Steel

Resources and Energy Quarterly September 2018

To produce 1,000 kg of crude steel in a blast furnace, 1,400 kg of iron ore are needed. Additionally, 800 kg of metallurgical coal are required.

Steel consumption per capita (kilograms per person), 2017

- United States: 327 kg
- European Union: 335 kg
- China: 568 kg
- Japan: 592 kg
- India: 72 kg
- Indonesia: 58 kg
- Brazil: 107 kg
- Africa: 30 kg
- Australia: 270 kg

Major steel producers, 2017

- China: 49%
- European Union: 10%
- Rest of the world: 16%
  - Japan: 6%
  - India: 6%
  - United States: 5%
  - South Korea: 4%
  - Russia: 4%

Steel use by sector

- 50% Construction
- 16% Mechanical machinery
- 15% Other applications
- 13% Automotive
- 4% Electrical equipment
- 2% Domestic appliances
3.1 Summary

- World steel production increased strongly in the seven months to July compared to last year, driven by high steel prices and margins, robust production in China — the world’s largest steel maker — and a rise in the capacity utilisation of steel mills in major producing nations.
- World steel production is forecast to rise to 1.8 billion tonnes in 2020, as broad growth elsewhere offsets declining production in China — where ongoing supply-side reforms continue to reduce capacity.
- World consumption is forecast to rise to 1.8 billion tonnes in 2020, led by growth in emerging markets, while China — the world’s largest consumer — is forecast to decline by 0.5 per cent annually, driven by an expected slow-down in infrastructure projects and construction.
- The threat of escalating protectionist trade policies is a key risk to the outlook, with the potential to disrupt downstream demand for steel related products and vehicle manufacturing.

3.2 World consumption and production

World steel production increased by 5.1 per cent in the seven months to July, compared to the same period in 2017. Most countries reported higher production, particularly China which accounts for half of world production.

China’s steel production forecast to peak in 2018

China’s steel production is forecast to increase in 2018. Production growth was stronger than expected in the first half of 2018, and will likely grow in the September quarter, as steel makers bring forward production ahead of government-mandated winter production restrictions — expected to apply from October 2018 to March 2019.

Upcoming winter production cuts are expected to have a greater impact on Chinese steel makers than they did the same period last year. The 2018–19 winter restrictions aim to reduce blast furnace capacity at selected cities by 30–50 per cent. Over 440 million tonnes of steel capacity is expected to be affected by the pollution controls, which will likely lower the demand for steel-making inputs, iron ore and metallurgical coal.

Chinese steel consumption is forecast to increase by 2.8 per cent in 2018, driven by strong demand from the construction sector as ‘Tier 2’ (medium sized) cities continue to develop at a rapid pace. Steel consumption is also expected to be boosted by fiscal stimulus which will likely create favourable conditions for residential construction over the short term.

Figure 3.1: China steel prices and world capacity utilisation

Source: Bloomberg (2018) Beijing Custeel E-Commerce and World Steel Association
China's steel consumption is forecast to decline by 1.9 per cent in 2019 and by a further 2.3 per cent to 776 million tonnes in 2020, largely driven by slower urban residential construction and infrastructure investment.

China's steel production is expected to decline over the outlook period to 2020, driven by a suite of government policies, including stricter environmental regulations, supply-side reforms reducing some loss-making production capacity, and reducing debt.

China’s steel exports decreased by 13 per cent year-on-year in the first eight months of 2018 to 47 million tonnes, as strong domestic demand absorbed more local output. Exports are expected to be increasingly directed towards emerging markets in South East Asia, however, lower production will limit the potential for strong export growth (Figure 3.2).

Figure 3.2: China's steel consumption, production and exports

![Graph showing China's steel consumption, production, and net exports from 2014 to 2020.]


India set to become the second largest steel producer in 2018

India crude steel production increased by 5.5 per cent year-on-year in the first seven months of 2018 to 62 million tonnes. India is expected to overtake Japan as the world’s second largest steel producer in 2018, with production reaching 108 million tonnes. Production will be driven by the ongoing expansion of steel-making capacity, as producers strive to keep pace with rising Indian consumption. India’s steel consumption is forecast to grow strongly over the outlook period, driven by rapid urban population growth, substantial government investment in infrastructure, housing and urban development, and growing manufacturing sector. India’s steel output is forecast to grow by 6.7 per cent annually to reach 123 million tonnes in 2020, representing 7.0 per cent of world production.

Favourable economic conditions supporting the steel industry elsewhere

Steel production in the European Union increased by 2.0 year-on-year in the first seven months of 2018, to 102 million tonnes. Production in the EU has been buoyed by higher steel prices driven by growth in the construction and manufacturing sectors. Steel output in the EU is forecast to remain steady over the outlook period, increasing by 1.3 per cent annually from 172 million tonnes in 2017 to 175 million tonnes in 2020.

Japan’s steel production increased by 0.8 per cent year-on-year in the first seven months of 2018, to 61 million tonnes. Steel production in Japan is forecast to grow modestly in the short-term, supported by a rebound in capital expenditure and demand from 2020 Olympics-related projects.

Protectionist trade policies are a key risk to the outlook for both regions, especially with the US now considering tariffs on vehicle imports.

Steel output in United States to be boosted by tariffs on imports

Steel production in the United States grew by 3.6 per cent year-on-year in the first seven months of 2018, driven by rising domestic steel prices. US steel tariffs appear to be impacting the market — US Hot Rolled Coil (HRC) steel prices increased from US$647 a short tonne in January to US$913 a short tonne in August. The capacity utilisation of US steel mills increased to 78 per cent in August — the highest since September 2014.

Imports of steel products subject to the 25 per cent tariff increased by 14 per cent year-on-year in the six months of 2018, as US residents brought forward purchases before the tariffs took effect. However, the tariffs are expected to reduce steel imports over the outlook period.
### Table 3.1: World steel consumption and production

<table>
<thead>
<tr>
<th>Crude steel consumption</th>
<th>Million tonnes</th>
<th>Annual percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017&lt;sup&gt;s&lt;/sup&gt;</td>
<td>2018&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td>World steel consumption</td>
<td>1,701</td>
<td>1,759</td>
</tr>
<tr>
<td>China</td>
<td>788</td>
<td>810</td>
</tr>
<tr>
<td>European Union 28</td>
<td>172</td>
<td>175</td>
</tr>
<tr>
<td>United States</td>
<td>107</td>
<td>111</td>
</tr>
<tr>
<td>India</td>
<td>96</td>
<td>102</td>
</tr>
<tr>
<td>Japan</td>
<td>75</td>
<td>73</td>
</tr>
<tr>
<td>South Korea</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Russia</td>
<td>43</td>
<td>42</td>
</tr>
<tr>
<td>Brazil</td>
<td>22</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crude steel production</th>
<th>2017</th>
<th>2018&lt;sup&gt;f&lt;/sup&gt;</th>
<th>2019&lt;sup&gt;f&lt;/sup&gt;</th>
<th>2020&lt;sup&gt;f&lt;/sup&gt;</th>
<th>2018&lt;sup&gt;f&lt;/sup&gt;</th>
<th>2019&lt;sup&gt;f&lt;/sup&gt;</th>
<th>2020&lt;sup&gt;f&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>World steel production</td>
<td>1,689</td>
<td>1,771</td>
<td>1,768</td>
<td>1,759</td>
<td>4.8</td>
<td>–0.2</td>
<td>–0.5</td>
</tr>
<tr>
<td>China</td>
<td>850</td>
<td>886</td>
<td>861</td>
<td>842</td>
<td>4.2</td>
<td>–2.8</td>
<td>–2.2</td>
</tr>
<tr>
<td>European Union 28</td>
<td>168</td>
<td>172</td>
<td>174</td>
<td>175</td>
<td>2.4</td>
<td>0.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Japan</td>
<td>105</td>
<td>106</td>
<td>108</td>
<td>109</td>
<td>1.5</td>
<td>2.1</td>
<td>0.8</td>
</tr>
<tr>
<td>India</td>
<td>101</td>
<td>108</td>
<td>115</td>
<td>123</td>
<td>6.5</td>
<td>6.8</td>
<td>6.9</td>
</tr>
<tr>
<td>United States</td>
<td>82</td>
<td>86</td>
<td>90</td>
<td>90</td>
<td>5.4</td>
<td>4.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Russia</td>
<td>71</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>0.6</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>South Korea</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>70</td>
<td>–0.2</td>
<td>–0.3</td>
<td>–0.4</td>
</tr>
<tr>
<td>Brazil</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>–1.2</td>
<td>0.3</td>
<td>0.8</td>
</tr>
</tbody>
</table>

**Notes:**<sup>s</sup> estimate, <sup>f</sup> forecast.

**Source:** World Steel Association (2018); Department of Industry, Innovation and Science (2018)