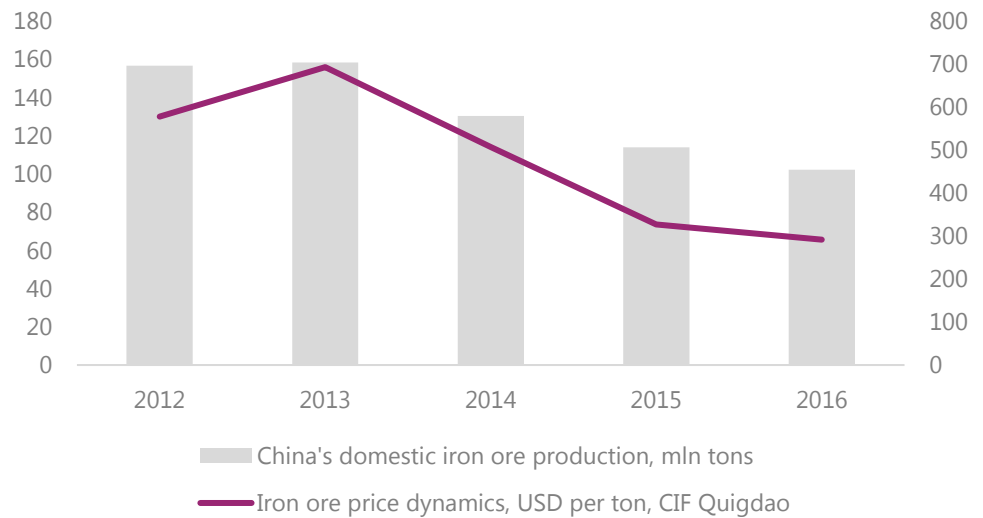
*China's iron ore is characterized by a low iron content and a high content of residual elements; therefore, production of good quality iron ore in China is unique in terms of its high costs.*

*There will be no complete crowding out of Chinese iron ore from the global market.*

*A marginal producer is defined as the last, or highest-cost, producer capable of meeting the existing demand without shutting down.*

number of low efficiency facilities will be required to meet the demand, a reduced need for Chinese ore will exert a downward pressure on the prices.

**Figure 3. Link between iron ore prices and volume of domestic production in China**

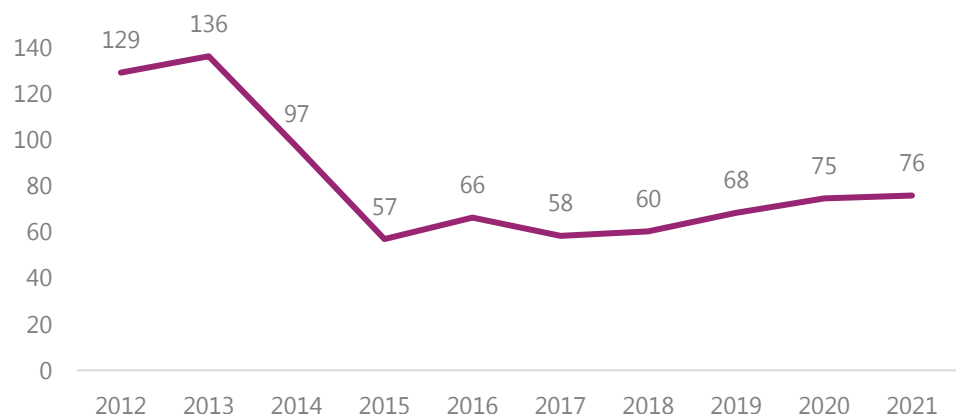


Source: Bloomberg, ACRA

ACRA expects that between 2017 and 2018, the mutual influence of those factors will lead to the iron ore price falling from an average USD 66 per ton in 2016 to USD 61 per ton by 2018. Within the said time interval, we will be observing a small global market surplus: projects launched in 2011–2014 when prices were high, will have reached their peak capacities.

Starting from 2019, commissioning of new ore mining facilities is expected to deescalate, and the resulting deficit will be balanced off by increased iron ore production in China where production costs are higher than the world average. As a result, in 2019–2021, prices on iron ore concentrate, Fe content 62%, in the ports of China will reach USD 76 per ton<sup>1</sup>.

**Figure 4. Iron ore concentrate (Fe 62%) price forecast, CIF China, USD per ton**



Source: Bloomberg, ACRA estimates

*A decreasing demand for Chinese iron ore will force the most cost-intensive players off the market.*

<sup>1</sup> Hereinafter, prices are averaged for year and given in nominal terms.

## Market balancing by U.S. producers to push for higher prices on coking coal

Between 2017 and 2021, coking coal prices will go up to USD 140–150 per ton (+12% to the current year average): market deficit resulting from actions by the Chinese authorities will be compensated by U.S. suppliers, whose production costs are higher than the global average. This means that as a result of market deficit reduction, the current spot prices will be sliding downward until they reach the ACRA-forecasted values.

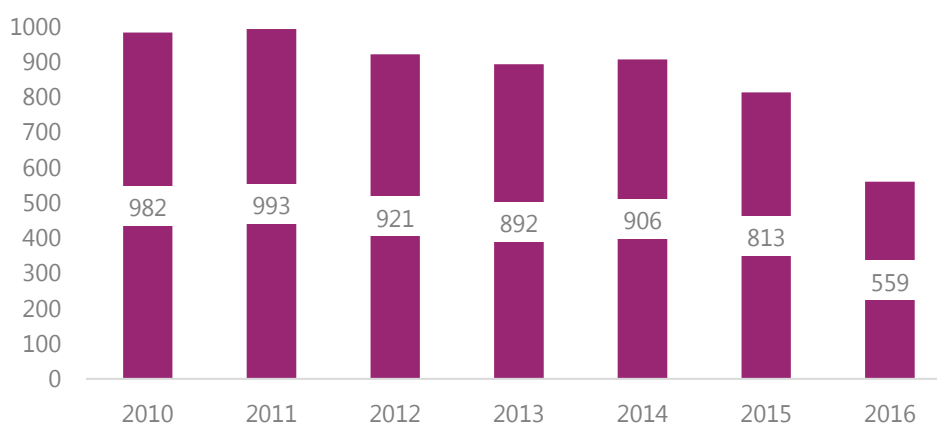
In August–October 2016, spot market prices on coking coal soared up to USD 252 per ton due to the following two factors:

- forced reduction of the annual number of working days by Chinese coal mining enterprises from 330 to 276 (in August 2016, coal mining in China dropped by 10% year-on-year);
- bankruptcies of Arch Coal and Peabody Energy, the largest coal producers in the United States that followed in the footsteps of Alpha Natural Resources, Patriot Coal, and Walter Energy.

By the end of 2016, China plans to have closed coal mines with a total annual capacity of up to 250 mln tons (as of July 2016, it had closed mines with the combined annual output of around 95 mln tons). All in all, by 2020, China is expected to have shut down another batch of mines worth of 250 mln tons of extracted coal per year. However, these plans are being materialized at a rather slow pace. The unwillingness of local Chinese authorities to follow up on the federal government's decision had brought about the above mentioned industry-wide move to cut the number of working days in order to avoid overproduction.

Estimates show that in 2016, bankruptcies of several U.S. coal miners have significantly reduced the total volume produced by core assets of U.S. industry leaders (by 31%, or 253 mln tons). In addition, shutdowns of small enterprises are continuing: in the first six months of 2016, their number was reduced to 12 and their combined capacity to 2.5 mln tons per year.

**Figure 5. Reduction of coal production volumes in the U.S., mln tons**



Source: EIA, ACRA estimates

*The reduction was enforced as a countermeasure against the high risk of personal injury in smaller mines (over 70% mines have annual production volumes of less than 300 thsd tons).*

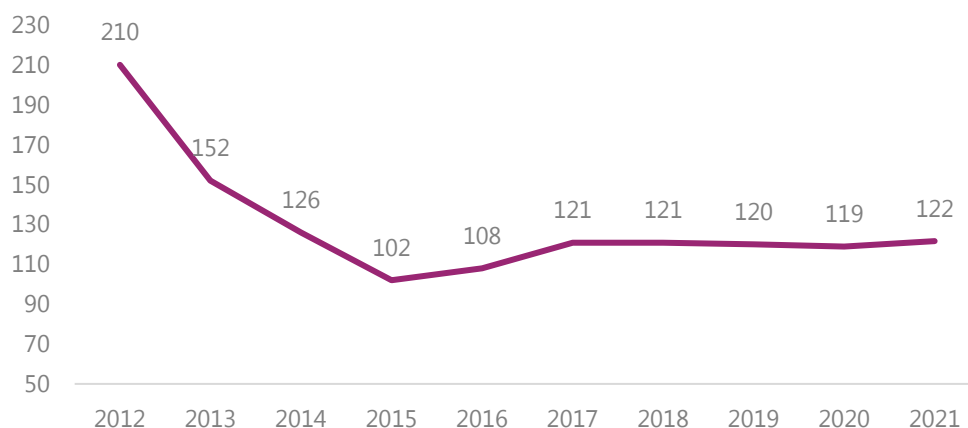
*A significant portion of U.S. mines had avoided closure due to the opposition of trade unions. Companies were able to bypass their resistance by filing bankruptcies.*

*Demand for U.S. coal is growing. Compensating for the global deficit will force manufacturers to revert to costlier production cycles, and those higher costs incurred by U.S. coal miners will be determining the world market price on coal.*

The projected deficit will cause the demand for costly U.S. coal to grow: the effect of the 2007–2012 peak investments in coal mining, which led to launches of a series of high-quality low production cost facilities in Australia, has predominantly worn out by now.

The world market will feel the need for increased supplies of expensive U.S. coal; thus, U.S. producers' costs will be responsible for coal price dynamics worldwide. That said, costs incurred by U.S. suppliers will not grow substantially given the country's projected low inflation not higher than 2%) between 2017 and 2021.

**Figure 6. Coking coal price forecast, FOB Australia, USD per ton**



Source: Bloomberg, ACRA estimates

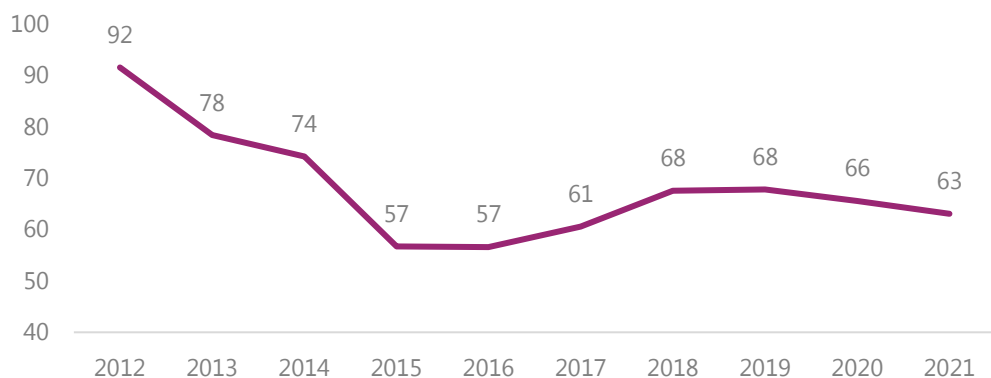
### The U.S. inflation to support thermal coal prices

*In the U.S., thermal coal is being increasingly replaced by natural gas (by retiring older facilities and transferring a number of newer ones to natural gas), the price on which is strongly correlated with the USD value index.*

By 2021, ACRA anticipates a recovery of thermal coal prices back to USD 63 per ton and higher (+10% to the expected 2016 level). This comeback will be made possible by a growing demand in Asia and global thermal coal shortages due to the actions by the Chinese authorities.

In September–October 2016, the above mentioned actions caused spot prices on thermal coal to spike as high as USD 80 per ton; however, during the forecast period, these prices are expected to settle back down.

It should be noted that concerns about stricter environmental requirements leading to a complete phasing out of coal generation should be considered groundless at this point. While the US and the EU are indeed cutting back on coal production (by retiring older facilities and transferring a number of newer ones to natural gas), South Korea plans to have commissioned 18 GW (up to 50 mln tons worth of coal demand) by 2029, and as a result of India commissioning new thermal coal power plants, its demand for coal may grow by 190 mln tons by 2018.

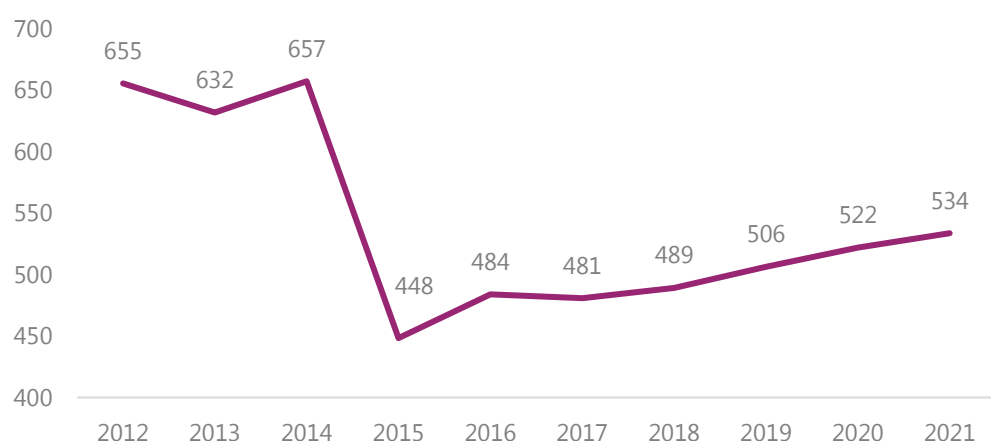
**Figure 7. Thermal coal price forecast, FOB Australia, USD per ton**

Source: Bloomberg, ACRA estimates

As a result, global coal shortages will be covered by U.S. producers, which have cut back production and started bankruptcy procedures amid the low prices of 2015 and early 2016. Despite this, they have managed to retain their core assets and will be able to maintain moderate exports growth for a few years going forward. This means that cost production dynamics of the U.S. coal industry will be driving market prices on coal, while the strengthening U.S. dollar will put a cap on U.S.-exported coal prices.

### Russian steel prices to follow the global upward trend

Given the above factors (rising commodity prices and growing capacity utilization of steel production enterprises), ACRA expects steel prices to take off but be somewhat held back by the strengthening U.S. dollar. As a result, the U.S. prices on hot-rolled steel coils will overcome the USD 500 per ton barrier in the forecast period.

**Figure 8. Price forecast on hot-rolled steel coils, FOB Midwest, USD per ton**

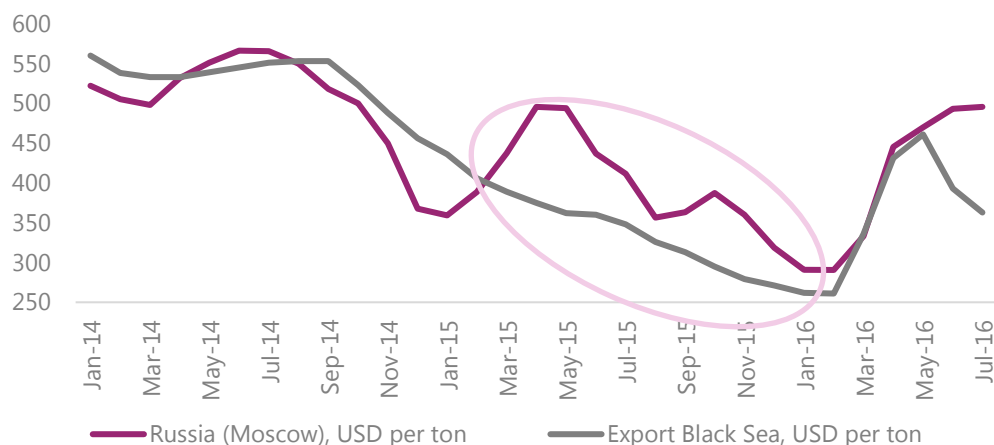
Source: Bloomberg, ACRA estimates

*Price differences in Russia and the world between March 2015 and March 2016 were related to the RUB dynamics, through taken as a whole, there is a substantiated link between domestic and world prices.*

Prices on steel as well as iron & steel raw materials in Russia are strongly correlated with world market prices, therefore hot-rolled sheet steel will stay at or above RUB 28 thsd per ton, net of VAT (the average 2016 warehouse price in Moscow) and climb to RUB 32 thsd per ton by 2021. During the forecast period, rebar prices will follow a similar trend, rising from RUB 26 thsd per ton in 2016 to RUB 29 thsd by 2021.



Figure 9. Russian market and global market price dynamics



The RUB forecast is in line with ACRA's September 12, 2016 macroeconomic outlook entitled ["Russian Economy: No Knock Out to Recession Yet."](#)

Russia's largest steel consumers of 2015:

Construction — 74%;

Tubular products — 16%;

Machinery & equipment — 8%.

Source: Data by the Gazprombank Centre for Economic Forecasting, ACRA estimates

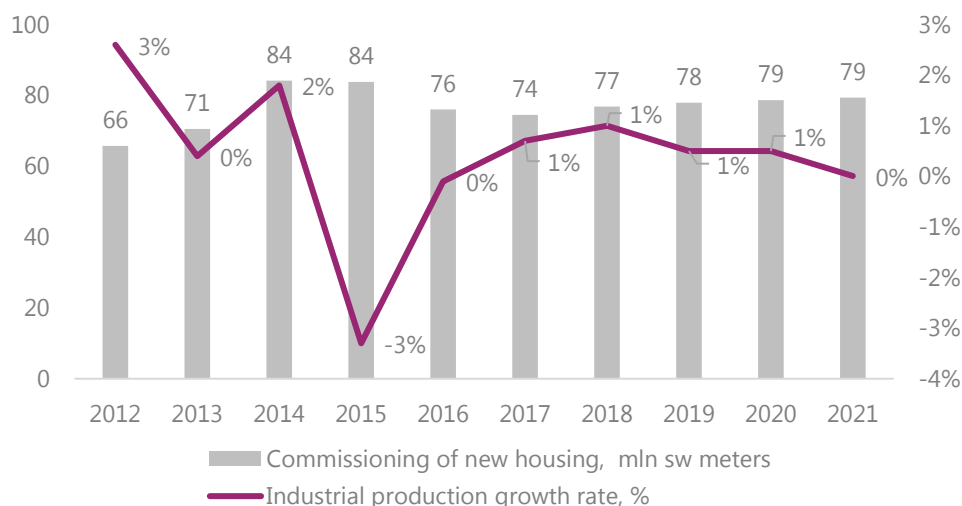
The rising cost of steel sheets will be accompanied by a growth of market prices on iron & steel raw materials. Thus, the price on coking coal concentrate of Zh & GZh grades will rise from RUB 5,750 per ton in 2016 to USD 6,400 per ton by 2021. The growth rate of prices on iron ore raw materials will be restrained by the more moderate recovery pace of global prices on those products from RUB 2,500 to RUB 2,900 per ton.

### Recovery of construction rates to stimulate Russia's demand for steel, albeit not sooner than 2018

In the current year, the average capacity utilization in the Russian iron & steel industry will climb up from 80% to 81%, mainly owing to further reductions in the country's open-hearth furnace capacity. By 2021, steel production in Russia will grow by 3% (to 72 mln tons), overwhelmingly due to increased domestic consumption.

A key factor affecting steel consumption will be a step-by-step recovery of the construction industry (its share in the Russian steel consumption is estimated at 74%). The rebound process will begin in 2018; however, ACRA does not anticipate the industry to have equaled its 2014–2015 record. The volume of new housing to be commissioned in 2018 will exceed the pre-crisis levels of 2012 and 2013, and this increase will be related to the lowering mortgage interest rates due to the reduction of the Bank of Russia's key interest rate.

Figure 10. Dynamics of main sources of demand for steel



Source: Ministry of Economic Development, ACRA estimates

Russia's largest pipeline construction projects include the following:

- Nord Stream 2, Power of Siberia, Turkish Stream, and Northern Lights gas pipelines;
- Kuyumba-Taishet (2<sup>nd</sup> phase), Yug Project, and Sever Project oil pipelines, and the project for boosting oil product transportation into the Moscow Region.

Replacements for still operational but deteriorated oil and gas pipelines (45% of which have a 70-75% degree of wear and tear) will be a key factor determining demand for tubular goods. Moreover, a positive impact on demand will be rendered by the construction of new pipelines. The ongoing pipeline projects will require up to 2.5–3.3 mln tons of large diameter pipes, meaning that despite the growing tax burden and sliding oil prices, which hinder investments in the oil & gas sector, demand for new pipes will match its 2011 and 2015 peak levels.

### Rising prices to help improve steel companies' financial performance levels

ACRA assesses this forecast as moderately positive for the Russian iron & steel industry. The greatest favorable effect is anticipated with regards to companies that have diversified asset portfolios and high self-sufficiency of raw materials. Non-integrated producers of steel and sheet steel can also count on improving their key debt indicators and liquidity indicators.

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