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Steel Market developments: Q2 2023

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Contact:

Anthony De Carvalho, Anthony.DECARVALHO@oecd.org;

Fabien Mercier, Fabien.MERCIER@oecd.org;

Masanobu Nakamizu, Masanobu.NAKAMIZU@oecd.org;

Gianpiero Mattera, Gianpiero.MATTERA@oecd.org.

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Executive summary

Global steel markets have deteriorated sharply amid a breakdown of traditional raw material and energy supply chains. This development reflects bans introduced on exports from the Russian Federation (hereafter, “Russia”) by some jurisdictions following the Russia’s war of aggression against Ukraine, growing export restrictions on raw materials, soaring energy prices and their impacts on mining of raw materials, and other supply chain problems. This has resulted in increased uncertainty, higher raw material and energy prices in some jurisdictions, and the need for some steel mills to scramble to secure raw materials from new sources at higher prices. Over time those uneven changes could structurally shift the price competitiveness of steel industries. The anticipated contraction in steel demand foreseen for 2023, with only a limited increase in 2024, will not help sustain firms that need higher prices to maintain their margins. In December 2022, steel prices in Europe were 39% and 65% higher, for flat and rebar steel products, respectively, compared to their counterparts in the People's Republic of China (hereafter “China”). These price differentials are much higher than those observed in the past. Steel price differentials can result from cost divergences, with some economies having access to cheaper Russian coking coal than those scrambling to re-organise their supply chains. Going forward those differences may persist and increase, especially given the setting up of the China Mineral Resources Group (CMRG), a new state-owned Chinese agency whose aim is to further centralise all Chinese buying of iron ore to bring down prices paid by Chinese steel firms, and to secure supply chains of the raw material.

The deterioration in international steel market conditions is being driven by the global economic slowdown, historically high inflation worldwide and an ailing Chinese real estate market that is depressing steel demand. Those negative factors will only be partially mitigated by modest improvement in business sentiment in China due to the easing of the country’s strict COVID policies. Furthermore, OECD data show that global steelmaking capacity continued increasing in 2022 for the fourth year in a row, which will contribute to market imbalances and lower capacity utilisation rates in many countries.

This report provides an overview of recent steel market developments, focussing on steel demand, supply, and prices during the year 2022, with reflections on the outlook for steel markets for 2023. Key findings include the following:

- **World GDP growth forecasts have been lowered.** The OECD recently lowered its forecasts for global economic growth to 3.1% in 2022 and 2.2% in 2023. Higher than anticipated inflation, which has led to restrictive monetary policy worldwide, has impacted the fragile and subdued economic recovery. This could expose vulnerabilities accumulated during the preceding period of extremely low interest rates.
- **Russia’s war of aggression against Ukraine is fuelling higher inflation.** The war has added upward pressure especially on energy prices, though with different impacts across countries. Europe has been hit the hardest, with highly negative ripple effects on its steel industry. The economic outlook is highly uncertain. Risks are skewed to the downside, and include inflation becoming more entrenched and the continuation of the war.
- **World crude steel production decreased sharply** during 2022, falling by 4.4% compared to 2021. The decline was unequal across regions, with the European Union and the regional aggregation “Other Europe” being hit the hardest (-10.5% and -

12.2%). Russia's war of aggression against Ukraine is having a drastic toll on Ukraine's steel production, which collapsed by 86.6% year-on-year in January 2023. North and South America are also experiencing a significant, albeit more moderate, decline (-5.5% and -5.0%), while production declines were moderate in Asia and Oceania (-2.3%), with Chinese production decreasing by 2.2% due to its ailing real estate sector and adverse global conditions. The Middle East, in contrast, registered an increase in production (+7.1%). Similarly, steel production in India increased by 5.5% due to strong domestic consumption prompted by infrastructure projects and real estate investments.

- **The steelmaking production-capacity gap increased significantly in 2022.** Global steelmaking capacity increased for the fourth year in a row, reaching 2 463.4 mmt in 2022, while capacity utilisation decreased from 78.7% in 2021 to 74.3% in 2022. The risks of an excess capacity crisis have increased.
- **Steel trade contracted significantly in 2022, decreasing by 11.1% to a level of 385 mmt, led by a decrease of Chinese imports.** Despite the uptick in steel demand observed in 2021, global steel exports in 2022 contracted amidst the challenges posed by persistent high inflation, and rising interest rates and the economic slowdown.
- **Steel prices have decreased worldwide.** US, EU and Japanese steel prices nevertheless remain at elevated levels historically, while Southeast Asian and Chinese steel prices are in line or below their historical averages. Raw material prices have fallen back in line with their historical levels, with the exception of coking coal which is still 43% higher than its long-term average. This high international price masks the much lower prices obtained for Russian coking coal by some jurisdictions. This will impact steel firms' profit margins in highly priced jurisdictions and endanger their viability going forward.
- **Steel consumption is expected to decline by 2.3% in 2022 and to rebound by 1% in 2023.** Energy and commodity price increases and inflationary pressures, as well as lower global demand have worsened steel demand trends globally. Rising interest rates and the tightening of monetary policy, high inflation, weak consumer spending and higher energy prices are expected to impact steel demand significantly going forward, and risks to the consumption outlook are tilted to the downside.

1. The OECD economic outlook

A fragile and subdued economic recovery has been derailed by higher than anticipated inflation, which forced a tightening of loose monetary policy worldwide that could expose vulnerabilities of financing schemes and business models put in place during the period of hyper-low interest rates. Russia's war of aggression against Ukraine has further contributed to pushing up prices, especially for energy, and is having an unequal impact among jurisdictions, with Europe being hit the hardest. The uncertainty about the outlook is high, and the risks are skewed to the downside due to a potential for inflation to become more entrenched and erode households' purchasing power further, as well as to the risk of an escalation of the war.

The estimates provided in the rest of this section are taken from the OECD's November 2022 Economic Outlook. Further information and estimation of the effects of Russia's war of aggression against Ukraine can be accessed through the OECD webpage¹.

1.1. Global prospects

Global GDP growth is expected to decrease to 3.1% in 2022 and 2.2% in 2023, according to the OECD's November 2022 Economic Outlook² (OECD, 2022_[1]). Even prior to the invasion of Ukraine, the recovery proved to be fragile and unequal across sectors and jurisdictions. A stronger inflation that lasted longer than expected had emerged worldwide prior to the start of the Russia's war of aggression against Ukraine, led by a strong rise in food and energy prices that only worsen due to the war. Global prospects have since become increasingly imbalanced, with the major Asian emerging-market economies accounting for close to three-quarters of global GDP growth in 2023, reflecting their steady expansion which contrasts with the sharp, slowdowns in the United States and Europe. Headline consumer price inflation in advanced economies, even though it is expected to moderate, is projected to be high and well above central banks' targets.

Russia's war of aggression against Ukraine is having significant consequences for economic growth world-wide, in combination with the shutdowns in major cities and ports in the People's Republic of China (hereafter, China) due to the country's zero-COVID policy and the general tightening of monetary policy amid concerns of accelerating inflation world-wide. Growth is expected to be considerably weaker than previously foreseen in most economies, especially in Europe, where an embargo on oil and coal imports from Russia is incorporated in the projections for 2023. Commodity prices have continued to rise substantially, reflecting the importance of supply from Russia and Ukraine in many markets, adding to already existing inflationary pressures and hitting real incomes and spending, particularly for the most vulnerable households.

Significant risks remain around GDP growth projections: energy supply shortages in global markets could raise prices further, and disrupt industrial production in Europe. Higher policy interest rates could hurt growth more than anticipated, but also expose some of the financial strategies put in place during the long period of hyper-low interest rates and exert stress in unexpected ways. Many emerging-market economies could also face significant difficulties, particularly commodity-importing economies.

(Table 1) below presents the GDP growth forecasts according to the OECD's November 2022 Economic Outlook (OECD, 2022_[1]).

Table 1. The OECD economic projections (November 2022)

	2019	2020	2021	2022	2023	2024
World ¹	2.8	-3.2	5.9	3.1	2.2	2.7
United States	2.3	-2.8	5.9	1.8	0.5	1.0
Euro area	1.6	-6.3	5.3	3.3	0.5	1.4
Germany	1.1	-4.1	2.6	1.8	-0.3	1.5
France	1.9	-7.9	6.8	2.6	0.6	1.2
Italy	0.5	-9.1	6.7	3.7	0.2	1.0
Spain	2.0	-11.3	5.5	4.7	1.3	1.7
Japan	-0.4	-4.6	1.6	1.6	1.8	0.9
United Kingdom	1.6	-11.0	7.5	4.4	-0.4	0.2
Mexico	-0.2	-8.1	4.8	2.5	1.6	2.1
Korea	2.2	-0.7	4.1	2.7	1.8	1.9
Canada	1.9	-5.2	4.5	3.2	1.0	1.3
Türkiye	0.9	1.8	11.4	5.3	3.0	3.4
Australia	2.0	-2.2	4.9	4.0	1.9	1.6
China (People's Republic of)	6.0	2.2	8.1	3.3	4.6	4.1
India ²	3.7	-6.6	8.7	6.6	5.7	6.9
Russia	2.2	-2.6	4.7	-3.9	-5.6	-0.2
Brazil	1.2	-4.2	4.9	2.8	1.2	1.4
Indonesia	5.0	-2.1	3.7	5.3	4.7	5.1
South Africa	0.1	-6.4	4.9	1.8	1.3	1.6
OECD ¹	1.7	-4.4	5.6	2.8	0.8	1.4
Non-OECD ¹	3.8	-2.1	6.2	3.4	3.3	3.8
World real GDP growth	2.8	-3.2	5.9	3.1	2.2	2.7

Note: 1. Moving nominal GDP weights using **purchasing power parities**. 2. Fiscal years starting in April
Source: OECD Economic Outlook, November 2022, available at: <http://www.oecd.org/eo/outlook/economic-outlook>

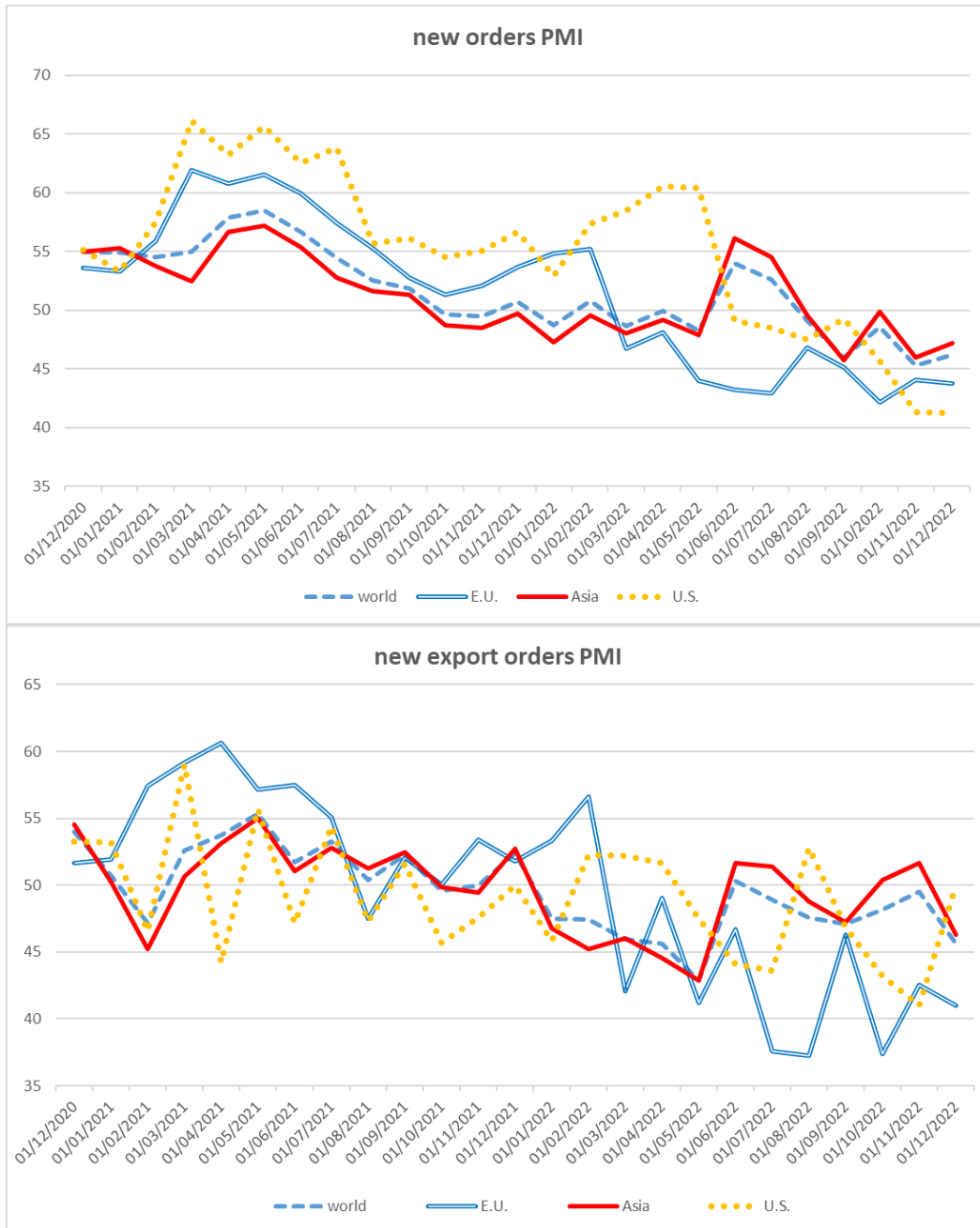
1.1.1. Manufacturing indices

Manufacturing activity expectations draw a bleak yet telling picture of the sentiment of purchasing managers in steel-using sectors (and hence of future market-driven steel demand worldwide). The IHS-Markit indices for new orders and new export orders of steel-intensive sectors, two forward-looking sub-indices of the broad Markit's Purchasing Managers' Index (PMI), are depicted in Figure 1. New orders indices for all three represented regions (Asia, US and EU) are below 50, which indicates that a majority of purchasing managers expect a decrease in their need for steel intensive products in the future. There has been a slight improvement of the level of the index for the Asia region (and hence for the world average), yet the US and EU centred indices have shown no sign of improvement. In spite of this improvement, all indices are still indicating contraction.

All the new *export* order indices are also in contraction territory, indicating poor expectations for demand from exports to produce steel-intensive products, although the US index for new export order has been recently picking up (but remains in contraction territory).

Figure 1. Market Purchasing Managers' Indices: new orders and new export orders among Steel-Intensive Sectors

Latest data point: December 2022



Note: An index reading of less than 50 indicates that more purchasing managers expect a decrease over the upcoming month compared to the current month than an increase

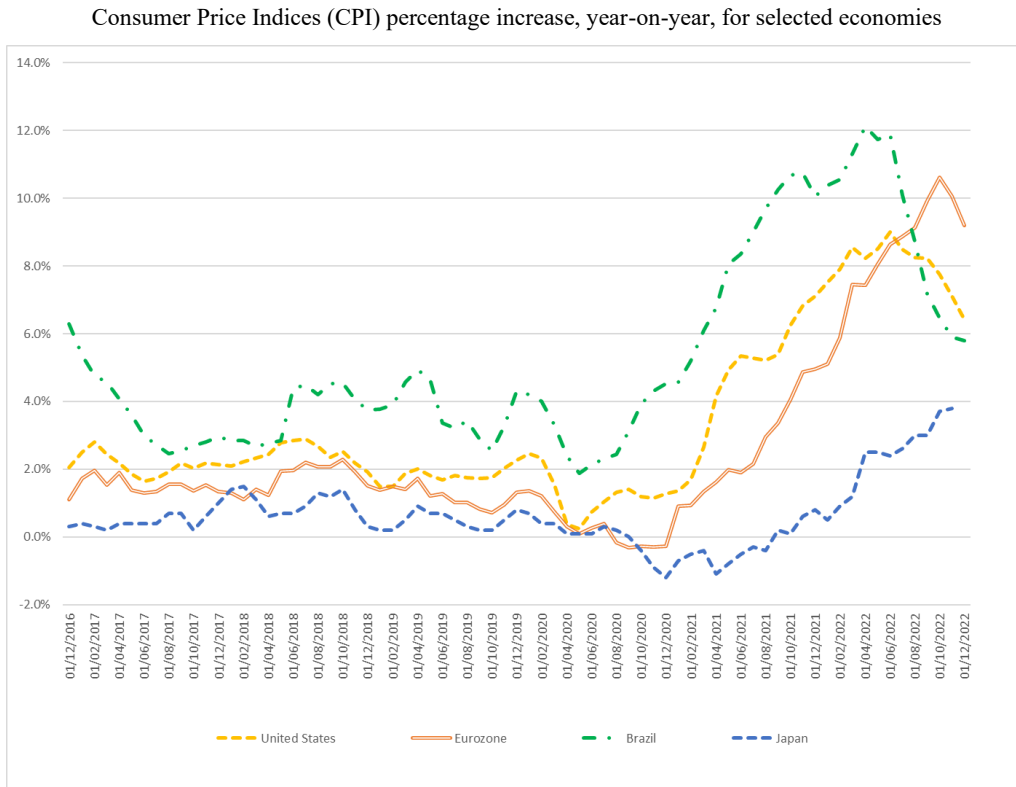
Source: Markit economics, via Refinitiv.

1.1.2. Increasing prices for consumers and producers can weight on demand

A downside risk to the manufacturing sector, but also to the general economy, are the higher prices paid by consumers in most economies for a representative basket of goods, which

would reduce discretionary spending. Consumer price indices are represented for a few selected jurisdictions on Figure 2. Consumer prices have been decelerating in most jurisdictions, albeit at different rates. Eurozone consumer prices have decelerated but not significantly, while prices in Brazil and in the US have decelerated to a larger extent. Prices in Japan, on the contrary, continue to accelerate.

Figure 2. Prices increases have slowed down but remain at elevated levels

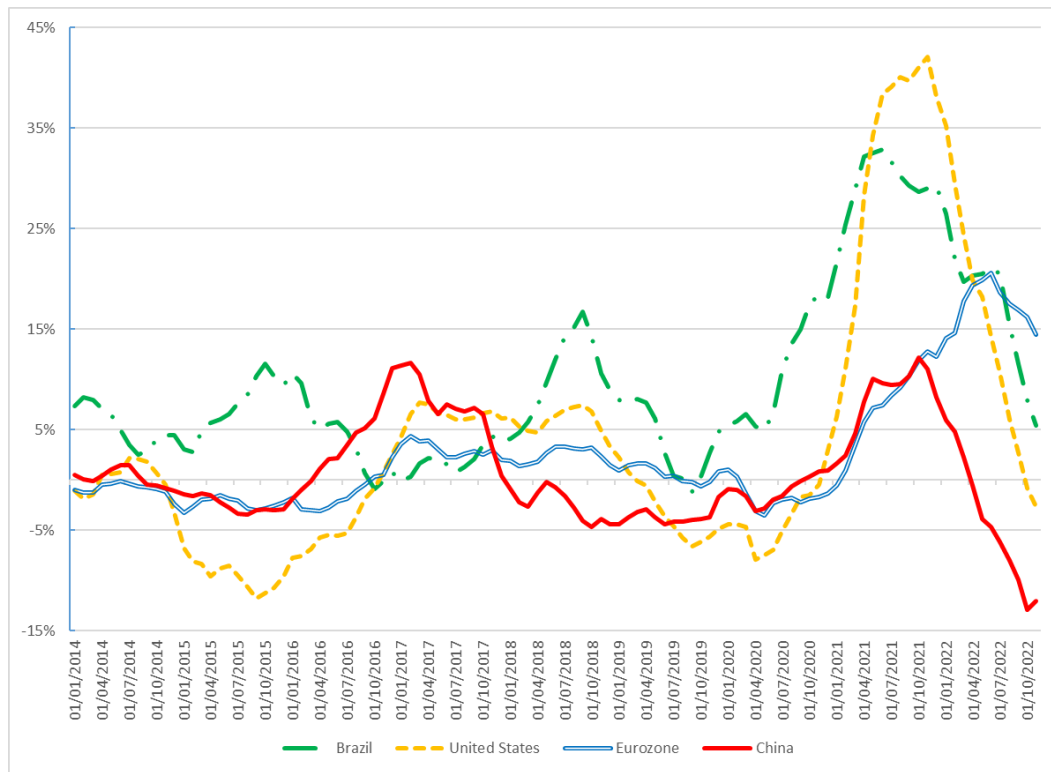


Source: Refinitiv

Producer prices have been declining sharply, albeit unequally, for most jurisdictions, as shown in Figure 3. The sharp decrease should continue to help ease the consumer price index increases going forward, although producers never passed on their higher costs to the consumer to their full extent over the previous months, thus cushioning the impact of raising prices on consumer demand by letting their margins erode.

Figure 3. Producer inflation have decreased since their peak

Producer Price Indices (PPI) percentage increase, year-on-year, for a few selected economies



Source: Refinitiv.

1.2. Regional prospects

In the euro area, GDP is expected to have increased by 3.3% during the year 2022, but to grow only by 0.5% in 2023 and 1.4% in 2024, due to the conjunction of Russia's war of aggression against Ukraine, a tightening of monetary policy, and the global economic slowdown. Furthermore, higher energy costs due in part to the Russian oil embargo from 2023 onwards will exacerbate inflationary pressures, and inflation is projected to hover around 6.8% in 2023, and to remain above target in 2024. Inflation is weighing on households' consumption and business investment decisions, becoming broader based and increasing uncertainty and risk premia. Business and consumer confidence have consequently deteriorated. Risks to economic activity are tilted to the downside: severe disruptions in energy, notably gas, supply would hit growth in Europe while pushing inflation further up. The ECB had signalled the gradual removal of monetary policy accommodation and raised its main refinancing operation rate successively from 0% to 2.5% on 21 December 2022³. The ECB ended net asset purchases on the 1 July 2022, but is still reinvesting the principal from maturing bonds, hence keeping the size of the ECB's balance sheet unchanged.⁴

In the United States, GDP is projected to grow by 1.8% in 2022 but only by 0.5% in 2023 and 1% in 2024. High inflation and tighter financial conditions are expected to reduce spending, and the tightening of monetary policy is not supporting economic expansion across the economy. Investment has weakened, especially in the housing market. Inflationary pressures have broadened, and, although the unemployment rate remains low (3.7%), the participation rate is historically low (62%).

In Japan, GDP is projected to expand by 1.6% in 2022 and 1.8% in 2023 due to pent-up demand, but to increase only by 0.9% in 2024. Supply chain disruptions arising from Russia's war of aggression against Ukraine and China's zero-COVID-19 measures have held back production, investment and exports. Furthermore, widening policy interest rate differentials with other advanced economies have led to additional yen depreciation, adding upward pressures on the prices of imported energy, food and raw materials. The impact of currency depreciation on imports has been larger than that on exports, thus resulting in an increase of the trade deficit. Consumer price inflation has exceeded the 2% target for several months and forex interventions have been carried out since September with a view to reduce exchange rate volatility. The Japanese government announced a new set of policy measures in October 2022 to dampen the impact of rising energy costs, such as a further extension of the oil price cap subsidy until September 2023 and the introduction of new schemes to reduce electricity and utility gas bills from January to September 2023 (JPY 6.3 trillion, 1.2% of GDP). The package also includes medium-term expenditures to strengthen local economies, to boost investment in human capital, digitalisation and the green transition, and to bolster economic security. The related supplementary budget will be around JPY 30 trillion (5.5% of GDP), but includes contingency reserve funds and expenditures expected to be implemented over multiple years. On the monetary policy side, the Bank of Japan has maintained its yield curve control, seeking to keep the 10-year Japanese government bond yields at around zero within a range of plus or minus 0.25 percentage point, with no limit on bond purchases.

In the People's Republic of China (hereafter "China"), GDP growth is expected to slide to 3.3% in 2022 and to rebound to 4.6% in 2023 and 4.1% in 2024. Amid mounting headwinds, growth is expected to be supported by investment and the frontloading of large infrastructure projects. Steel products used in construction account for slightly more than half of Chinese apparent steel consumption. In terms of infrastructure, steel products most typically used are rebar, but sections, plates and rail track are also important inputs. Real estate investment is expected to remain weak due to the continuing defaults across developers and falling real estate price expectations. China is relatively well insulated from global food and energy market shocks due to the structure of consumption, with a large share of food that has limited import content. Moreover, China's large stockpiles of oil and grain reserves is expected to dampen the impact of rising global energy and food prices. Monetary policy has become more supportive of activity with a series of interest rate and reserve requirement rate cuts, as well as measures to support the ailing housing sector.

In India, economic growth has lost momentum over the summer, due to a combination of erratic rainfall, which impacted sowing activities, and falling purchasing power. Real GDP is projected to grow by 6.6% in the fiscal year 2022-23 and 5.7% in 2023-24, before accelerating again to 6.9% in 2024-25. Tighter financial market conditions are weighing on the demand for capital goods and investment. Merchandise exports rose to a record level, validating India's strategy of managed liberalisation through preferential trade agreements with major partners, especially for services. Headline inflation remains above 6%, which is the central bank's upper bound of the tolerance band, mostly due to the trend increase in the price of food, which prompted the Reserve Bank of India (RBI) to tighten its monetary policy starting in May 2022. Its interest rate stands at 6.5% since 7 December 2022.

In Brazil, after a strong recovery of 4.9% in 2021, GDP growth is expected to slow in 2022 to 2.8%, 1.2% in 2023 and 1.4% in 2024. Rising inflation, Russia's war of aggression against Ukraine, and tighter financial conditions have eroded the country's economic sentiment and households' purchasing power, which is expected to strongly dent domestic demand. The labour market recovery has been slow, and the participation rate and real labour incomes have remained below pre-pandemic levels. Public expenditure is expected to increase in 2022, driven by higher social transfers with the Auxílio Brasil programme,

adjustments in civil servant wages, and higher discretionary expenses, resulting in an expansionary fiscal stance in 2022. Permanent increases in public expenditures could be a threat to the fiscal outlook in the longer term. Furthermore, debt-servicing will continue to increase due to the tightening of monetary policy. Indeed, the Central Bank of Brazil lifted its Selic rate by 50 bps to 13.75% on 3 August 2022 to fight inflation. This represented the 12th consecutive interest rate hike since the central bank started tightening in March of 2021.

2. Steel Production

World crude steel production decreased significantly in 2022, falling by 4.4% compared to 2021. The fall was unequal across regions, with the European Union and Other Europe the hardest hit (-10.5% and -12.2% respectively), while the decrease was moderate in Asia and Oceania (-2.3%) and the Middle East even registered an increase (+7.1%).

The 2022 decrease in steel production was felt across the board, with the European Union (-10.5%) and Other Europe (-12.2%) the hardest hit., as shown in Table 2. The decline was moderate in Asia and Oceania (-2.3%), while the Middle East even registered an increase in steel production in 2022 (+7.1%).

Table 2. World crude steel production developments in 2022

	Dec-22		2022	
	% change, y-o-y	level, thousands tones	% change, y-o-y	level, thousands tones
Africa	-8.9%	1 100	-6.6%	14 900
Asia and Oceania	-9.2%	104 900	-2.3%	1 351 300
of which China:	-9.8%	77 890	-2.2%	1 010 820
Russia & CIS	-11.8%	6 094	-7.6%	78 937
European Union	-16.7%	9 200	-10.5%	136 700
Other Europe	-19.2%	3 400	-12.2%	44 700
Middle East	0.4%	3 700	7.1%	44 000
North America	-9.9%	8 800	-5.5%	111 400
South America	-3.8%	3 300	-5.0%	43 300
World	-10.8%	140 695	-4.4%	1 829 286

Note: Data are based on monthly production data and can differ from annual data published after December of each year. Furthermore, monthly production data can be revised at any time. The 4 CIS covered by the statistics are Belarus, Kazakhstan, the Republic of Moldova and Uzbekistan.

Source: worldsteel data, as released on 31 January 2023, <https://worldsteel.org/steel-topics/statistics/steel-data-viewer/>

2.1. Americas

In North America, total crude steel production decreased by about 5.5% in 2022 mainly driven by the fall in production in the United States (-5.9%) and Canada (-7.9%). Mexico's steel production decreased at a slower pace (-1.6%). Steel producers in North America were less affected by high energy prices hitting steel producers in Europe. The drop in production in the region seems to have more to do with annual capacity rates trending down since early May 2021. In the United States, steelmakers are focusing on keeping only the most productive plants in activity while shutting down their less economical mills (Argus Media, 2022^[2]). The changing regional dynamics have been driven by increasing electric arc furnace (EAF) steel production capacity in the south of the United States and curtailments or idling of blast furnace capacity in the Great Lakes region, as EAFs require less capital to build and generally have lower labour costs than blast furnaces (Argus Media, 2021^[3]).

In South America, steel production also decreased by 5.0% in 2022. Production decreased sharply in Chile (-13.3%), partially due to the interruptions of production of the largest steel producer in the country Compañía Siderúrgica Huachipato (CSH). The unit halted production at the beginning of February after it had trouble restarting following maintenance works (Platts, 2022^[4]) (Kallanish, 2022^[5]). The decrease was also significant in Brazil (-5.8%), whereas steel production was much more stable in Colombia (-1.4%). Argentina, on the contrary, managed to increase its steel production by 4.5% in 2022, as the country experienced a rise in both its crude steel and its rolled steel output for the second consecutive month, reaching its best performance in the last five years (Kallanish, 2022^[6]).

The increased production in 2022 reflected the higher demand from the auto industry, agricultural machinery production, civil construction and energy (Steel Orbis, 2022^[7]).

2.2. Africa and the Middle East

African steel production decreased by 6.6% in 2022. South Africa experienced the largest steel production drop, with a 12.3% decrease. Egypt's steel production dropped by 4.6%. Burdened by rising production costs and poor availability of steel, South Africa's steelmaking industry, which has been an exporter before 2020, has become a net importer as the sector reels from the closure of a number of plants (Business Day, 2022^[8]). Moreover, in 2022, the country's largest producer, ArcelorMittal, experienced numerous disruptions in its operations: strikes, transportation issues, and energy supplies interruptions (Kallanish, 2022^[9]) (Kallanish, 2022^[10]).

In the Middle East, steel production increased by 7.1% in 2022, year-on-year, helped by Iran's soaring crude steel production (+8%). The Iranian steel sector, although plagued by low domestic demand, a depreciating local currency, and subdued demand in its largest export market, China, has government-set production targets and benefits from significant government support to achieve those targets. Steel production increased for the other jurisdictions in the region, with Saudi Arabia's steel production increasing significantly (+3.9%).

2.3. Asia and Oceania

Steel production in Asia decreased by 2.3% in 2022, year-on-year, driven by a significant Chinese decrease of 2.2%. Lower steel prices, limited energy supplies and weak steel demand due to domestic adverse conditions such as an ailing real estate sector led to a decrease in Chinese steel output.

Other Asian economies experienced larger decreases: Japan decreased by 7.4%, and South Korea by 6.5%. Viet Nam's steel production fell the most, with its steel production decreasing by 13.1% in 2022. On the contrary, India increased its steel production by 5.5% in 2022 due to strong domestic demand, linked to an uptick infrastructure spending and a pick-up in the real estate and construction activities amid an overall economic revival (Anand, 2023^[11]). Australian steel production decreased by 1.9% in 2022.

2.4. Europe and CIS Economies

In the European Union, steel production fell by 10.5% in 2022. Amongst the larger steel producers of the European Union, the decrease was more pronounced in Spain (-19.2%), followed by France (-13.1%), Italy (-11.9%), and Germany (-8.4%). European steel makers have been very heavily impacted by rising energy prices in 2022 (S&P Global, 2022^[1]). For steelmakers, the squeeze from rising fuel and energy costs has happened on two fronts simultaneously: steel firms use either blast furnaces or electric arc furnace (EAF) technologies to produce steel. The former relies heavily on metallurgical coal, while the latter requires other energy inputs such as electricity from a grid (S&P Global, 2022^[1]). Affordable electricity is thus an important factor for steel produced through EAF.

Steel production in the United Kingdom decreased by 15.8% in 2022, year-on-year. According to the UK Steel Forum⁵, the fall in steel production was mainly demand-driven, a consequence of a weakness in the UK automotive sector, high inflation which had a knock-on effect on consumer confidence and spending, as well as higher mortgage rates in the UK which dampens construction (Kinch, 2022^[1]). Nevertheless, the UK Steel Forum highlighted that electricity prices (as of September 2022) were still multiple times higher

than historically, and that cost-competitiveness relative to international competitors was crucial for the future of the UK steel industry, whose output in 2022, which fell below 7 million metric tons of crude steel, is already less than half of what it was in 2000. The forum also asserted that favouring green steel in public procurement could help the domestic UK steel sector (Kinch, 2022^[1]).

In the “Other Europe” region, steel output decreased by 12.2% in 2022, driven by the Republic of Türkiye’s (hereafter, Türkiye) decrease in steel production of 12.9%. Türkiye’s billet imports from Russia rose fivefold quarter on quarter over April-June, hitting steel mills' output (Platts, 2022^[1]).

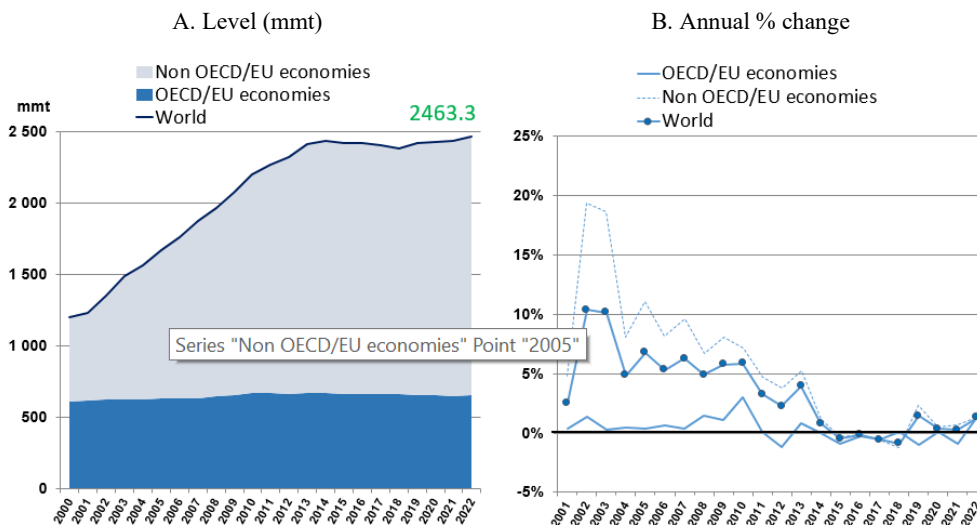
Russia’s war of aggression against Ukraine took a large toll on Ukrainian steel production, which dropped by 70.7% in 2022. The war disrupted logistics chains and destroyed two major steelmaking plants, Azovstal and Illich Steel, both owned by Metinvest (Bor, 2023^[1]). Missile strikes on Ukraine's energy infrastructure, which intensified at the end of 2022 and going forward, triggered power shortage that also affected steel operations, forcing companies to temporarily suspend or cut production, according to steel making industry association Ukrmetalurgprom (Bor, 2023^[1]). Ukraine’s iron ore mining industry is also operating at 15 to 20% of its capacity due to power shortages and pig iron production fell 86.6% in 2022. There are no sign that the situation may improve while the war continues. On the contrary, recent data shows that crude steel production dropped 85% year on year to 284 000 metric tons in January 2023 (Bor, 2023^[1]).

3. The global steelmaking capacity situation

As discussed in document [DSTI/SC(2023)3], the latest available information (as of December 2022) suggests that global steelmaking capacity increased in 2022 for the fourth year in a row (Figure 4). Global steelmaking capacity increased to 2 463.4 mmt in 2022, resulting in a 1.3% increase (i.e. 32.0 mmt) from the level at the end of 2021, taking into account the latest information on new capacity additions and closures. World steel production as a share of capacity decreased from 78.7% in 2021 to 74.3% in 2022.

Most of the capacity additions in 2022 took place in Asia and the Middle East, where an additional 7.9 mmt and 9.3 mmt of capacity was deployed. Steelmaking capacity also increased in Africa (by 4.9 mmt, i.e. 11.3% over the previous year), North America (by 7.2 mmt, i.e. 4.6% over the previous year), Europe (1.6 mmt, i.e. 0.6% over the previous year) and the CIS (1.1 mmt, i.e. 0.8% over the previous year). China and India, which are the two top steel producing jurisdictions, increased respectively by 3.3 mmt (+ 0.3%) and 4.5 mmt (+3.4%) in 2022. Steelmaking capacity did not change in Latin America and Oceania because new investments and permanent closures were not registered in 2022, according to the sources used to update the OECD’s capacity databases.

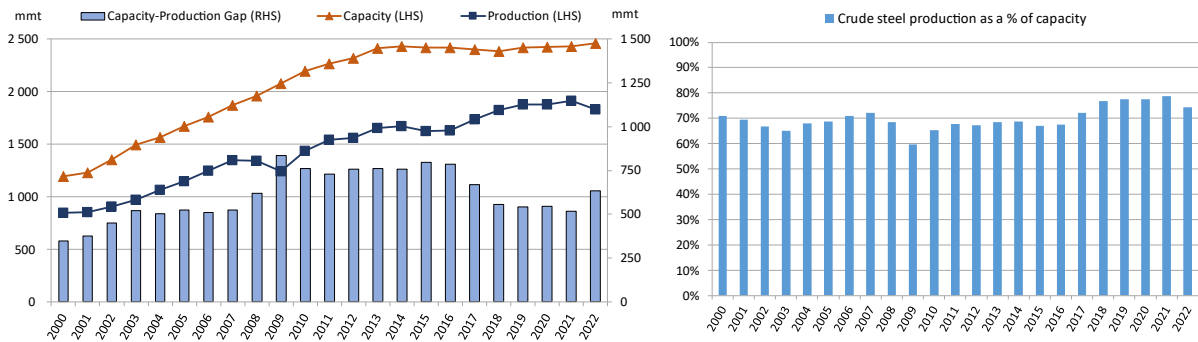
Figure 4. Evolution of crude steelmaking capacity in OECD/EU economies and non OECD/EU economies



Note: Capacity data reflect information available to December 2022
 Source: OECD

1. The gap between global capacity and production is expanded to 632.0 mmt in 2022 from 516.9 mmt in 2021, in view of the weak trend in world steel production, and given the expected increase in capacity (Figure 5). The global steel production as a share of capacity, a rough indicator of the global utilisation rate, decreased from 78.7% in 2021 to 74.3% in 2022 (Figure 5).

Figure 5. Global crude steelmaking capacity and crude steel production



Note: Capacity data reflect information up to December 2022
 Source: OECD for capacity and worldsteel for production.

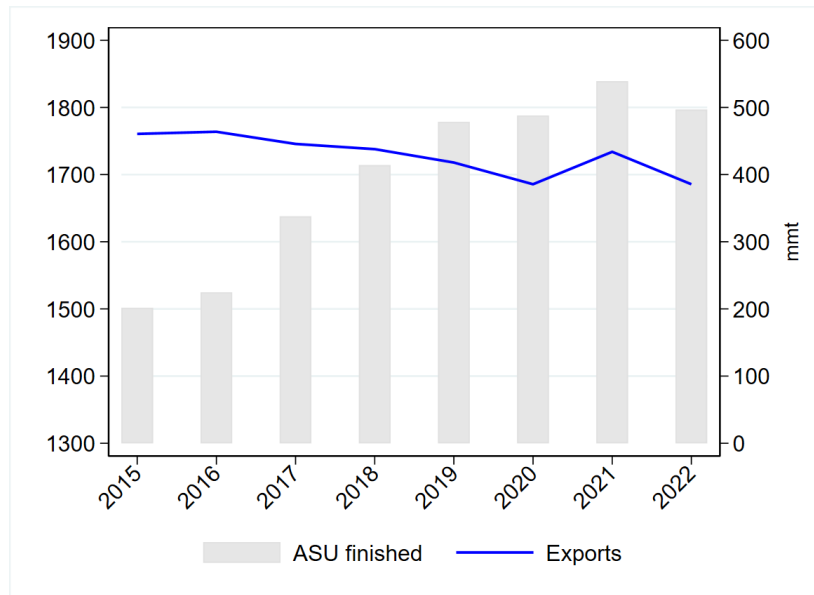
4. World steel trade

In 2022, the volume of international trade in steel decreased by 11.1% to a level of 385 mmt. Despite the uptick in steel demand observed in 2021, steel exports in 2022 contracted amidst the challenges posed by persistent high inflation and rising interest rates globally as well as by China's slowdown.

The volume of international trade in steel decreased quite substantially in 2022 with respect to 2021. According to ISSB figures, in 2022 global steel export volumes (including intra-EU trade) fell by 11.1% (Figure 6) reaching the same level observed in 2020 (circa 385 mmt). Despite the positive rebound in steel demand observed in 2021 when the world was recovering from the COVID-19 pandemic, the challenges posed by persistent high inflation and rising interest rates globally as well as by China's slowdown have led to a sharp deterioration of steel demand and a consequent reduction in steel trade. According to Worldsteel projections, steel demand (measured as apparent steel use of finished steel products) is expected to fall by 2.3% in 2022, registering the first contraction since 2015 (worldsteel, 2022^[1]).

The contraction in world exports after the significant recovery registered in 2021 reflects, to a large extent, the significant drop in demand in key importing markets (in particular China) but may also be symptomatic of the significant rise in prices for key input materials, which have been largely passed onto consumers and reduced global demand.

Figure 6. Global steel trade and demand



Note: Blue line (right axis) represents global exports of steel products (including finished and semi-finished products). Gray bars show the evolution of global ASU (left axis). Data in volumes (mmt).

Source: OECD calculations based on ISSB data.

4.1. Geographical trade patterns

Following the expansion in global steel trade in 2021, world steel exports contracted significantly during the course of 2022. World exports decreased by 11.1%, with almost all the major steelmaking economies (except China, the US and Mexico) recording a decrease in their steel exports when compared to 2021 figures.

4.1.1. East and Southeast Asian economies

China, the global major producer of crude steel, has seen its exports increase by 3.1% in 2022 with estimated figures reaching 68 mmt (Table 3). Exports increased quite rapidly in the first semester of the year, but then decreased sharply in the period August-October (Figure 7). The slowdown of the Chinese economy is reflected in a sharp contraction in imports, which are expected to decline by 34% in 2022 (Table 4). Japan has seen its outbound shipments of steel reduce by 6.2% in 2022 despite a moderate recovery in steel demand due to the growth of the non-residential construction, machinery, and construction sectors. Imports contracted as well by 3.1%. Korean steel trade (both exports and imports) also contracted (respectively by -4.3% and 3.7%), partly due to a decline in the construction sector that pushed demand for steel down by 2.5% in 2022. Chinese Taipei exports and imports also decreased 2022, respectively to a level of 10 mmt (-7.2%) and 7.4 mmt (-22.4%).

4.1.2. European economies

EU exports declined by 10.7% to a level of 23 mmt when compared to 2021, partly reflecting the economic slowdown in nearby economies due to the Russia's war and the rise in prices of many steel products that made European products less attractive. Shipments towards EU countries remained stable (-0.6%) to a level of 45 mmt despite the significant contraction in steel demand (3.5%). Exports from the United Kingdom (hereafter, the UK) remained stable in 2022 (3.4 mmt) whereas imports contracted quite significantly (-11.1%).

Table 3. Steel exports, yearly data

2016-22, major steelmaking economies

Economy	2016	2017	2018	2019	2020	2021	2022 (Jan Oct)	2022 (ann)	2021-22
CHN	108,348.5	75,091.6	68,988.0	63,841.7	53,236.0	66,349.4	57,027.9	68,433.5	3.1%
EU27	33,328.1	34,547.4	33,180.5	33,169.1	25,430.7	25,815.4	19,213.1	23,055.8	-10.7%
IND	9,995.4	16,061.5	10,766.6	13,069.2	17,131.4	19,999.4	10,572.9	12,687.5	-36.6%
JPN	40,461.7	37,428.1	35,795.8	33,081.9	31,041.3	33,731.0	26,369.6	31,643.5	-6.2%
USA	9,008.5	10,164.8	8,567.9	7,226.0	6,562.3	8,109.8	7,085.0	8,501.9	4.8%
RUS	31,185.8	31,152.9	33,334.4	29,454.1	28,653.4	32,547.6	15,763.4	18,916.1	-41.9%
KOR	30,527.8	31,278.7	29,980.2	29,913.8	28,517.3	26,702.7	21,296.7	25,556.0	-4.3%
TUR	15,291.5	16,276.4	19,764.3	19,536.7	18,451.1	21,928.1	15,290.1	18,348.1	-16.3%
BRA	13,392.0	15,313.7	13,914.4	12,727.2	10,710.5	11,488.2	10,345.8	12,415.0	8.1%
TWN	12,240.1	12,125.7	12,291.7	11,240.4	10,564.6	10,803.7	8,355.1	10,026.2	-7.2%
UKR	18,227.8	15,221.1	15,079.1	15,554.7	15,205.2	15,699.4	4,126.6	4,951.9	-68.5%
MEX	4,046.0	5,129.1	5,781.8	5,105.1	5,150.6	5,889.9	5,976.7	7,172.0	21.8%
CAN	5,848.0	6,481.7	6,435.0	5,686.3	5,140.6	7,538.8	5,596.1	6,715.3	-10.9%
SAU	1,145.7	1,142.8	3,128.6	2,500.0	1,302.4	1,522.6	765.3	918.4	-39.7%
IDN	1,606.4	2,427.9	3,792.2	4,238.9	5,802.9	9,847.7	7,642.9	9,171.4	-6.9%
EGY	808.8	1,477.8	1,453.8	1,164.1	2,009.9	1,990.5	578.9	694.6	-65.1%
GBR	4,572.5	4,698.6	4,598.4	4,095.4	4,409.3	3,437.4	2,896.0	3,475.2	1.1%
MYS	1,419.6	1,734.5	1,709.1	5,170.1	8,500.1	8,327.4	5,989.8	7,187.7	-13.7%
ZAF	2,179.1	2,547.0	2,849.8	2,637.9	1,487.2	1,537.7	1,290.5	1,548.7	0.7%
WLD	463,794.1	445,647.6	437,889.5	417,915.8	385,639.6	433,916.2	321,395.2	385,674.2	-11.1%

Note: values expressed in thousands of metric tonnes. The column 2022 (Jan-Oct.) reports actual trade data for the period January-October 2022. The column 2022 (ann) includes 2022 annualised trade data so as to make comparison with other years feasible. EU27 data refer to external trade.

Source: OECD calculations based on ISSB data.

4.1.3. Americas

Exports from the US registered a moderate increase in 2022 (4.8%) to 8.5 mmt. Imports also slightly increased to about 29.8 mmt (1.2%), partly sustained by a concomitant increase in steel demand. Mexico has seen its exports increase markedly up to 7.1 mmt in 2022 (21.8%), a significant growth when compared to the past six years when annual exports averaged 5.2 mmt. On the contrary, Mexican imports decrease quite significantly to 11.3 mmt, reaching a level seen in 2019. Canadian exports and imports of steel products contracted in 2022. Exports declined by 10.9% to a level of 6.7 mmt, whereas imports decreased by 4.9% to 9.4 mmt. As Canada is the largest importer of steel from the US, the depreciation of the Canadian dollar against the US dollar, together with a slight decline in steel demand, may have had an impact on export and import developments.

4.1.4. Other major steelmaking economies: Brazil, India and Türkiye

Amongst the other major steelmaking economies, Brazil, a major exporter of steel, has seen its exports steel increase quite substantially (8.8%) to 11.9 mmt, whereas imports dropped to 3.4 mmt (-32.7%). As Brazil is an important producer of semifinished products, Brazilian exports have partly offset the reduction in semifinished supplies from Russia in global steel markets. However, the marked reduction in imports may be explained by the substantial reduction in domestic demand for steel products (-10.9%). India, the third largest producer

of crude steel globally, has seen a contraction of its exports to 12.6 mmt (-36.6%) and an increase of imports to 6.2 mmt (6.6%). These developments may be explained by the high growth in steel demand on the back of strong infrastructure spending and a concomitant growth of capital goods and automotive sector (worldsteel, 2022_[15]). Turkish exports rebounded after the heights observed in 2021 (from 21.9 mmt to 18.3 mmt). Imports remained stable to a level of 16.1 mmt. The reduction of imports from traditional Turkish partners have been partly offset by the increase in steel shipments from Russia.

4.1.5. Ukraine

Not surprisingly, Ukrainian trade of steel contracted dramatically during 2022. Export figures amounted to 4.9 mmt, well below the average level of exports registered from 2016 to 2021 (15.8 mmt). The destruction of some key steelmaking facilities, as well as disruptions in logistic connections (road and railways) to major export destinations contributed to the deceleration of outbound shipments from Ukraine. A partial recovery is expected in 2023 as first reconstruction activities will start to materialise.

Table 4. Steel imports, yearly data

2016-22, major steelmaking economies

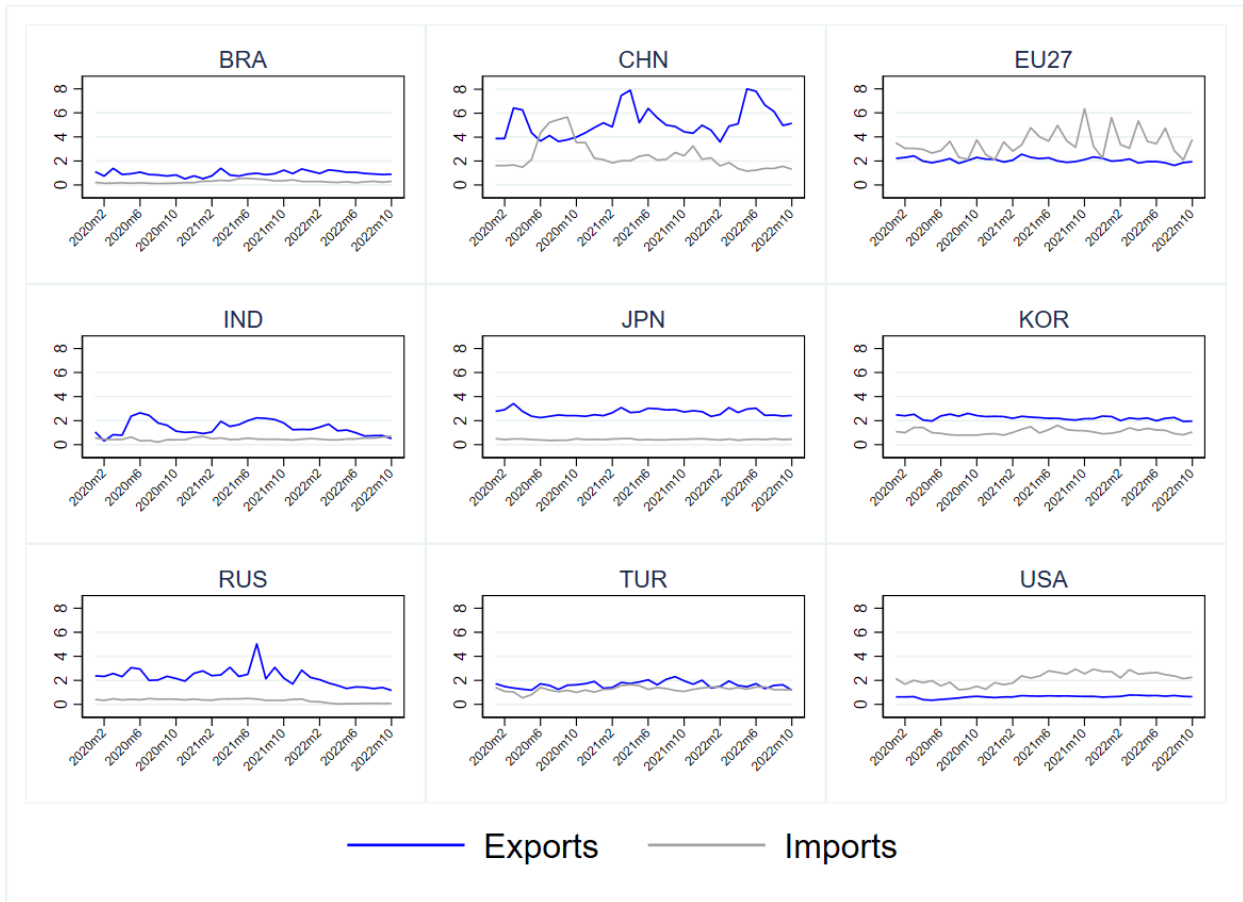
Economy	2016	2017	2018	2019	2020	2021	2022 (Jan Oct)	2022 (ann)	2021-22
CHN	13,495.0	13,818.8	14,246.3	15,407.2	38,626.7	27,741.1	15,186.0	18,223.1	-34.3%
EU27	42,177.6	42,511.8	46,760.0	41,558.1	34,576.3	45,777.2	37,931.5	45,517.7	-0.6%
IND	9,876.5	8,853.2	8,980.9	8,888.5	5,289.0	5,853.6	5,199.9	6,239.9	6.6%
JPN	5,989.5	6,211.9	6,021.4	6,442.0	5,194.3	5,446.0	4,397.0	5,276.4	-3.1%
USA	30,691.8	35,322.3	31,703.6	27,063.6	20,126.0	29,503.1	24,868.7	29,842.4	1.2%
RUS	4,432.8	6,475.9	6,348.9	6,792.4	5,010.3	4,935.6	1,042.2	1,250.6	-74.7%
KOR	23,230.1	19,280.3	14,888.9	16,315.5	11,944.2	14,020.7	11,255.1	13,506.1	-3.7%
TUR	17,004.6	15,810.2	14,041.4	12,310.5	12,940.0	16,142.6	13,420.6	16,104.7	-0.2%
BRA	1,842.5	2,290.4	2,355.0	2,319.4	2,008.6	4,900.6	2,630.6	3,156.7	-35.6%
TWN	7,887.3	7,452.0	7,717.2	7,325.1	7,429.9	9,577.4	6,192.1	7,430.5	-22.4%
UKR	1,138.5	1,401.2	1,580.0	1,533.7	1,314.3	1,261.9	430.3	516.4	-59.1%
MEX	9,607.9	11,509.7	10,923.7	11,626.6	9,917.6	14,512.0	9,492.8	11,391.3	-21.5%
CAN	7,761.1	8,844.4	9,149.2	7,284.3	6,963.0	9,908.3	7,854.9	9,425.8	-4.9%
SAU	7,357.4	4,617.3	5,341.0	7,952.0	7,050.2	3,888.8	2,562.5	3,075.0	-20.9%
IDN	12,576.4	11,413.1	11,692.8	13,434.9	9,704.5	10,228.3	8,910.5	10,692.7	4.5%
EGY	879.0	1,653.6	437.3	600.9	195.5	1,263.0	1,332.8	1,599.4	26.6%
GBR	7,611.8	7,613.2	7,833.1	7,063.6	4,961.8	6,460.4	4,787.1	5,744.6	-11.1%
MYS	9,057.9	7,732.7	7,937.7	7,356.2	5,832.7	6,335.7	4,800.9	5,761.0	-9.1%
ZAF	1,378.8	1,163.5	1,009.5	1,104.0	1,117.6	1,712.7	1,311.6	1,573.9	-8.1%
WLD	382,020.5	382,243.6	378,069.9	362,759.4	331,744.9	378,158.2	287,534.3	345,041.2	-8.8%

Note: values expressed in thousands of metric tonnes. The column 2022 (Jan-Oct.) reports actual trade data for the period January-October 2022. The column 2022 (ann) includes 2022 annualised trade data so as to make comparison with other years feasible. EU27 data refer to external trade.

Source: OECD calculations based on ISSB data.

Figure 7. Steel trade balances

Monthly data, Jan. 2020 – Oct. 2022

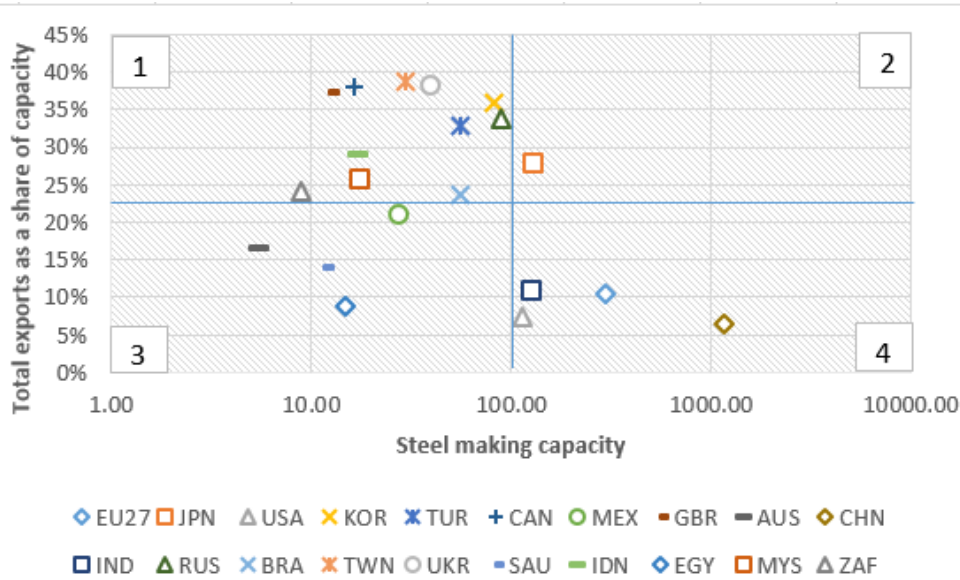


Note: The chart presents steel trade balances at monthly level for major steelmaking economies. Blue and grey lines correspond respectively to exports and imports. EU27 data refer to external trade.

Source: OECD calculations based on ISSB data.

4.2. Steel capacity and exports relation

Figure 8. Total exports as a share of total steelmaking capacity



Note: The figure shows the average total exports as a share of steel capacity and average capacity of the 20 largest global steel producers throughout the period 2015-2022 (estimates).
 Source: Steel Unit research desk

To try to understand the relationship between capacity and exports, Figure 8 and Figure 9 represented countries by dots in four quadrants according to their aggregate capacity (x-axis) and export (or net exports) as a share of capacity (y-axis). These figures give an indication to what extent capacity in an economy is oriented towards world markets or domestic demand. Many countries with comparably modest capacity show a relatively strong export orientation (Figure 8). More precisely, on Figure 8, there seems to be a positive relationship between the aggregate steel production capacity of an economy and its (total) share of exports up to the 100 threshold of steelmaking capacity. Nevertheless, after this 100 threshold we find the relationship inverts and becomes negative essentially because of large blocks (China, the EU, the US, and India) for which aggregate capacity is large but their share of exports is more modest. An explanation could be that for large economies, steel is often sold and transported within the economy (e.g. trade between different states in India and the US, between different provinces in China, etc) and thus are not captured by the statistics of trade with other economies. Figure 9 complements this picture by considering net exports, i.e. exports minus imports, for the y-axis. Because large economies will border a greater number of other economies and thus will have more opportunities for importing crude steel, subtracting imports level the comparison and the positive relationship between capacity and (net) exports is re-established. China is a (net) exporting giant, but when the size of its production capacity is pictured in, its (net) exports only represent about to 5% of its production capacity. Hence, net exports as a share of capacity remain much lower than many economies of lower aggregate capacity, illustrating that other smaller producing economies are either well integrated in steel products trade flows, or that those economies are developing their steel industries with an export-oriented mindset. This being said, the sheer size of the Chinese production capacity implies that even though its production is essentially geared towards the domestic economy – contrary

to a number of smaller economies – any change in the steel market conditions in China can have significant consequences for the trade and international markets. .

In Figure 8, Japan is the only country with a capacity over 100 mmt2 and high export shares at around 28%. However, in Japan, steelmaking capacity and total steel exports decreased by 6.4% and 21.6% respectively in the last five year.

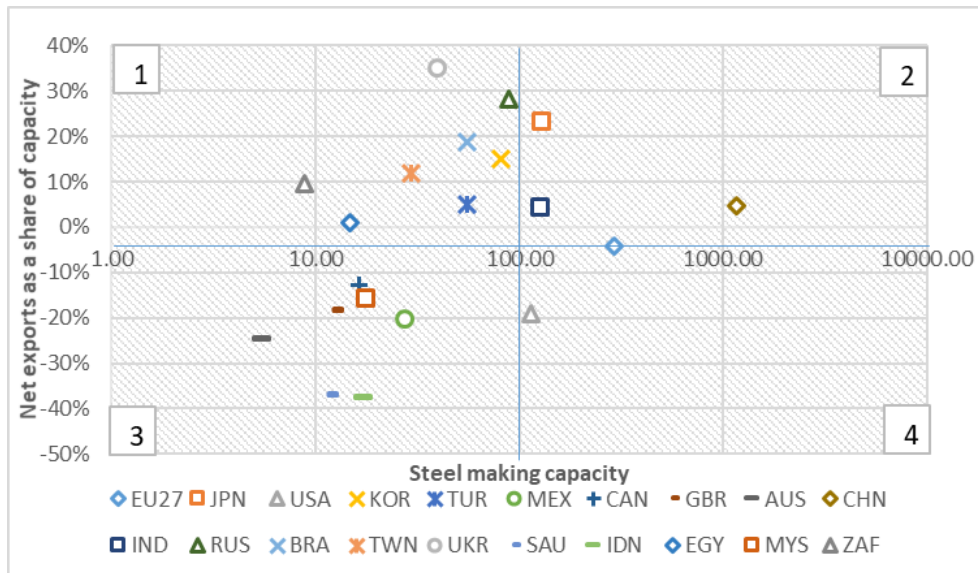
India, China, the EU and the US appear in the same quadrant 4 in Figure 8, highlighting these regions high steelmaking capacity but lower total exports as a share of this. However, in Figure 9, only China, India and Japan are displayed as net exporters of steel with large steelmaking capacity.

In Figure 9 quadrant 1, Ukraine is the country with the largest shares of net exports over steel capacity despite the fact that between 2021 and 2022, Ukraine is expected to lose 46% of its net steel exports because of the war.

In Figure 9 quadrant 3, Indonesia is the country with the lowest percentage of steel net exports over its capacity, however, in the last five-year, Indonesia steel export grew by 397.9% and its steelmaking capacity almost doubled. In the near future, Indonesia is among few other South-East Asian nations, such as Malaysia and Viet Nam expected to expand their capacity and become a major steel producers and exporters (Steel Orbis, 2022_[17])

In the fourth quadrant of Figure 9, South Africa appears as a county with a steelmaking capacity over 100 mmt2 but low steel exports. In the last five years, the county experienced a decrease in exports and steelmaking capacity while imports have increased up to last year. Various problems have contributed to the worsening of the steel market in the country over the last five year, among them rising production costs, poor availability of steel, and disruptions of the largest steel firm’s operation over strikes, transportation issues, and energy supplies interruptions (Kallanish, 2022_[9]) (Kallanish, 2022_[10]) (Kallanish, 2022_[6]).

Figure 9. Net exports as a share of total steelmaking capacity



Note: The figure shows the average net exports as a share of steel capacity and average capacity of the 20 largest global steel producers throughout the period 2015-2022 (estimates).

Source: Steel Unit research desk

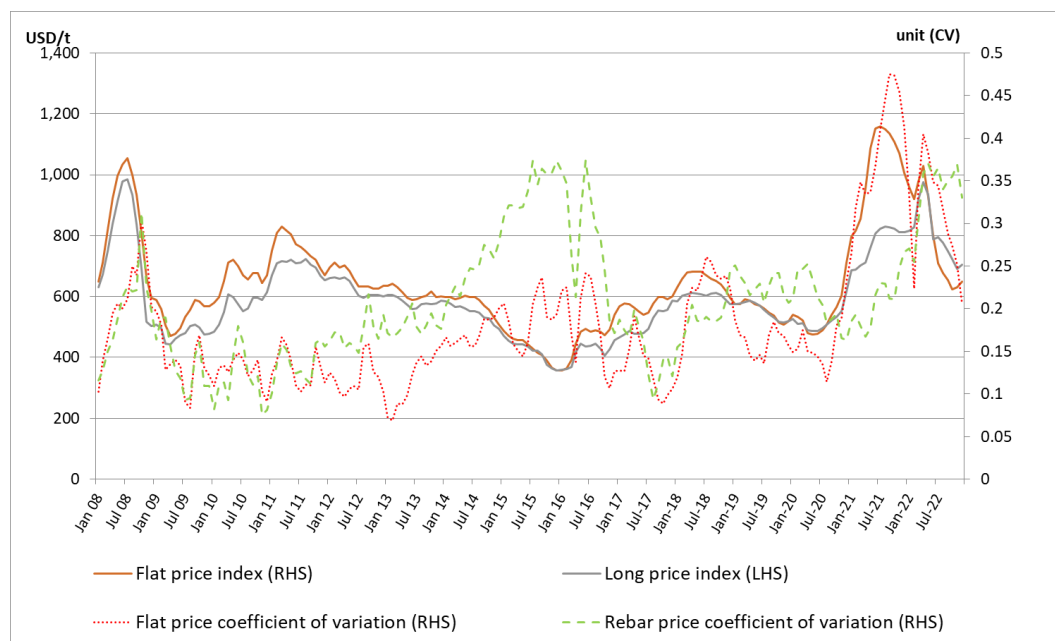
5. Steel and raw material prices

Steel prices have erased most of their 2021 gains, but have been sharply diverging across regions. As of end of December 2022, world steel flat prices have come back in line with their broad historical averages, contrary to rebar prices which remain 19% higher than historically in spite of their recent fall. World steel price averages hide a strong regional dispersion, since US, EU and Japan steel flat prices remain at elevated compared to their historical levels, whereas Southeast Asian and Chinese steel flat prices have fallen below their historical levels. Prices of iron ore prices and scrap prices are largely in range with their historical levels, whereas international coking coal prices, on the contrary, are 43% higher than historically. As a result, price margins are low, which should impact future steel firms net margins.

5.1. Global steel prices

Broad indices of both flat steel prices and rebar prices have fallen significantly, and as of end of December 2022 stood respectively 54% and 12% lower than one year earlier. In spite of those sharp decreases, rebar prices remain high by historical standards, being 19% higher than their average over the whole period from January 2008 to December 2022 (Figure 10).

Figure 10. Aggregate flat and long steel price averages



Note: The flat price and long steel price indices are defined as the arithmetic average of the individual regional Platts price series for the United States, North Europe, China, Japan and India, when available. This indicator had the closest fit to the two global Platts price indices used in Steel Market Developments reports prior to being discontinued (in September 2017). The coefficients of variation (CV) are the ratio of the standard deviation of the regional Platts price series making up the indices to their mean, thus capturing price dispersion across regions.

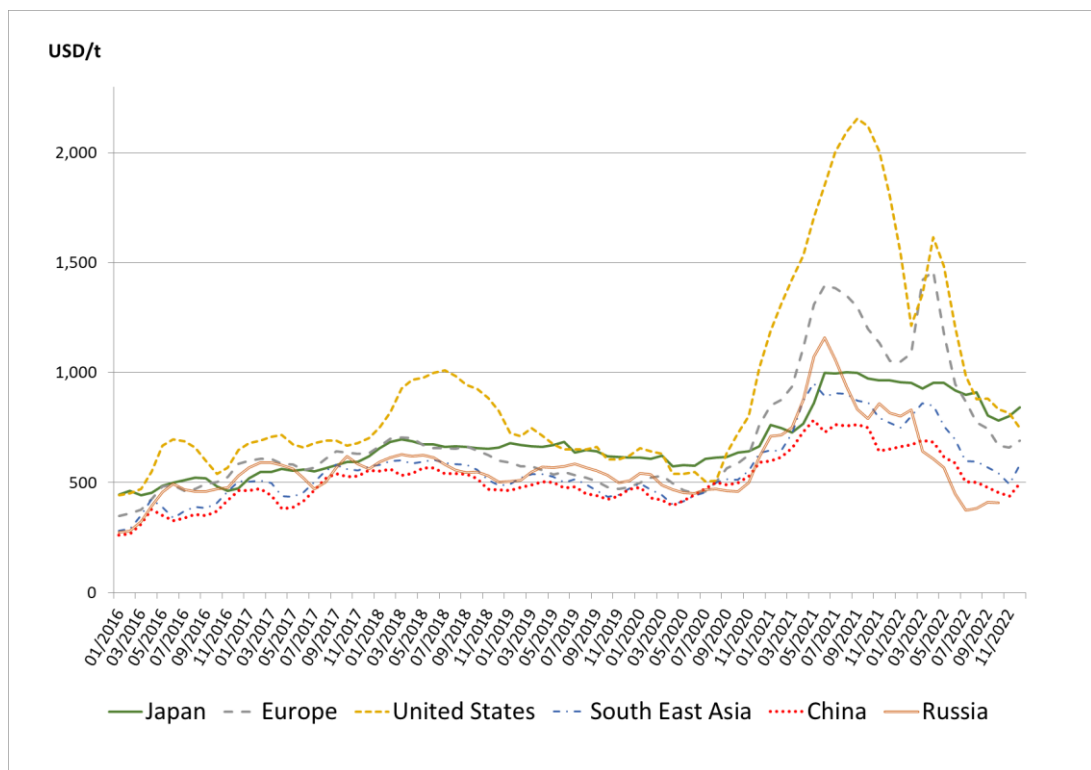
Source: Platts Steel Business Briefing.

5.2. Steel prices per region

Flat steel products prices displayed a similar price dynamic for all regions during the second half of 2022, with regions where the price had increased the most continuing their correction (Figure 11).

Price dispersion is nevertheless still high: on one side, Chinese prices have erased all their gains and stand at very low levels. On the other side, US, EU and Japanese prices remain at historically high levels in spite of their recent decrease. Such price differentials can change trading patterns by making steel imports from regions with lower prices more competitive abroad and can also impact the price-competitiveness of steel-intensive downstream sectors.

Figure 11. Flat steel products' prices have erased most of their 2021 gains for most regions



Note: Latest price: December 2022.

Source: Platts Steel Business Briefing.

Rebar product prices per regions are depicted in Figure 12. Although EU rebar prices have come down, mills are cutting back on production going into 2023 to avoid selling at a loss amid high and uncertain energy price and high raw material prices, according to the International Rebar Producers and Exporters Association (Can, 2023^[18]). Furthermore, EU mills seem to have full order for the first quarter of 2023, and hence are not prone to giving discounts to their buyers (Tanatar, 2023^[19]). Hence, it is possible that the stabilisation of prices at a high level for rebar witnessed in the EU is going to continue in 2023. On the other side, there could be a combination of limited end-user demand from some industries, such as construction, and the availability of competitive imports and an anticipated increase of availability. Three European steelmakers confirmed the restart of blast furnaces in Spain, Finland and Slovakia, and the return of other equipment idled in 2022 will certainly add

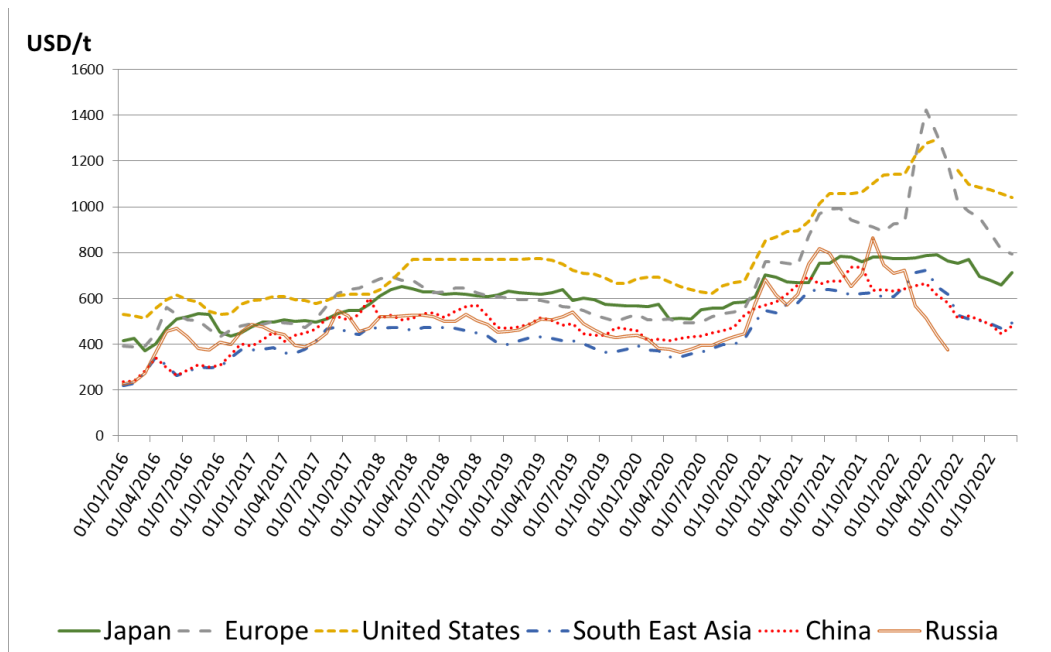
downward pressure on European steel prices (Tanatar, 2023^[19]). This should provide a cap on mills’ prices as EU mills will lose market share to imports and domestic buyers will retreat should they try to increase price further (Platts Commodity Insights, 2023^[20]).

In the US, the USD 1.2 trillion Infrastructure Investment and Jobs Act included a new, bipartisan, “Build America, Buy America” Act, which applies to all taxpayer-funded infrastructure and public works projects and has some domestic content requirement for the steel used in such projects. It will enter into force in January 2023 and should continue maintaining upward pressure on prices (Can, 2023^[18]). Interestingly, and in spite of this high price environment, US mills’ margins are reported to remain under pressure due to the rising price of raw material prices including scrap (Ruggiero, 2023^[21]). US mills use predominantly scrap, and hence affordable scrap and secured supply chains of scrap are crucial for US steel production. There is still a continued trend to utilise more scrap in furnaces and incorporate more obsolete grades in the mix, but the demand for US scrap makes the US scrap market particularly tight (Ruggiero, 2023^[21]).

In China, both rebar and flat prices are low historically, and raising inventories levels and steel producers ramping up production in February 2022 should maintain downward pressure on prices going forward. Nevertheless, downsides to prices should be limited due to an improvement of the country’s COVID restrictions that has boosted market sentiment. and to raw material costs providing a floor to current Chinese steel prices (Platts, 2023^[22]) (Can, 2023^[18]).

Overall, it is probable that the regional price differentials will continue in 2023 as they seem to be due to different factors specific to each region: high energy price and energetic uncertainties for the EU coupled with mitigated sentiment and uncertainty on the health of the EU industry in general, domestic demand with high scrap costs in the US, and an ailing real estate sector amid an easing of COVID restrictions and a boost of sentiment in China.

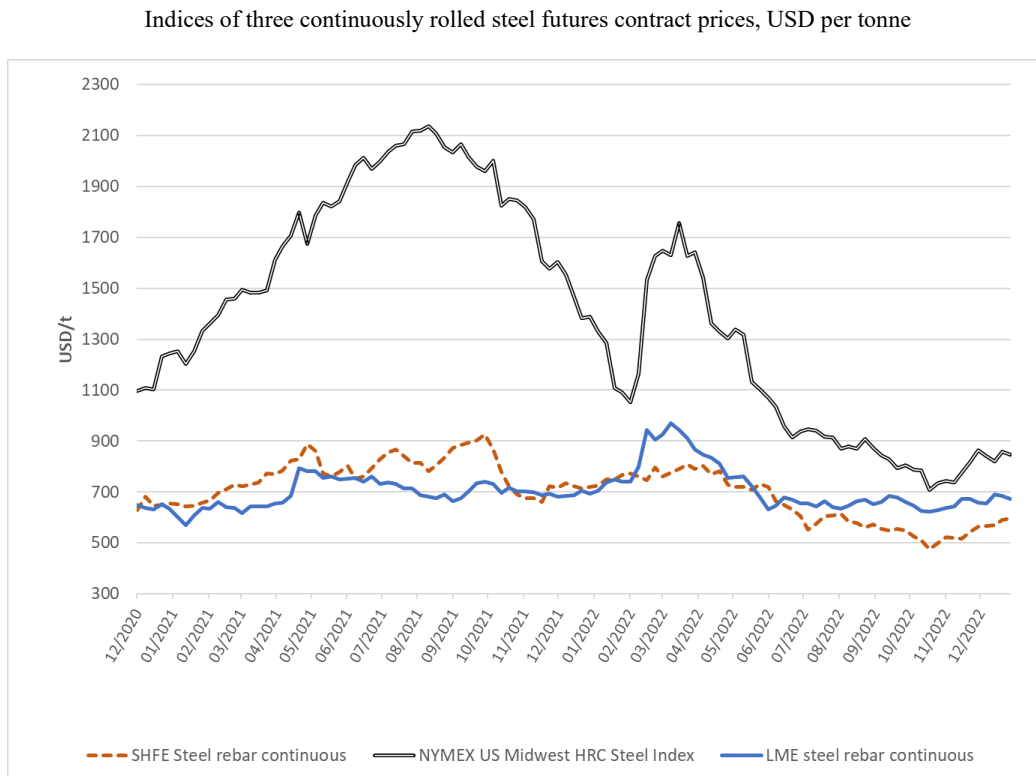
Figure 12. Steel price for rebar have remained historically high for most regions



Note: The latest price is December 2022.
Source: Platts Steel Business Briefing.

Steel futures prices tend to move slightly in advance of spot prices, suggesting that they may be able to predict steel spot price dynamics at short frequencies by being quicker to incorporate new market information. Figure 13 below shows three steel futures prices obtained by rolling short-term futures provided by Refinitiv.

Figure 13. Steel futures prices (as of 24 January 2023)



Note: NYMEX US Midwest futures prices were converted to correspond to metric tonnes rather than short tons. SHFE Steel rebar futures prices were converted from RMB to USD using daily exchange rates at closing. For more information on contract specifications, please refer to <https://www.lme.com/en-GB/Metals/Ferrous/Steel-Rebar#tabIndex=0> for LME steel rebar contracts; to <http://www.shfe.com.cn/en/products/SteelRebar/contract/9220216.html> for SHFE steel rebar continuous contracts, and to <https://www.cmegroup.com/education/files/hot-rolled-coil-steel-index-futures-options.pdf> for NYMEX US Midwest HRC contracts. For a more detailed description of steel futures market, see (OECD, 2018^[23]).

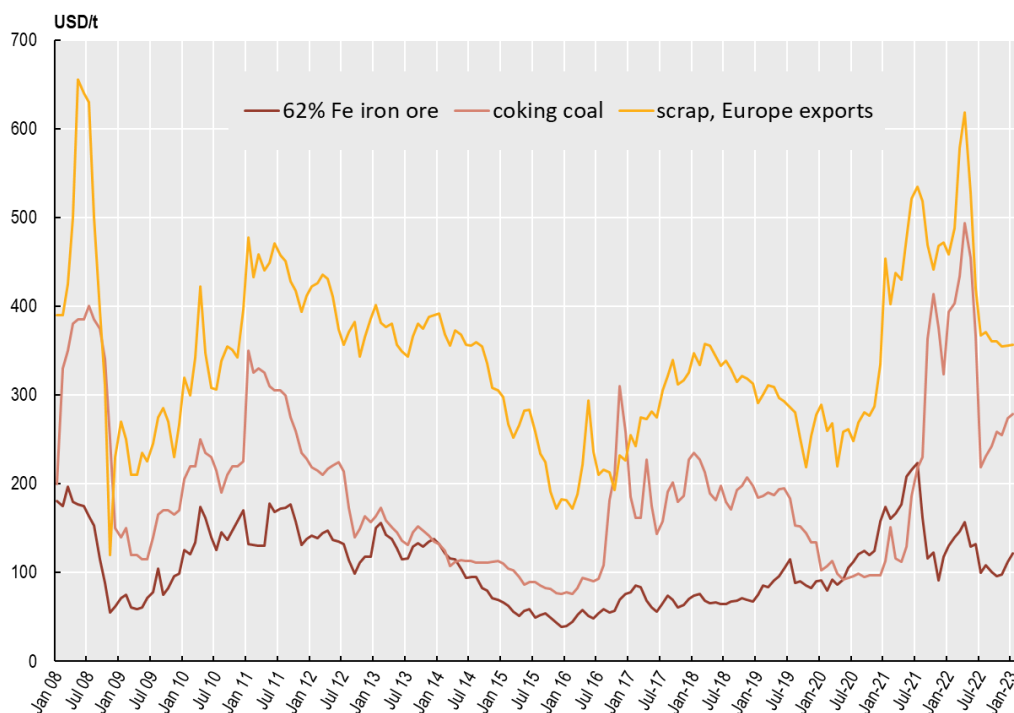
Source: Refinitiv.

5.3. Steel raw material prices

Prices of the main steelmaking raw materials have been crashing down since the beginning of the year 2022, erasing previous gains. As of end of December 2022, iron ore prices and scrap prices are largely in range with their historical levels: iron ore prices are only 5% higher than their historical average over the period 2008 to 2022, not adjusting for inflation, while scrap prices are a meagre 4% (Figure 14). Coking coal prices, on the contrary, are 43% higher than historically, in spite of its abrupt decrease (-15%) compared to one year earlier (Figure 14). In recent months, recession concerns are pulling down steel demand and raw material prices globally, while the Ukraine war is also pressuring prices lower by changing trade routes (Platts, 2022^[24]). The higher price of coking coal means that a typical

basket of raw material used to produce steel is still 17% higher than historically (over the period 2008 to 2022).

Figure 14. Prices for key steel-making raw materials (as of January 2023)



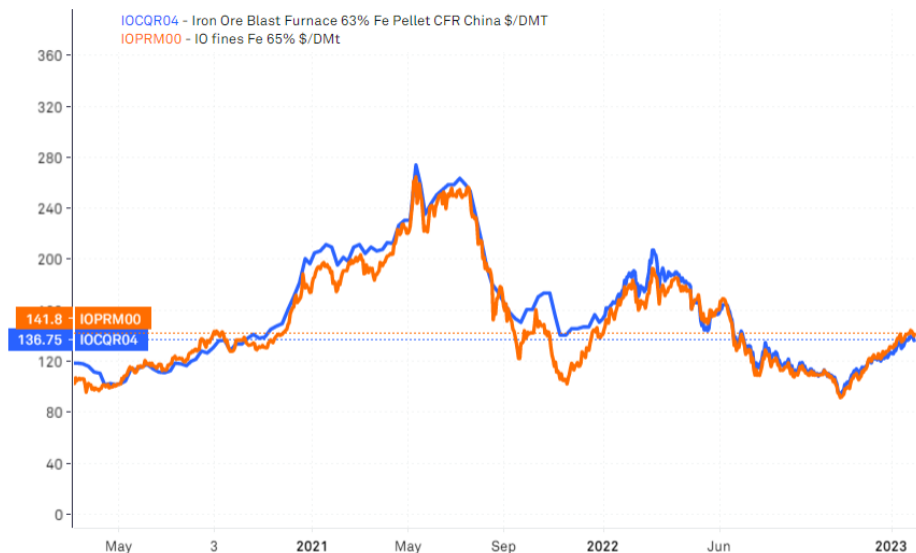
Note: The iron ore price series is Platt's "Forwards / SGX 62% Fe Iron Ore cash-settled swaps (dry metric tonne) / China import CFR Tianjin port USD / t"; the coking coal price series is Refinitiv's "Premium Coking Coal Australia"; the scrap price series is Platts "Scrap / Shredded / N.Europe domestic delivered UDS / t"
Source: Platts Steel Business Briefing (SBB), Refinitiv.

A possibly crucial development for **iron ore prices** going forward has been the setup of a new state-owned Chinese agency, the China Mineral Resources Group (CMRG), whose aim is to increase market power of Chinese buyers of iron ore by centralising all their bids for the raw material (Bloomberg News, 2023^[25]). The agency, formally established on 19 July 2022, is set to start iron ore purchases in 2023. Guo Bin, the executive vice president of the China Baowu Steel Group, is the general manager of the firm, according to Tianyancha, a Chinese online database of company information (Bloomberg News, 2023^[25]). The CMRG is reported, as of December 2022, to have started discussing contracts with many top executives of iron ore companies from exporting countries. The world's largest steelmaker, Baosteel, is said to have allocated more than half of its 2023 iron ore purchase to the CMRG, which in terms will centralise all Chinese buying of iron ore. Another goal of the CMRG is to develop domestic iron ore resources, and to oversee the development and acquisition or control of iron ore mines overseas. CMRG is backed by the State-owned Assets Supervision and Administration Commission (SASAC), the Chinese national wealth fund. The CMRG is seen by many market participants as having the political mission to centralise buying to bring down prices and secure supply chains of the raw material (Bloomberg News, 2023^[25]). On January 2013, the Chinese National Development and Reform Commission (NDRC) reiterated its pledge to limit raw material price increases and to fight against "erroneous data and misinformation" (Bloomberg, 2023^[26]). Given that iron ore prices are only 5% higher than their historical average over

the period 2008 to 2022 (Figure 14, Figure 15), it is unclear which evidence the NDRC is relying upon.

The impact of the CMRG on iron ore pricing is not certain. By significantly increasing Chinese buyers' bargaining power, downward pressures on price are certain to materialise. Nevertheless, current term contracts for the purchase of iron ore are made on a quarterly basis by steel firms using spot iron ore prices as a reference (Bloomberg, 2023^[26]). The additional market power from Chinese buyers may simply translate into greater discounts for the large CMRG's purchases, with the spot price used for other buyers remaining unaffected, thus conferring a significant cost-advantage to Chinese steel firms compared to other steel firms. Over the longer term, basic economic theory dictate that suppressed iron ore prices for Chinese buyers will translate into decreased profit margins for iron ore producers and thus lower than optimal levels of investments for iron ore mining and exploration going forward, and as a consequence into a restricted and sub-optimal output of iron ore globally compared to what a market equilibrium price would have allowed.

Figure 15. Although slightly increasing, iron ore prices do not seem excessively high by historical standards



Source: Platts

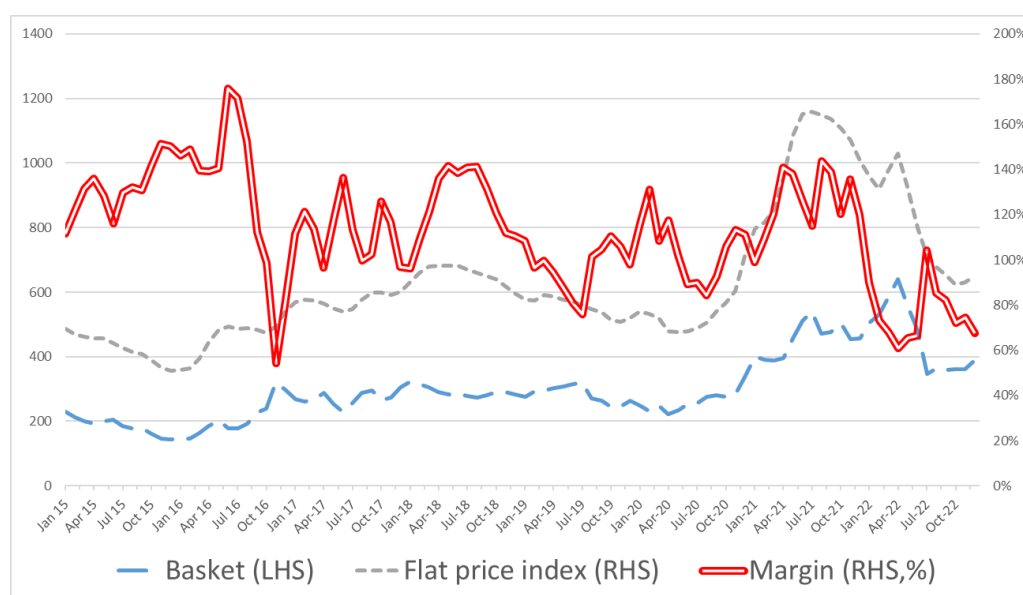
International **coking coal prices**, as proxied by Australian exports (Figure 14), have fallen since their peak yet remain at historically high levels. The Chinese authorities have allowed three central government-backed utilities agencies as well as its largest steelmaker to resume coal imports from Australia, the first such action since Beijing imposed an unofficial ban on Australian coal imports in late 2020 (Trading Economics, 2023^[27]), which may provide a floor to coking coal prices going forward, but is not the reason of current elevated prices.

The main reason for high international coking coal prices – 43% higher than historically – is probably the dislocation of previously established trade patterns following the ban on Russian coking coal (Forster, 2023^[28]). Russian coal trade into the EU dried up as the EU's ban in August took effect. Import volumes from the UK were already minimal prior to the EU ban. Japan also effected a total import halt similar to the EU. On the contrary, Russian coking coals saw strong demand in China, and also, to some lesser extent, in India, trading at prices much lower than the price for coking coal from Australia used as an international

price in this report (Forster, 2023^[28]). A key trend was replacing Russian pulverized coal injection (PCI) grades and other Russian met and steam coals in markets such as Europe and Japan.⁶ EU imports of metallurgical coals from the US increased, while US coking coal exports saw a contraction into China in 2022 (Forster, 2023^[28]). Divergence of prices was also observed in the thermal coal market.⁷ Divergence in raw material prices has a strong potential for impacting the steel industry's competitiveness in jurisdictions that have not a secured or cost-effective supply chains. Increased imports, in that respect, are simply the symptom of ailing domestic industries rather than the cause.

The steel raw material price margin, measured by the difference between the price of steel and a generic basket of steel inputs, decreased significantly by end of 2021 as a consequence of steel products' prices falling more quickly than their associated raw material prices (Figure 16). The year 2022 was volatile, witnessing both an increase of those price margins and a following decrease; as a result, the price margins ended at the year at similar levels than when it started the year (-0.4%). As of end of December 2022, the margin indicator between steel products' prices and a representative basket of raw materials needed to obtain steel products is 32% lower than historically (Figure 16). Nevertheless, a word of caution is warranted when interpreting the broad averages indicated in Figure 16. Indeed, price divergences observed and commented upon in this report for both steel and raw materials alike means that generic price margins should rather be estimated on a region-specific basis than as a world average.

Figure 16. The margin between steel and raw material prices is close to historical lows



Note: Last data point is June 2022. The raw materials basket for steel production is made up of 70% of the usual quantities of iron ore (1.6 tonne) and coking coal (0.77 tonne) needed to produce steel in the integrated process and 30% of the quantity of ferrous scrap (1.07 tonne) needed to produce steel in the electric arc furnace process (see OECD, 2016). Prices used are as follows: Iron ore Fines, 62% Fe, SPOT, CFR China; Hard coking coal spot, FOB Australia; Scrap, shredded North Europe domestic price. The basket is compared against HRC world prices. The margin is defined as the percentage difference between the steel flat price and the raw materials basket price.

Source: OECD based on data from Refinitiv and Platts Steel Business Briefing (SBB).

6. Steel consumption and outlook

In its October 2022 SRO, worldsteel forecasts that steel demand will decrease by 2.3% to 1 797 mmt in 2022, and rebound slightly by about 1% in 2023 to 1 814.7 mmt. The effect of the Russia's war of aggression against Ukraine on energy and commodity prices, higher than anticipated inflationary pressures especially in Europe, the tightening of central banks' monetary policies especially in the US, as well as weaker demand from China and the impact of Chinese strict COVID policies have worsened steel demand trends globally. Rising interest rates, weak consumer spending and higher energy prices are expected to impact significantly steel demand in the coming months.

6.1. Global steel market outlook

Global apparent steel consumption outside China has declined about 3.2% during the first half of 2022 and is expected to contract by 4% in 2022 and to stay stagnant in 2023. During the second half of 2022, both developing and developed economies are expected to experience rising interest rates which will reduce investments in fixed assets and directly impact steel demand. High energy costs are expected to slow industrial output, especially in the EU, where industrial rationing could potentially force major industrial users to halt production. Consumer spending could decrease impacted by growing inflation. World Steel Dynamics expects global steel consumption outside China to decline by 7.5% during the second half of 2022 compared to the same period last year. In 2023, demand was previously expected to experience a 1% increase as inflation is expected to slow down, central banks end their credit “tightening” and consumption and employment recover (World Steel Dynamics, 2022[41]), but the slowdown of the Chinese real estate and strict COVID policies are weighting down on demand. Overall, steel demand is expected to grow at a significantly slower pace than previously projected. The largest steel consuming sector, real estate and infrastructure, is under pressure from high debts and bankruptcies that have resulted in a sharp contraction in real estate investment and price declines (see Box 2). The government introduced a set of 16 measures to prop up the real estate sector, but it is unclear if they will significantly boost investment in the sector.

6.2. Regional steel market outlook

6.2.1. Americas

In Central and South America, finished-steel demand rebounded by a robust 30.0% in 2021. Nevertheless, worldsteel forecasts demand will decrease by 7.8% in 2022 (worldsteel, 2022[29]). The Latin American Steel Association (Alacero) forecasts the sector's growth outlook in Latin America for late 2022 and early 2023 to be moderate, given the backdrop of global inflation and contractionary monetary policy (Alacero, 2022[30]).

In Argentina, according to la Cámara Argentina del Acero (Argentine Chamber of Steel), crude steel production increased by 4.5% in 2022 driven by demand from such as sectors automotive and construction (Argentine Chamber of Steel, 2023[31]).

In Brazil, according to Instituto Aço Brasil (Aço Brasil), apparent steel consumption falls by 10.9% in 2022. However, Aço Brasil forecasts that Brazil's steel production and consumption is set to improve in 2023 and that consumption should rise by 1.5% in 2023 (Kallanish, 2023[32]).

In Chile, Instituto Chileno Del Acero (ICHA) projects a slight recovery in apparent steel consumption, which could rise by about 0.8%, reaching 2,4 mmt for 2023. However, ICHA says that this would be impacted by the levels of investment in construction that occur during 2023, in addition to other factors, such as the global economic crisis and Russia's war of aggression against Ukraine (Instituto Chileno Del Acero, 2022^[33]).

In Colombia, the Central Bank forecasts that Colombia will enter a technical recession in 2024 after contracting during the second and third quarters of 2023. The economic slowdown, the increase in interest rates, and the weakness of the peso against the dollar will continue to weaken the productive sector and job creation (Global Americans, 2023^[34]).

In North America, steel-demand grew by 18.6% in 2021 and worldsteel expects it to grow at a 0.9% rate in 2022 and a 1.8% rate in 2023 (worldsteel, 2022^[29]).

In Canada, according to Bank of Canada, the effects of the rise in interest rates are expected to broaden and moderate consumer spending on services as well as investment spending in 2023. Growth is then projected to pick up in late 2023 (Bank of Canada, 2023^[35]).

In Mexico, UN Economic Commission for Latin America and the Caribbean (ECLAC) forecast an economic growth rate of 1.1%. ECLAC says 2023 growth projections represent a "return to normality" following the post-2020 economic shock and subsequent economic growth rebounds in 2021 and 2022 (Mexico News Daily, 2022^[36]).

In the United States, the Inflation Reduction Act of 2022 (IRA) offers funding, programs, and incentives to accelerate the transition to a clean energy economy (U.S. Environmental Protection Agency, 2022^[37]). In the transportation sector, the U.S. government will provide up to USD 7,500 for the new purchase of an electric passenger vehicle and up to USD 400 for a used electric car. The government also plans to spur investments into clean energy technologies by incentivising needs for clean energy to increase the demand for clean energy sources by 2030 (World Economic Forum, 2022^[38]). The automotive sector has experienced shortages of computer chips and other parts in 2022 which contributed to vehicle sales dropping to their lowest level in more than a decade. Analysts are now expecting sales to grow by roughly 1 million to around 14.8 million in 2023 as demand is started to peak up. However, the sales are still short of the normal 17 million per year before the COVID (Fortune, 2023^[39]).

6.2.2. Africa and the Middle East

According to worldsteel's October 2022 SRO, African steel demand is expected to grow by 3.2% and 4.4% respectively in 2022 and 2023, after a 6.1% growth in 2021 (worldsteel, 2022^[29]). Economic growth in Sub-Saharan Africa is set to decelerate from 4.1% in 2021 to 3.3% in 2022, as a result of a slowdown in global growth, rising inflation exacerbated by Russia's aggression against Ukraine, adverse weather conditions, a tightening in global financial conditions, and the rising risk of debt distress (The world bank, 2022^[40]).

In South Africa, the automotive industry expects the domestic new-vehicle market to remain positive in 2023, despite weakening domestic economic indicators and a deteriorating global growth outlook. The Automotive Business Council (NAAMSA) expects single-digit growth in new-vehicle sales as the market returns to pre-pandemic levels in both sales and exports (Creamer Media, 2023^[41]).

In the Middle East and North Africa (MENA), steel demand is expected to increase by 3.5% and 3.9% in 2022 and 2023 respectively (worldsteel, 2022^[29]). Economic activity in the MENA region is expected to sharply decelerate in 2023 after strong growth in 2022. Real GDP growth is forecast to decline to around 3.5% in 2023-24 from an 18-year high

of 6.1% in 2022, outpacing the broad performance of the global economy over the same period (S&P Global, 2022^[42]).

Morocco leads the African automotive industry with a production capacity of 700,000 vehicles a year (Morocco Now, 2023^[43]). The EU, the largest market for Morocco's cars, is set to ban imports of vehicles with combustible engines by 2035 which means Morocco needs to transition to electric car manufacturing. To gear up for the changing demand, the Moroccan car industry is well on its way to doubling its production input of electric cars over the coming two years, with a production target of 100,000 units annually (Trends'n'africa, 2022^[44]).

In Egypt, the construction sector is expected to expand at a compound annual growth rate of 6.6 percent between 2021 and 2025 (Middle East Economy, 2023^[45]).

In its October 2022 SRO, worldsteel forecasts steel consumption to increase by 2.4% in the Middle East in 2022 and 3.4% in 2023, following a 4.9% growth in 2021 (worldsteel, 2022^[29]).

In Iraq, the government approved projects to build 15 new residential cities within plans to tackle a persistent housing. The measures include preparing roads that will link these cities and inviting bids for power and other infrastructure projects on the planned sites (Zawya, 2023^[46]).

In the UEA, it is expected that Dubai's prime residential market will experience the world's strongest growth in 2023, with high-end properties in the city remaining in strong demand. Despite global instability, rising inflation rates, and chatter of a looming recession, the upward momentum of Dubai real estate is supported by appealing incentives such as an extremely low rate of tax, long-term visas, and excellent connectivity (MEConstructionNews, 2022^[47]).

In Iran, according to the Iranian Ministry of Industry, Mine and Trade, the automotive production is projected to grow by at least 50% during the current Iranian fiscal year (March 21, 2022, to March 2023). In March 2022, the President of the country issued eight presidential executive orders in the fields of production to expand the production of new advanced vehicles and electric vehicles. Moreover, the government also focused on investment for the entry of knowledge and technology from the defence and space industries and the capacity of knowledge-based companies to transform the automotive industry of Iran (GlobalData, 2022^[48]).

6.2.3. Asia and Oceania

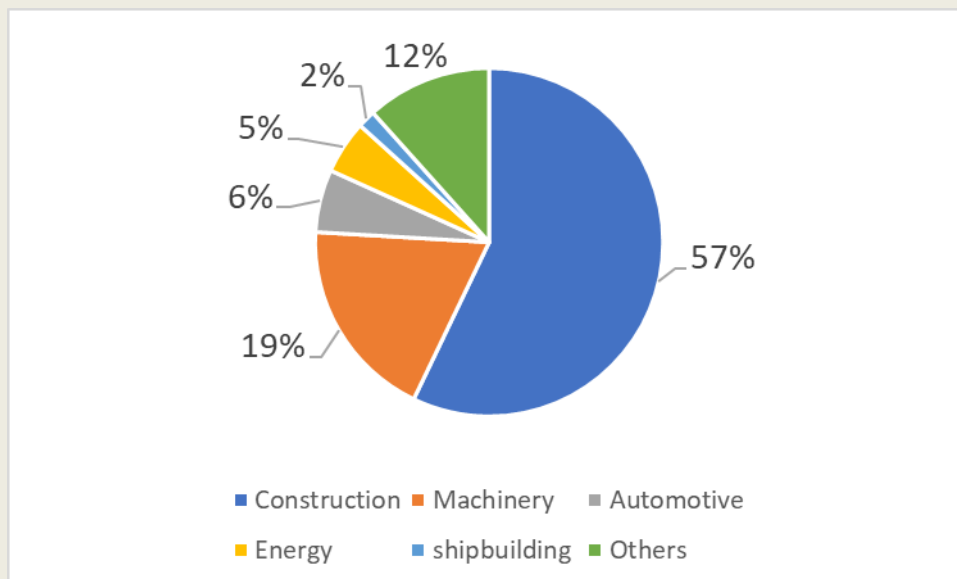
In worldsteel's October 2022 SRO, steel consumption in Asia and Oceania is forecast to decrease by 2.2% in 2022 and increase by 1.2% in 2023 after a 1.3% decrease in 2021 (worldsteel, 2022^[29]).

In China, the China Metallurgical Industry Planning and Research Institute (MPI) forecast that steel consumption would decrease by 1.1% to about 910 million tons in 2023. The three major pressures (consumption, supply, and outlook) facing China's economic development were expanded in 2022. Shrinking demand is a major problem facing the economy. It has come to the surface due to cooling consumer sentiment, a slump in the real estate market, a slowdown in investment in the manufacturing industry, and sluggish growth in international trade. In 2023, the government is expected to continue its aggressive fiscal policy and stable monetary policy, optimize its measures against COVID, concentrate all its strengths toward high-quality development, and support the stability of steel demand (21 财经, 2022^[49]).

Box 1. China's real estate sector

The construction sector accounts for about 60% of Chinese total steel demand. According to MPI, the steel consumption for construction in 2022 would decrease by 3.6% to about 532 mmt and expected to decrease by 2.3% to about 520 mmt in 2023 (经济参考报, 2022^[50]).

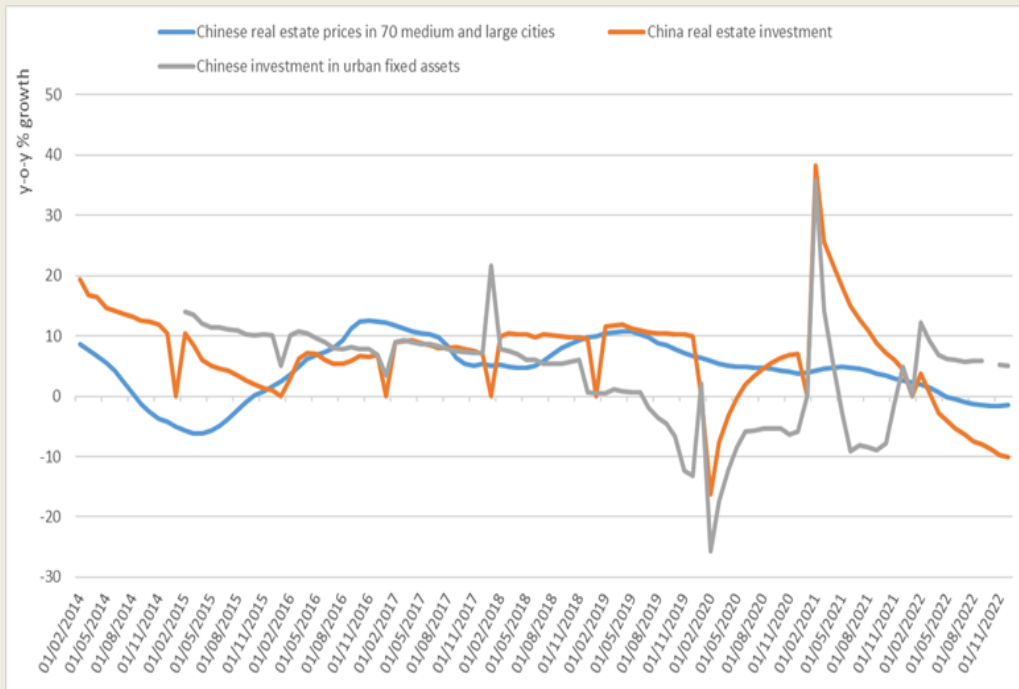
Figure 17. Steel demand forecast by steel consumption sector in 2023



Source: 经济参考报

The prosperity of the real estate industry has a greater impact on the demand of the steel industry. Since the beginning of 2022, the pressure on the sales and return of funds from real estate enterprises has been greater, and market expectations have weakened. Investment in real estate in China has plunged by 10% in December 2022⁸. Such a decrease has not been witnessed since the start of the series in February 1998, with the exception of the February 2020 decline of -16% which happened on the outset of the COVID pandemic (Figure 18). Price have been declining since May 2022 in the top 70 large and medium Chinese cities, albeit to a limited extent. Chinese investment in urban fixed assets, though, is increasing at a constant pace (Figure 18).

Figure 18. China's real estate investment is falling 10% year-over-year while top 70 cities' prices continue to decline (as of end of December 2022)



Note: The surveyed cities are 70 large and medium-sized cities, including 35 cities including municipalities directly under the Central Government, provincial capitals, capital cities of autonomous regions (excluding Lhasa) and cities under separate state planning, as well as 35 cities including Tangshan and Qinhuangdao.
Source: National Bureau of Statistics of China (NBS)

MPI expect that the real estate policy will continue to focus on the stable and healthy development of the market in 2023, promote city-specific policies, differentiated and precise regulation, and the stability and orderly completion of construction projects. However, MPI believe it would be difficult for real estate investment to rebound again, and hence that the resulting demand for steel products will be limited.

The China Iron and Steel Association (CISA) recently proposed that it will accelerate the implementation of the "Steel Application and Expansion Plan with the Promotion of Steel Structure Housing as the Main Direction", strengthen cross-industry cooperation in upstream and downstream fields, and continuously improve the resilience and stability of the steel industry chain and supply chain.

According to experts, most of the current residential buildings are reinforced concrete, and the share of steel structures is low. However, in the "14th Five-Year Plan" adopted by China in 2021, which develop intelligent construction, promote prefabricated buildings and steel structure housing, with the supply-side structural reform of the steel and construction industries and the development of new urbanisation, consumption of steel structures is expected to reach about 140 mmt by 2025, accounting for more than 15% of the crude steel production in China (21 财经, 2022^[49]).

The steel consumption for the machinery sector, which has the second highest consumption of steel in China, is expected to increase by 0.6% to 170 mmt, as a stable recovery would continue overall in 2022. For 2023, the machinery sector is expected to receive strong

support from both the macroeconomic and market perspectives, and steel demand in the sector is expected to increase by 0.6% to 171 mmt (经济参考报, 2022_[50]).

In India, steel demand is expected to grow by 6.1% in 2022 and 6.7% in 2023 (worldsteel, 2022_[29]). The Ministry of Finance has hiked capital expenditure on infrastructure development by 33% on-year to INR 10 lakh crores (USD 1.22 trillion) in its fiscal-year-through-March-2024 (FY2024) budget, prompting a positive steel industry response. This expenditure will amount to 3.3% of the Indian GDP. The ministry also announced a capital outlay of INR 2.4 lakh crore for Indian Railways, the highest-ever allocation since FY2014. Indian Steel Association says “a significant 33% increase in capital expenditure to INR 10 lakh crore – 3.3 % of the GDP, thrust to fast-track infrastructure development, and the highest ever INR 2.4 lakh crore for railways will translate into robust domestic steel demand, thus spurring private investments and job creations” (Kallanish, 2023_[51]).

In Japan, steel demand increased by 9.1% in 2021 and is expected to stagnate with a meagre 0.2% growth rate in 2022 before increasing by 1.7% in 2023 (worldsteel, 2022_[29]). The Institute of Energy Economics Japan (IEEJ) forecast the demand reduction by automotive and construction sectors and revamping for two Blast Furnaces (BF) led to reducing of crude steel production in FY2022. For FY2023, crude steel production will be rebound by the recovery of automotive production globally, while JFE Steel plans to suspend operations at one of its BF in the Keihin District of Kawasaki city (The Institute of Energy Economics, 2022_[52]).

In Korea, steel demand rebounded by 13.9% in 2021 and is expected to increase by 2.5% in 2022 as investments in construction and manufacturing increase (worldsteel, 2022_[29]). According to ING bank, exports will decline by about 7.0%, given the weakness of global demand and unfavourable price effects. The downcycle for semiconductors will continue until the third quarter of 2023 and China's reopening could add a negative impact on Korea's exports in the first half of 2023, with a surge of COVID patients, the risk of new variants, and supply chain disruptions (ING Bank, 2023_[53]).

In the ASEAN-5 region (Indonesia, Malaysia, Philippines, Thailand and Viet Nam), steel demand increased by 3.5% in 2021 and is expected to increase by 5.8% in 2022 and 6.0% in 2023 (worldsteel, 2022_[29]).

In Indonesia, the Association of Indonesian Automotive Industries (GAIKINDO) is optimistic that car sales in 2023 will remain in a positive trend and national economic growth will be the main factor for the development of car sales this year (Gabungan Industri Kendaraan Bermotor Indonesia, 2023_[54]).

In Malaysia, according to Malaysian Automotive Association (MAA), Malaysia's total new vehicles production reached a record high in 2022, in tandem with higher overall sales (Kallanish, 2023_[55]). The automotive sector's total industry volume is expected to increase by 2.0 % in 2023. It would remain robust in 2023 supported by the reopening of the economy, financial assistance to the low-income group and subsidies on fuels, electricity and selected food items to keep the cost of living in check, a relatively stable job market and healthy household balance sheets of the M40 (middle 40 per cent income) group (Malaysian Investment Development Authority, 2022_[56]).

In the Philippines, the construction sector is expected to increase by 13.4% in 2023. The growth rate is down from the previous prior projection of 16.5% growth. This downward revision is primarily due to rising inflationary pressures and the tightening of monetary policy by the Bangko Sentral ng Pilipinas (BSP). Into 2023, the construction industry's output will be supported by works on ongoing transport infrastructure and housing projects (Galveston Newspapers, 2023_[57]).

In Thailand, it is expected that output of hot rolled coil will increase over the next few years on an uptick in investment and an improving economic outlook. However, as Thailand lacks a domestic source of raw materials, this adds to costs and puts domestic producers at a competitive disadvantage relative to low-cost imports, especially those from China (Bank of Ayudhya, 2023^[58]).

In Viet Nam, the automotive industry is cautious about the outlook for sales in 2023 after the bumper year in 2022, reflecting the withdrawal of sales incentives introduced during the COVID. Interest rates were hiked aggressively across the region last year while slowing global economic growth is also expected to have an impact on exports and commodity prices (Just Auto, 2023^[59]).

6.2.4. Europe and CIS economies

In the EU and the UK, worldsteel forecasts finished steel consumption has rebounded by 18.1% in 2021 but is forecast to decrease by 3.5% in 2022 and 1.3% in 2023 (worldsteel, 2022^[60]). The impact of Russia's aggression against Ukraine is expected to be larger in the EU compared to other regions due to its close trade and energy links with Russia (worldsteel, 2022^[60]). As of February 2, 2023, Eurofer expects a 4.6% fall in EU steel consumption in 2022, and a further 1.6% fall in consumption in 2023 (Holman, 2023^[61]). Energy crises, inflation, supply chain issues, and very high decarbonisation costs are hurting the European steel industry (Holman, 2023^[61]). Eurofer expects steel consumption to somehow recover by 1.6% in 2024, however, warns that any recovery is conditional on the evolution of energy prices, Russia's war of aggression against Ukraine, inflation and global supply chains. Over the medium term, the ambitious targets for decarbonisation set by the EU should boost EU steel demand due to the steel required to build adequate energy infrastructure – particularly for wind and solar energy.

Passenger car registrations in the EU declined by 4.6% in 2022, mainly due to component shortages in the year's first half. Although the market improved from August to December 2022, cumulative volumes stand at 9.3 million units, the region's lowest level since 1993, when 9.2 million units were registered (The European Automobile Manufacturers' Association, 2023^[62]).

In Other Europe, steel consumption grew by 12% in 2021 and is expected to decrease by 4% in 2022 before rebounding by 3% in 2023 (worldsteel, 2022^[29]). Türkiye Steel Producers Association (TCUD) anticipates reaching 40 mmt of production and 35 mmt of consumption in 2023, thanks to both better use of existing capacities and the introduction of new capacities. Steel producers view as positive the recent revision of import duties applied to some flat steel products within the framework of the Import Regime Decision. This aims to substitute flat product imports to a certain extent and increase capacity utilisation rates (Kallanish, 2023^[63]).

Steel demand in the CIS region (which includes Russia) and Ukraine grew by only 1.4% in 2021 and is expected to decrease significantly by 9.2% in 2022 and 6.7% in 2023 (worldsteel, 2022^[29]).

In Ukraine, crude steel production was reduced by 70.7% to 6.26 mmt in 2022 due to Russia's war against Ukraine (Kallanish, 2022^[64]). According to Ukraine's steelmaking association Ukrmetallurgprom, steel output had recovered to 30% of capacity in the summer but then declined again at the end of 2022 after missile strikes hit power infrastructure, forcing many firms to shut down. Ukrmetallurgprom expect Ukraine's steel demand to grow to 15 mmt-20 mmt /year after Russia's war aggression against Ukraine to require a massive amount of steel for rebuilding (S&P Global, 2022^[65]).

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Endnotes

¹ Please refer to <https://www.oecd.org/economic-outlook> and <https://www.oecd-ilibrary.org/sites/4181d61b-en/index.html?itemId=/content/publication/4181d61b-en>

² Please refer to <https://www.oecd.org/economic-outlook> and <https://www.oecd-ilibrary.org/sites/4181d61b-en/index.html?itemId=/content/publication/4181d61b-en>

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https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html

⁴ <https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html>

⁵ The first UK Steel Forum was held in London and organised by a group of six steel industry associations including producers' group UK Steel, the UK-based International Steel Trade Association ISTA and the European steel distributors' association Eurometal. UK's crude steelmakers belong mainly to foreign-based groups: Tata Steel UK (a subsidiary of India's major Tata industrial group); British Steel (acquired by China's Jingye Group in 2020); Liberty Steel, owned by Sanjeev Gupta's GFG Alliance; Spanish Celsa Steel, Finnish Outokumpu; and UK Ministry of Defence-owned Sheffield Forgemasters (Kinch, 2022^[1]).

⁶ Coals used as PCI typically are weak in coking properties and have high calorific value and are imported as non-coking coals. Some more suitable coking coals have been used increasingly as a PCI, as markets looked to replace Russian supply (Forster, 2023^[28]).

⁷ According to the IEA, in June 2022, the high-calorific value thermal coal market was so tight that it traded at a higher price than metallurgical coal, which has an even higher calorific value. The IEA sees this unprecedented phenomenon as a clear indication of the extraordinary situation in coal markets (IEA, 2022^[68]).

⁸ December 2022 was the latest date available at the time of the writing of this report