

**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION
STEEL COMMITTEE**

Steel Market Developments (Q2 2017)

This document provides a brief update of steel market developments. The OECD Steel Committee discussed a draft of the report at its meeting on 23-24 March 2017 and has approved it for declassification following comments from delegates which are reflected in this document. The report will be made available on the Steel Committee website: oe.cd/stlmkdev.

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Contact:

**Anthony DE CARVALHO, Senior Economist/Policy Analyst, Anthony.DECARVALHO@oecd.org,
+(33-1) 45 24 93 77**

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Brief overview of recent steel market developments

Summary

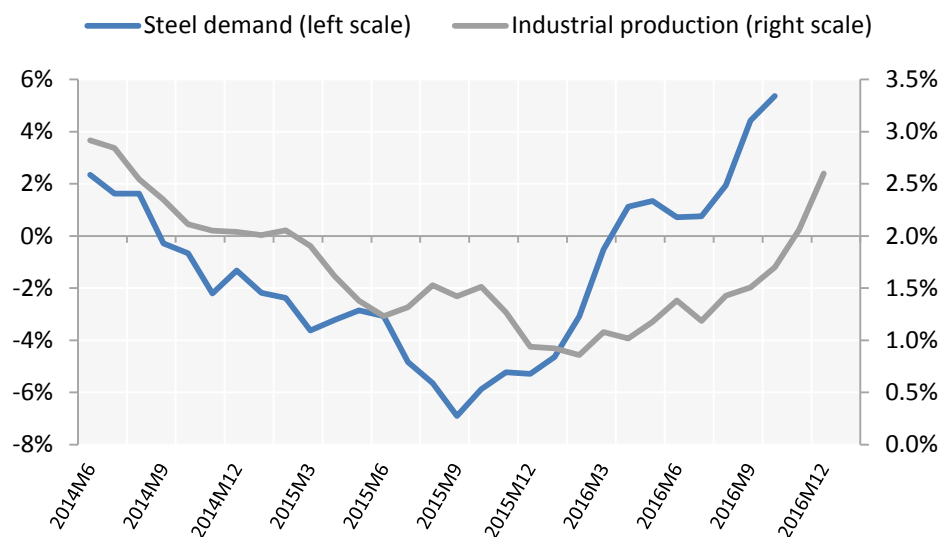
1. Conditions in the world steel industry have improved over the past year, with indications of a return to growth in global steel demand and production, a recovery (although possibly temporary) in steel prices and improvements in profitability in some segments of the market. However, capacity utilisation rates continue to be very low, creating difficulties for an industry with high fixed costs, such as steel. Steel trade seems to have stabilised at a high level, while the global steel export ratio has declined recently, partly the result of increased trade measures in recent years.

2. This document provides a very brief summary of recent developments in selected steel market indicators, mainly steel consumption, production, trade, prices and profitability. The OECD Steel Committee discussed a draft of the report at its meeting on 23-24 March 2017 and has approved it for declassification following comments from delegates which are reflected in this document. The report will be made available on the Steel Committee website, at: oe.cd/stlmktdev.

Steel consumption

3. Because steel is a key intermediate good used by the industrial sector, demand for steel often leads the cycle in industrial production. As indicated by Figure 1, it appears that the trough of the steel demand growth cycle was reached around September 2015, approximately half a year before global industrial production growth began to recover. However, steel demand growth returned to positive territory only during the course of 2016, and for many economies only very late in the year. In the first 10 months of 2016, the monthly consumption indicator for the major steel-consuming economies increased by approximately 1.9% in year-on-year terms.

Figure 1. Consumption of hot-rolled steel products, major economies, and world industrial production growth



Note: Combined steel consumption of the following economies: Brazil, China, Germany, India, Japan, Korea, Russia and the United States. Industrial production excludes construction.

Sources: ISSB (for steel consumption) and CPB World Trade Monitor (for volume of world industrial production).

4. In North America, U.S. shipments of steel stood unchanged at 86.5 million net tonnes in 2016, according to the American Iron and Steel Institute, just about the same level as that recorded in 2015. However, given the decline in steel imports in 2016, apparent consumption of steel is expected to have fallen by several percent, the second consecutive year of demand contraction for the U.S. However, energy-related steel demand could be an important factor for the U.S. market going forward. The U.S. oil rig count is up significantly and oil production, which bottomed out in the third quarter of 2016, is expected to rise in 2017 and 2018, according to the March 2017 forecast update of the U.S. Energy Information Administration.¹ In Canada, market conditions remained difficult in 2016, with two large companies undergoing restructuring processes while under creditor protection and large layoffs of workers. In Mexico, on the other hand, apparent consumption of steel increased by around 3% in 2016, still supported by demand from the flourishing automotive sector.

5. Market conditions are improving in the region and demand for steel is expected to increase this year and possibly in the coming few years, according to some market analysts. This reflects expectations of expansionary fiscal policy by the new U.S. Administration, including corporate and personal tax cuts and actions to raise steel-intensive infrastructure investment. Key energy projects are also being expedited, and the recent revival of two major oil pipeline projects would add demand for steel tubular goods. The Canadian government's recent approval of energy pipeline projects is also expected to support demand and production of the country's steel sector going forward.

6. In South America, steel market conditions remained very difficult in 2016, with steel consumption falling sharply in Brazil, Argentina, Chile, Colombia and Ecuador. In Brazil, the steel sector faced a severe downturn in 2015 and much of 2016, reflecting the deep economic recession and slumping durable goods manufacturing, particularly motor vehicle production. Unfair trade practices leading to significant import penetration have been of considerable concern to local steel producers. Nevertheless, economic recovery in the region could lead to a turnaround in steel demand conditions in 2017, and the beginning of this year has already seen a turnaround in production to positive growth.

7. In the European Union, the steel demand situation has been gradually improving, on the back of strengthening business sentiment, a recovery in industrial production, and slightly better investment prospects. Following a period of very low steel consumption in 2012-13, demand has been gradually increasing in 2014-16, supported by the strong performance of the automotive market. The long period of decline in construction output, which accounts for approximately 35% of EU steel demand, also appears to be coming to an end. Even a stabilisation in construction output going forward would eliminate a significant negative factor that has depressed steel demand growth in the past years.

8. Another key steel-using sector in the EU is mechanical engineering, whose output has been flat in recent years. Steel demand from this sector will depend largely on the future direction of business investment, for which there are some positive indications. A recent market report by EUROFER indicates that apparent steel consumption may have increased by 1.8% in 2016, with moderate growth of 0.7% and 1.5% expected in 2017 and 2018, respectively.² Nevertheless, demand will remain well below levels seen before the financial crisis. Key challenges for the industry include inter-material competition and steel product innovation, according to EUROFER.

¹ See the U.S. Energy Information Administration's March 2017 *Short-Term Energy Outlook* at https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf.

² See *Economic and Steel Market Outlook 2017-18*, released on 1 February 2017 at <http://www.eurofer.org>.

9. The Turkish steel market has been weak in recent years. While finished steel consumption has increased modestly, in the wake of moderate growth in demand from manufacturing and construction, steel production has been in decline, though resumed growth in 2016. A noticeable trend in recent years has been the decline in exports after peaking in 2012, while imports of steel have generally trended upwards. Large-scale infrastructure, energy and transportation projects are progressing rapidly, as part of the "Vision 2023" initiative, which should provide support to Turkish steel demand in the coming years.

10. In emerging Asia, China's steel demand has been declining in recent years, reflecting the significant decrease in the country's steel intensity. Consumption and services, which are not so steel intensive, are now contributing more to economic growth, while fixed asset investment growth has been slowing appreciably since 2011. However, with the support of fiscal stimulus and accommodative monetary policy, growth in real estate and infrastructure investment picked up significantly in the first half of 2016, leading to increases in steel demand during the course of the year. However, some monthly steel demand indicators indicate some moderation in demand more recently, possibly reflecting the temporary nature of the rebound.

11. India's steel demand has increased favourably, having nearly doubled over the past decade or so. Steel demand growth has been around 5% per annum in the last couple of years, supported by infrastructure and a series of consumption and investment-boosting reforms, including the "Make in India" initiative which has led to increased FDI. In recent months, however, analysts have noted that steel demand may have been disrupted due to the cash shortages associated with the move to demonetise certain currency notes, but strong GDP growth in the fourth quarter of 2016 suggests that the effects may have been more muted than expected. In any case, over the longer term, steel consumption will continue to grow favourably in India, with per capita consumption converging towards higher world average levels (though wide differences exist in per capita steel consumption across the different states of India and prospects vary).

12. Within Asia, demand growth has been fastest in economies located in Southeast Asia. A preliminary report released by the South East Asia Iron and Steel Institute in March 2017, notes that ASEAN steel demand expanded by almost 13% in 2016, rising to a level of 78 million tonnes. Most economies in the region posted double-digit steel demand growth, but Vietnam had the highest growth at 20%. That country's steel association expects significant growth in steel production over the long term, as local producers try to meet steel demand for infrastructure and to support economic development more broadly. Indeed, the country has one of the fastest steelmaking capacity growth rates in Asia (capacity has nearly doubled in the last four years).

13. Elsewhere in Asia, steel demand developments have been subdued in Japan, reflecting sluggish investment in industrial, electrical and other machinery. Following a decline of 8% in 2015, apparent steel demand stabilised in 2016, with steel orders up in the construction sector (particularly civil engineering) and industrial machinery and equipment. In Korea, increases in steel demand have been supported by the boom in construction output over the last couple of years, although very recent indicators suggest that the pace of construction investment may now be slowing.

14. Turning to the Commonwealth of Independent States (CIS), demand fell sharply in 2015 in response to the economic recessions in Russia and Ukraine. Russian apparent demand for finished steel products fell by 8.4% in 2015, while in Ukraine it plummeted by more than 23% but from a low level. The deep recession in Russia's automotive sector in recent years has weighed on steel demand developments, as has weak construction activity and falling investment in sectors such as transport equipment, machines and equipment and oil products. Although car sales in Russia in January 2017 were still down 5% from a year earlier, the rate of decline has subsided compared to double-digit declines for three consecutive years. Industrial output also started to recover in early 2017, and steel demand is expected to recover in line with

improved economic prospects. In Ukraine, the mining and steel industries have undergone considerable disruption as a result of the conflict. With the economy now recovering from deep recession, and industrial production having shown signs of recovery in late 2016 and early 2017, steel market conditions should improve somewhat going forward.

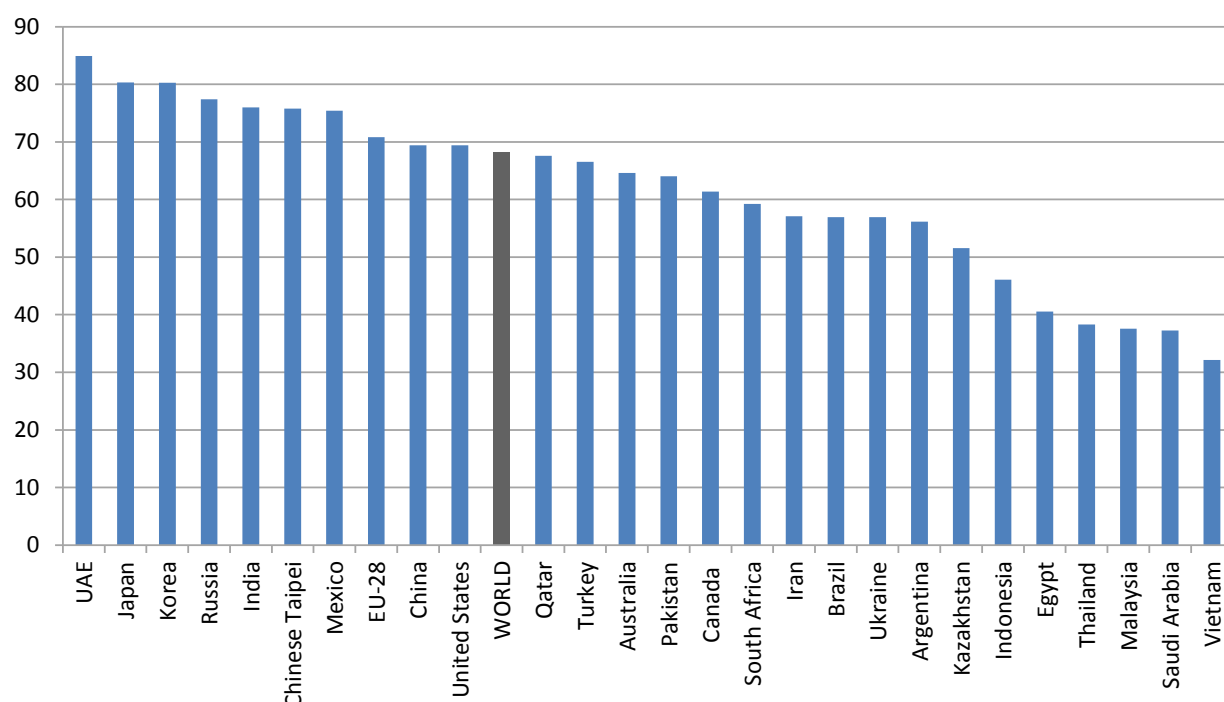
Steel production

15. Following a deceleration in growth in 2014, and an outright decline in 2015, the world's crude steel production has picked up again. In 2016, world steel production increased by 0.8% over the previous year, to a level of 1,628.5 mmt.³ The upward momentum in global production was supported by a 1.2% production increase in China to 808.4 mmt, as well as rapid growth of 7% in the Middle East. Many other regions registered declines in production, particularly South America where steel output fell by 10.6% to a level below 40 mmt.

16. The global capacity utilisation rate has fallen to levels slightly below 70% in 2015-2016, creating difficulties for an industry with high fixed costs, such as steel. Nevertheless, capacity utilisation rates have varied considerably across countries as shown in Figure 2, which shows the implied capacity utilisation rates based on the OECD's nominal crude steelmaking capacity data (OECD, 2017a). For example, utilisation rates were particularly low in parts of Southeast Asia, where strong capacity gains have recently occurred but mills' production may not have been ramped up to full capacity yet.

³ Readers should note that the annual figures described in the text of this document differ from the figures presented in Table 1, the latter of which are based on monthly production data. Because some countries report only annual and not monthly production, the global annual production figures reported by the World Steel Association differ from the yearly figures calculated from the monthly data as presented in Table 1.

Figure 2. Implied capacity utilisation rates in 2016 based on OECD capacity data: world's largest steel producers



Sources: OECD for nominal crude steelmaking capacity as defined in (OECD, 2017a) and the World Steel Association for production.

17. The year 2017 has started on a strong note in terms of production, with crude steel output worldwide rising 7.7% in January in year-on-year terms. Steel production grew in all major regions of the world, with several regions posting robust, double-digit growth.

18. Chinese crude steel production in January 2017 stood at 67.6 mmt, slightly above December figures and 6.9% above the production level registered in January 2016, according to the World Steel Association. The production level may have been lower in February, as the National Bureau of Statistics reporting that steel output in January and February totalled 128.77 million tonnes, up 5.8% from a year earlier.⁴ A key factor possibly affecting production in the coming months relates to the announcement by the National Development and Reform Commission in January 2017 of its intention to close down substandard steel facilities (induction furnaces) by 30 June. Some analysts estimate that induction furnace capacity ranges from 80-120 million tonnes, with production possibly in the range of 30-50 million tonnes in 2016, though there are many uncertainties about the data.⁵ The steel produced by these facilities is made by melting scrap in induction furnaces, but the long products produced are of low quality because the facilities lack refining capabilities. The potential closures have had effects on the market in recent months, sending steel prices significantly higher, particularly for billets and long products.

⁴ See http://www.stats.gov.cn/english/PressRelease/201703/t20170315_1473217.html

⁵ For example, DBS Group Research and S&P Global Platts released articles recently on the subject. See <https://www.dbs.com.sg> and <http://blogs.platts.com>.

19. Elsewhere in Asia, production increased rapidly in India in early 2017, rising by 15.3% year-on-year in January. This follows growth of 7.4% in 2016. Production activity has been supported by a number of capacity expansions by private and state-owned mills over the past five years, to meet growing domestic demand for steel. Following a slight decline in 2016, crude steel production in Japan increased to 9 mmt in January 2017, up 2.7% from a year earlier, supported by stronger domestic demand from manufacturing and the automotive sector. Korean steel output, which had decreased by 1.6% in 2016, declined by 0.6% year-on-year in January 2017, to a level of almost 5.6 mmt.

20. In North America, production developments were sluggish in 2016, remaining roughly unchanged at a level of 111 million tonnes. In early 2017, however, the region's steel production resumed relatively strong growth. According to the American Iron and Steel Institute, U.S. output until the beginning of March was up by around 4.5% from a year earlier, leading to an increase in the capability utilisation rate. In Mexico, steel production increased by 21.6% year-on-year in January. Canadian production continued to show some signs of improvement in January 2017, reverting back to January 2016 levels and consolidating the recovery seen during the last three months of 2016.

21. Production in the EU fell by 2.3% in 2016, reflecting a sharp decline in the UK (30.9%) and output declines in several other producers in the region including Austria, Germany, France, the Netherlands, Poland and Spain. The Italian steel industry appears to have stabilised in 2016, following four consecutive years of production decline. In January 2017, EU steel production grew at 4.7% on year-on-year terms.

22. The so-called "Other Europe" region and the CIS economies have now started to recover. In Turkey, after three years of falling production, crude steel output increased by 5.2% in 2016, to 33.2 mmt. Production growth picked up further in January 2017, rising by 12.8%, with EAF production accounting for most of the growth. Ukrainian production also seems to be recovering, with growth of 5.5% in 2016 and 8.5% in January 2017. Production had been in significant decline in recent years due to infrastructure damage in the eastern part of the country and difficult economic conditions. Russian output remained flat at 70.8 mmt in 2016 due to weak internal demand, but growth picked up significantly in January 2017 to 11.6%.

23. Many other regions have also seen strong production growth in early 2017. South American production was up by 9.4% in January, with growth in Brazil, Peru and Venezuela more than offsetting declines in Argentina and Chile. However, this comes on the back of a difficult year for South America in 2016, as noted above. Steel production in the region contracted by 10.6% in 2016, with most countries except for Colombia and Chile posting sharp production declines.

24. In the Middle East, production increased by 7.6% in 2016, supported by double-digit output growth in Iran. The region's production growth accelerated in early 2017, climbing to 15.8% in January. Indeed, the Middle East is a region where capacity is growing at a fast pace. Demand in the region is closely linked to oil prices; oil revenues have important effects on steel-intensive capital expenditure and government spending on construction projects in some countries, a major driver of steel demand in recent years.

25. African steel production declined by 4.7% in 2016, driven by production downturns in South Africa and Egypt. In South Africa, steel production picked up in the second half of the year due to a rebound in construction demand. This recovery continued during the first month of 2017, with steel production in the African region increasing by 11.1% year-on-year. In the future, South African production could be supported by plans to boost public sector infrastructure spending, particularly for the steel-intensive transport and logistics sector.

Table 1. World crude steel production developments in 2015 and 2016

	Level, thousand mmt			% change, year-on-year		
	Dec 2016	2015	2016	Dec 2016	2015	2016
EU	13,066	166,173	162,293	13.6	-1.8	-2.3
Other Europe	3,111	34,003	35,958	8.6	-6.1	5.8
CIS	8,841	101,374	102,222	6.6	-4.3	0.8
North America	9,409	110,945	110,987	9.9	-8.4	0.0
South America	2,899	43,899	39,224	-11.3	-2.5	-10.6
Africa	1,053	12,791	12,189	9.6	-10.2	-4.7
Middle East	2,507	26,974	29,025	20.8	-3.8	7.6
Asia, of which:	92,661	1,090,598	1,106,253	4.0	-2.7	1.4
China	67,220	798,785	808,370	3.2	-2.9	1.2
Oceania	512	5,717	5,837	19.6	4.6	2.1
World	134,059	1,592,473	1,603,989	5.5	-3.3	0.7

Note: Yearly figures are based on the monthly data provided by the World Steel Association, which differ from the annual figures discussed in the text because some countries report only annually.

Source: World Steel Association.

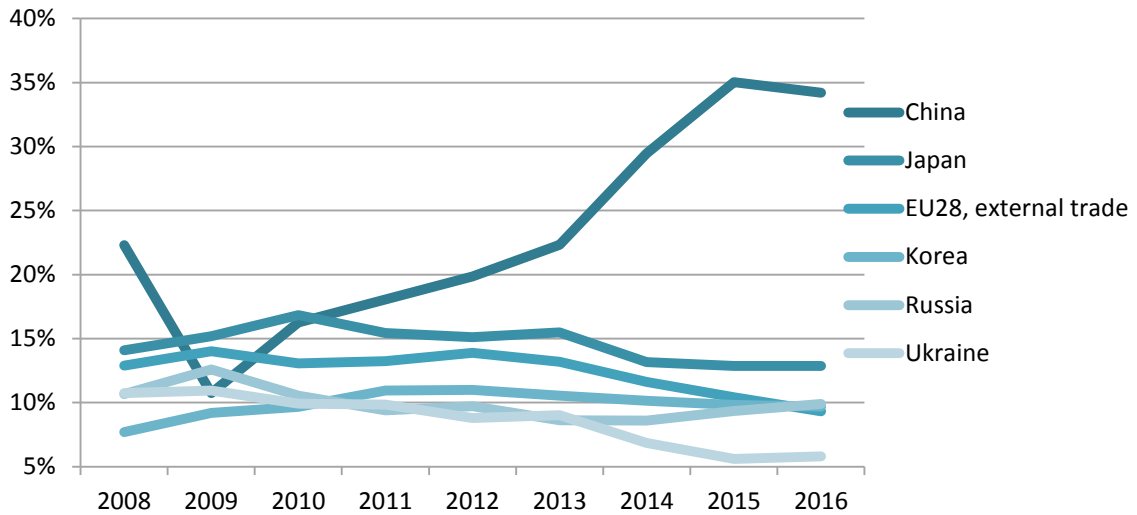
World steel trade

26. Global steel export volumes have remained relatively flat in the last two years following strong growth in 2014. In 2016, global exports are estimated to have declined slightly to 314 mmt⁶, down from the 317 mmt level seen in 2015 and roughly equivalent to the 2014 level. Many economies registered declines in exports last year: China by 3.1% to 107.5 mmt, Japan by 0.7% to 40.5 mmt, the EU by 11.5% to 29.1 mmt, and Korea by 1.8% to 30.5 mmt. This was partially offset by growth in the CIS region, where Russian steel exports climbed by 5.1% to 31.1 mmt and Ukrainian exports increased by 2.9% to 18.2 mmt. Figure 3 presents the evolution of steel export shares across major steel economies.

27. In the context of weak domestic demand and overcapacity, trade measures have increased in the last few years (OECD, 2017b), which may explain part of the recent declines in global steel export volumes. Indeed, the world's export ratio (steel exports as a per cent of production) has started to decline since peaking in late 2015 (Figure 4). In the U.S., steel imports have been declining over the last two years, and fell by nearly 15.9% to 29.9 mmt in 2016. In the EU, on the other hand, steel imports have increased rapidly over the last two years, and the region has recently become the world's biggest import market for steel. EU steel imports increased by 9.7% in 2016 to 41 mmt. Korean steel imports also increased in 2016, to a level of 23.2 mmt, putting it slightly behind the U.S. as the third largest import market. Japanese steel imports have settled at a level of nearly 6 mmt per annum over the last two years.

⁶ Year-2016 exports are an estimate, based on the annualised export level using the latest month available for 2016.

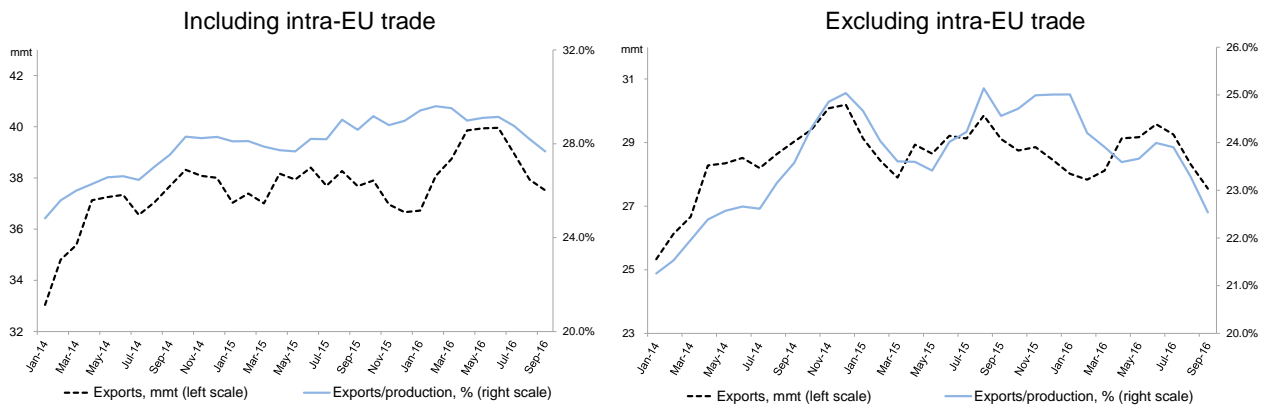
Figure 3. Shares of world steel exports by major exporter, %, 2008-16



Source: OECD calculations based on data from ISSB.

Figure 4. World exports of steel: monthly volume (mmt) and export ratio

(3-month moving averages)



Source: OECD calculations based on data from ISSB.

Table 2. Steel export and import developments in 2016 (annualised to latest month available in 2016)

Largest steel exporting and importing economies in 2015, thousands of metric tonnes

Exporter	2015	2016	Change (2016/2015)	Change (2016/2015) %
China	110,928	107,531	-3,397	-3.1
Japan	40,720	40,452	-269	-0.7
EU, external trade	32,892	29,109	-3,782	-11.5
Korea	31,077	30,504	-573	-1.8
Russia	29,605	31,104	1,499	5.1
Ukraine	17,705	18,213	508	2.9

Importer	2015	2016	Change (2016/2015)	Change (2016/2015) %
EU, external trade	37,382	40,991	3,609	9.7
United States	35,564	29,918	-5,646	-15.9
Korea	21,546	23,168	1,622	7.5
Turkey	18,415	15,344	-3,071	-16.7
Vietnam	15,568	n/a	n/a	n/a
Thailand	14,603	17,569	2,966	20.3

Note: The definition of steel used in this table is HS 7206 to 7302, 7304-7306, and 7307.21-7307.99 excluding some forgings (7326.19), points and switches/crossings (7302.30 and 7302.90), some forged cold finished sections (7216.69 and 7216.99), some cold formed sections (7216.61 and 7216.91), welded shapes and sections (7301.20) and steel castings (7325.99).

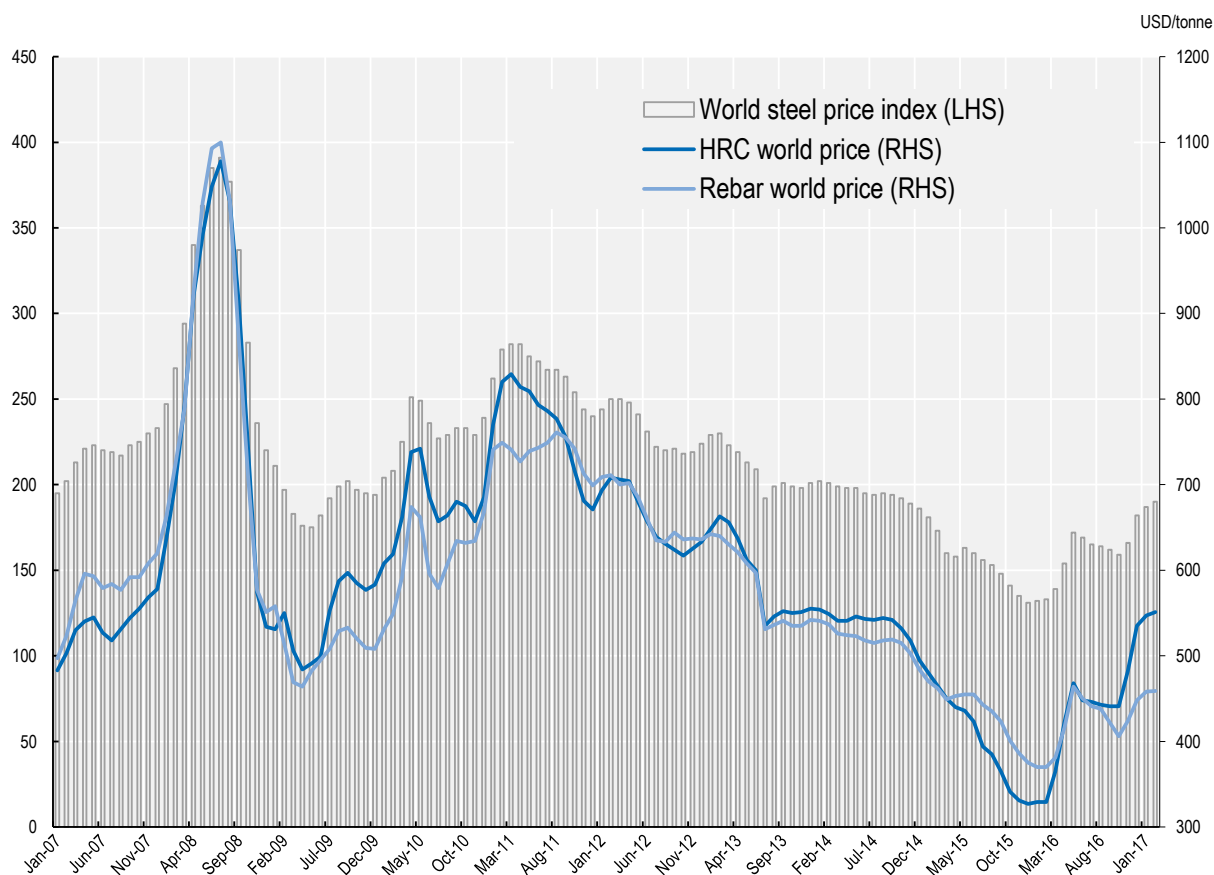
Source: OECD calculations based on data from ISSB.

Steel prices, costs and profitability

28. The recovery in steel demand during 2016 has seen steel prices rally from their lows of late 2015 (Figure 5). The world steel price index,⁷ which had been trending downwards since the second quarter of 2011, has risen by 45% since December 2015. World hot-rolled coil (HRC) prices have increased at a much faster rate than rebar prices; in February 2017, the HRC price stood at USD 551 and the world rebar price at USD 459 per tonne.

⁷ The world prices referred to here are publicly available on the Platts Steel Business Briefing website: www.steelbb.com.

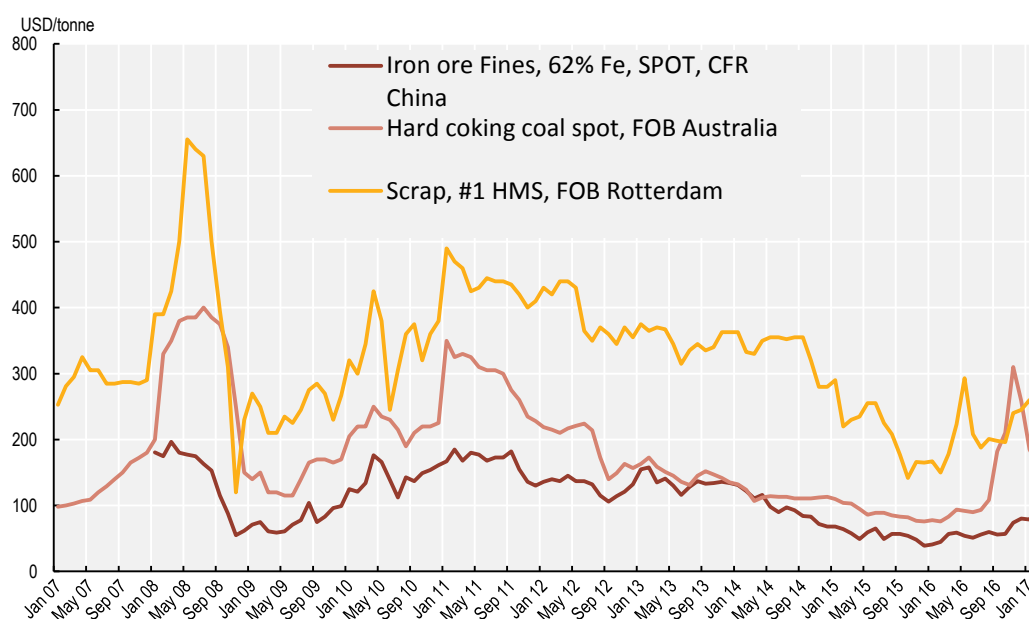
Figure 5. World steel prices (latest month February 2017)



Source: Platts Steel Business Briefing.

29. Prices of steelmaking raw materials have also increased significantly as world steel production growth picked up in the course of 2016. Global metallurgical prices spiked sharply and achieved highs in late 2016 which had not been seen in five years, supported by increased import demand in China. Since then, however, there has been a correction, but the benchmark price is still above USD 160 per tonne. Iron ore prices were also supported by the upswing in steel production, and have now reached levels above USD 90 per tonne for high quality ore. Using high-quality ore reduces the need for metallurgical coking coal in the integrated steelmaking process, and the high price of the latter may be boosting demand for iron ore. Scrap prices were very volatile in 2016, and have risen by less than other steelmaking raw materials. In February 2017, the benchmark scrap price stood at USD 222 per tonne.

Figure 6. Key raw material price indicators

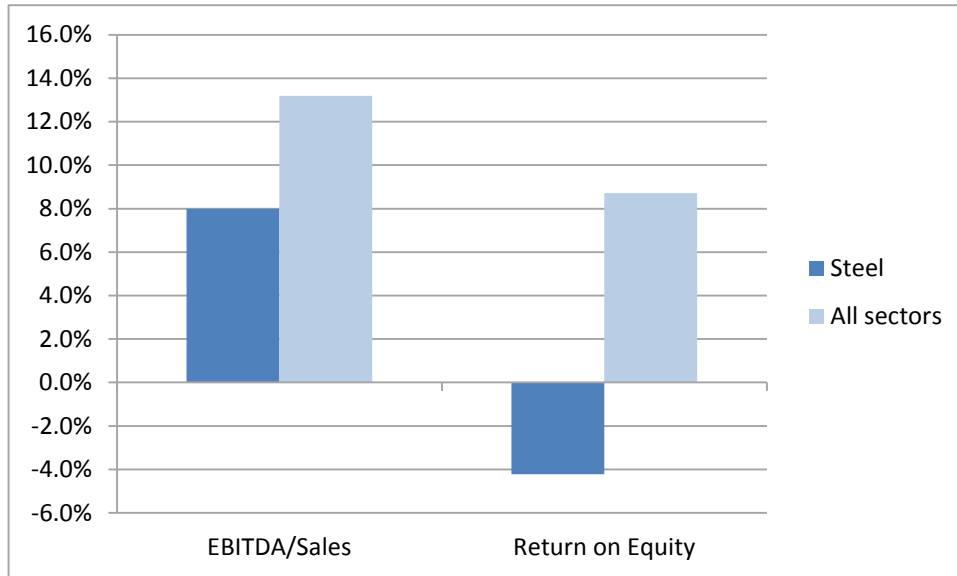


Source: Commodity Research Unit.

30. In line with the increase in raw material prices, operating costs for producing steel have increased over the past year. However, the rise in steel demand and steel prices has led to an increase in profitability for some steelmakers, although the financial situation is still very challenging for most companies. Indeed, large liabilities continue to weigh on steelmakers' balance sheets, and the sector is still underperforming most other industries in terms of its profitability.

31. For example, at the global level, the average operating profitability (EBITDA to sales) of 757 publicly traded steel companies was 8% during October 2015-September 2016, well below the 13% average operating profitability for 96 sectors (manufacturing and service industries) covered in the data (Figure 7). Globally, steel's average operating profitability was ranked 83rd out of the 96 manufacturing and service industries during that time period. Figure 7 also shows the global steel sector's return on equity at -4%, compared to 9% for all sectors, with steel ranked 93rd out of 96 sectors. However, due to reporting lags, the recent rise in steel prices is not fully reflected in the data, and these figures therefore underestimate the current situation to some extent.

Figure 7. Profitability indicators for steel and all sectors, global level, %



Note: The data were updated in January 2017, but given lags in reporting, for companies with calendar years the data are from October 2015-September 2016.

Source: Damodaran online at http://pages.stern.nyu.edu/~adamodar/New_Home_Page/data.html.

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