



Our Steel, Your Future

**Yamato**

Yamato Kogyo Co., Ltd.

**FY2024/3  
FACT BOOK**

Feb, 2024

TSE Prime Market (Securities Code: 5444)

(Note) This document was prepared for the purpose of investment analysis and should be used only for that purpose.

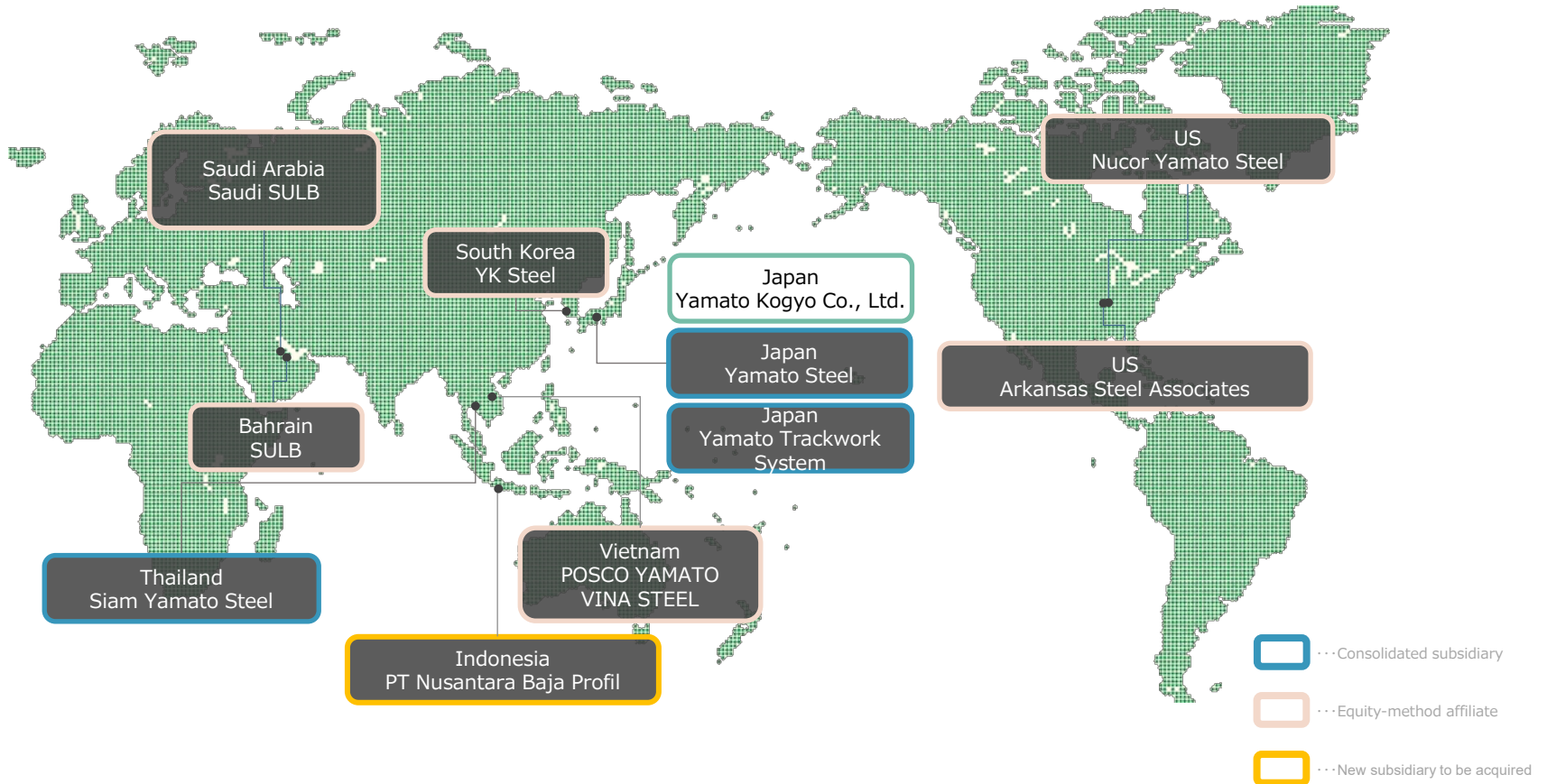
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# Yamato Kogyo










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# Yamato Kogyo Group Overview

- ◆ Manufactures and sells steel products in seven countries in the world, with a focus on steel products for construction
- ◆ The Group's total crude steel sales volume is 5.98 million tons(FY 2023/3), making it one of the top producers of section steel.
- ◆ The majority of ordinary profit is generated outside Japan.
- ◆ The group made a decision to acquire a steel plant in Indonesia at Aug 2023.

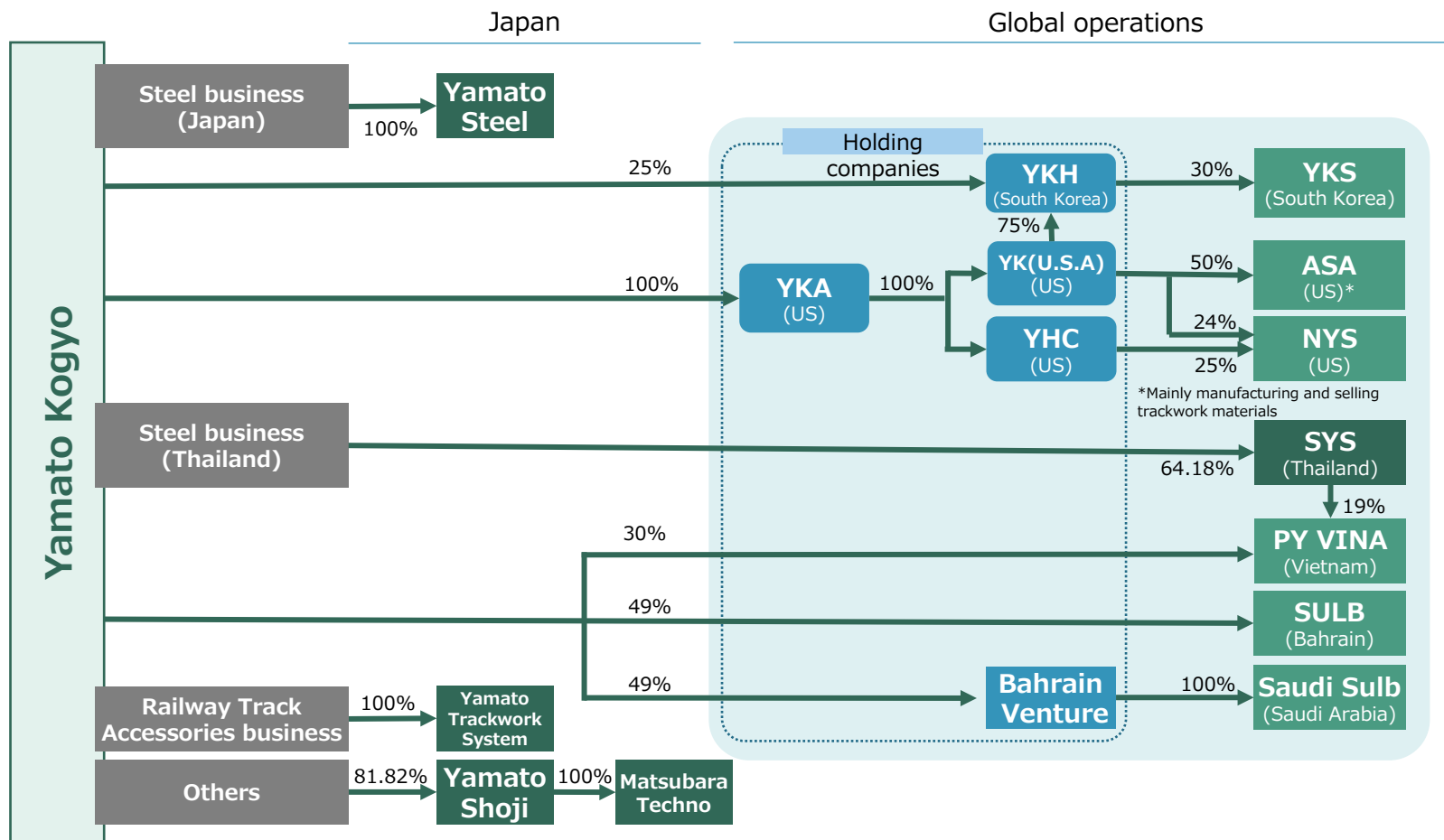


# List of Group Companies

Company name		Country	Location	Investment ratio	JV partner	Main products	Long steel production capacity (Rolling capacity)
<Consolidated subsidiaries>							
Yamato Steel	“Mother Factory” supporting overseas operations	 Japan	Himeji City, Hyogo	100%	-	Section steel	700K tons
Yamato Trackwork System	Integrated manufacturer of trackwork materials	 Japan	Himeji City, Hyogo	100%	-	Trackwork materials	-
Siam Yamato Steel (SYS)	Thailand’s largest section steel manufacturer	 Thailand	Bangkok	64.18%	Siam Cement Mitsui & Co. Sumitomo Corporation	Section steel	1,100K tons
<Equity-method affiliates>							
Nucor Yamato Steel (NYS)	Section steel market leader in North America	 US	Blytheville, Arkansas	49%	Nucor	Section steel	2,300K tons
Arkansas Steel (ASA)	Tie plate leading supplier in North America	 US	Newport, Arkansas	50%	Sumitomo Corporation	Tie plates	-
YK Steel* (YKS)	One of the three major rebar manufacturer groups in South Korea	 South Korea	Saha District, Busan Metropolitan City	30%	Daehan Steel	Steel bars (rebar)	850K tons
SULB	Top-class manufacturer of section steel in the Middle East and Gulf countries	 Bahrain	Manama	49%	Foulath	Section steel	600K tons
Saudi Sulb		 Saudi Arabia	Jubail	49%	Foulath	Section steel	400K tons
POSCO YAMATO VINA STEEL (PY VINA)	Vietnam’s sole H-beam manufacturer	 Vietnam	Phu My, Ba Ria-Vung Tau Province	49%	POSCO	Section steel	500K tons

\* We, Yamato Kogyo decreased the equity ratio in Aug 2021 aiming to strengthen ties between YKS and Daehan Steel. [Change of equity ratio from Yamato:Daehan= 49%:51%, to Yamato:Daehan = 30%: 70%.]

# Corporate Structure



# Yamato Kogyo

## Changes in Major Performance Indicators (1)

(Million yen)	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 Estimate
Net Sales	193,630	187,451	150,978	142,136	176,073	201,299	181,964	136,025	150,029	180,438	163,000
Operating profit	8,506	6,993	11,215	10,739	8,340	9,272	11,333	10,018	13,290	16,813	16,000
Equity in earnings (losses) of affiliates	10,169	13,984	10,299	8,376	7,041	17,069	7,744	8,521	40,348	66,258	-
Ordinary profit	19,691	22,663	23,585	21,519	17,828	31,469	23,125	21,569	57,646	90,494	94,500
Net profit	9,532	13,377	12,994	11,319	12,238	22,793	14,762	4,984	39,917	65,317	66,500
EBITDA*	26,104	28,130	28,285	25,046	21,827	33,194	26,341	25,209	59,429	89,191	-
ROE	4.3%	5.1%	4.5%	3.9%	4.2%	7.5%	4.7%	1.6%	12.2%	16.5%	14.0%
CAPEX*	3,313	4,905	3,636	5,940	8,991	10,702	9,780	6,464	3,606	5,423	8,300
Depreciation and Amortization	7,070	6,749	6,412	5,572	6,087	6,494	7,085	6,568	5,687	6,017	6,500
Operating CF	16,932	22,744	33,386	19,178	13,751	24,393	26,105	27,042	11,457	52,654	-
Investment CF (excl. change in time deposits)	- 2,056	- 5,154	- 8,903	- 7,996	- 18,251	- 10,237	- 20,803	- 11,216	-6,215	-4,466	-
FCF*	14,876	17,590	24,483	11,182	- 4,500	14,156	5,302	15,826	5,241	48,188	-
Financial CF	- 5,540	- 4,517	- 7,582	- 5,426	- 3,903	- 3,949	- 6,694	- 9,937	-15,904	-17,719	-
Net assets	259,682	304,622	308,068	309,198	320,073	333,692	342,606	325,797	375,686	470,211	-
Total assets	310,236	351,952	347,051	348,951	367,083	384,068	383,025	359,788	414,928	515,000	-
Financial assets*	91,863	117,779	131,887	135,098	128,008	135,735	130,558	132,314	135,583	185,226	-

\*EBITDA = Operating profit + Depreciation and Amortization + Goodwill amortization + Equity in earnings (losses) of affiliates

\*CAPEX = Increase in tangible fixed assets and intangible fixed assets

\*FCF = Operating CF + Investment CF (excl. change in time deposits)

\*Financial assets = Cash and deposits + Securities + Investment securities (excl. those for unconsolidated subsidiaries and affiliates) + Long-term deposits

# Yamato Kogyo

## Changes in Major Performance Indicators (2) Quarterly

(Million yen)	FY2021/3				FY2022/3				FY2023/3				FY2024/3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Net Sales	38,246	45,990	24,520	27,269	32,805	34,887	40,014	42,323	46,992	47,780	44,347	41,317	42,527	37,845	41,831	-
Operating profit	3,077	3,755	1,858	1,328	1,616	2,137	4,777	4,759	4,221	5,196	4,155	3,239	4,115	3,738	4,919	-
Equity in earnings (losses) of affiliates	3,571	1,382	2,694	874	6,253	10,089	12,458	11,546	15,154	19,911	17,417	13,774	16,085	17,102	15,687	-
Ordinary profit	7,474	5,487	4,546	4,062	8,303	12,813	18,505	18,023	23,174	28,187	21,425	17,706	25,400	25,221	22,729	-
Net profit	5,138	-3,198	2,934	110	5,532	9,309	12,980	12,093	18,039	19,835	15,265	12,176	18,311	18,031	15,518	-
EBITDA*	8,381	7,049	5,996	3,783	9,273	13,649	18,645	17,860	20,786	26,604	23,100	18,623	21,745	22,439	22,259	-
Ordinary profit margin	6.5%	-4.1%	3.8%	0.2%	7.2%	11.7%	15.9%	14.3%	20.1%	20.0%	13.9%	10.8%	16.5%	15.4%	12.2%	-
Operating CF	11,708	7,181	5,643	2,510	7,596	-3,347	616	6,591	25,213	8,255	7,324	11,861	46,431	13,898	9,770	-
Investment CF (excl. change in time deposits)	-1,973	-4,029	-1,767	-3,447	-3,149	-1,737	338	-1,669	-1,019	-898	-1,720	3,172	-667	-895	-1,315	-
FCF*	9,735	3,152	3,876	-937	4,447	-5,085	955	4,922	24,193	7,356	5,604	15,033	45,763	13,002	8,455	-
Financial CF	-3,647	-1,880	-4,160	-250	-5,963	-1,691	-7,882	-366	-6,980	-721	-9,135	-882	-10,003	-1,064	-9,280	-
Net assets	335,756	332,589	325,270	325,797	340,221	347,364	352,467	375,686	406,858	461,860	484,040	470,211	483,352	533,344	551,033	-
Total assets	375,709	362,149	358,901	359,788	375,656	382,196	390,743	414,928	452,837	507,406	532,045	515,000	531,649	581,830	604,031	-
Financial assets*	134,699	135,563	133,485	132,314	137,719	131,072	125,404	135,583	160,721	183,775	189,340	185,226	225,245	252,502	257,579	-

\*EBITDA = Operating profit + Depreciation and Amortization + Goodwill amortization + Equity in earnings (losses) of affiliates

\*FCF = Operating CF + Investment CF (excl. change in time deposits)

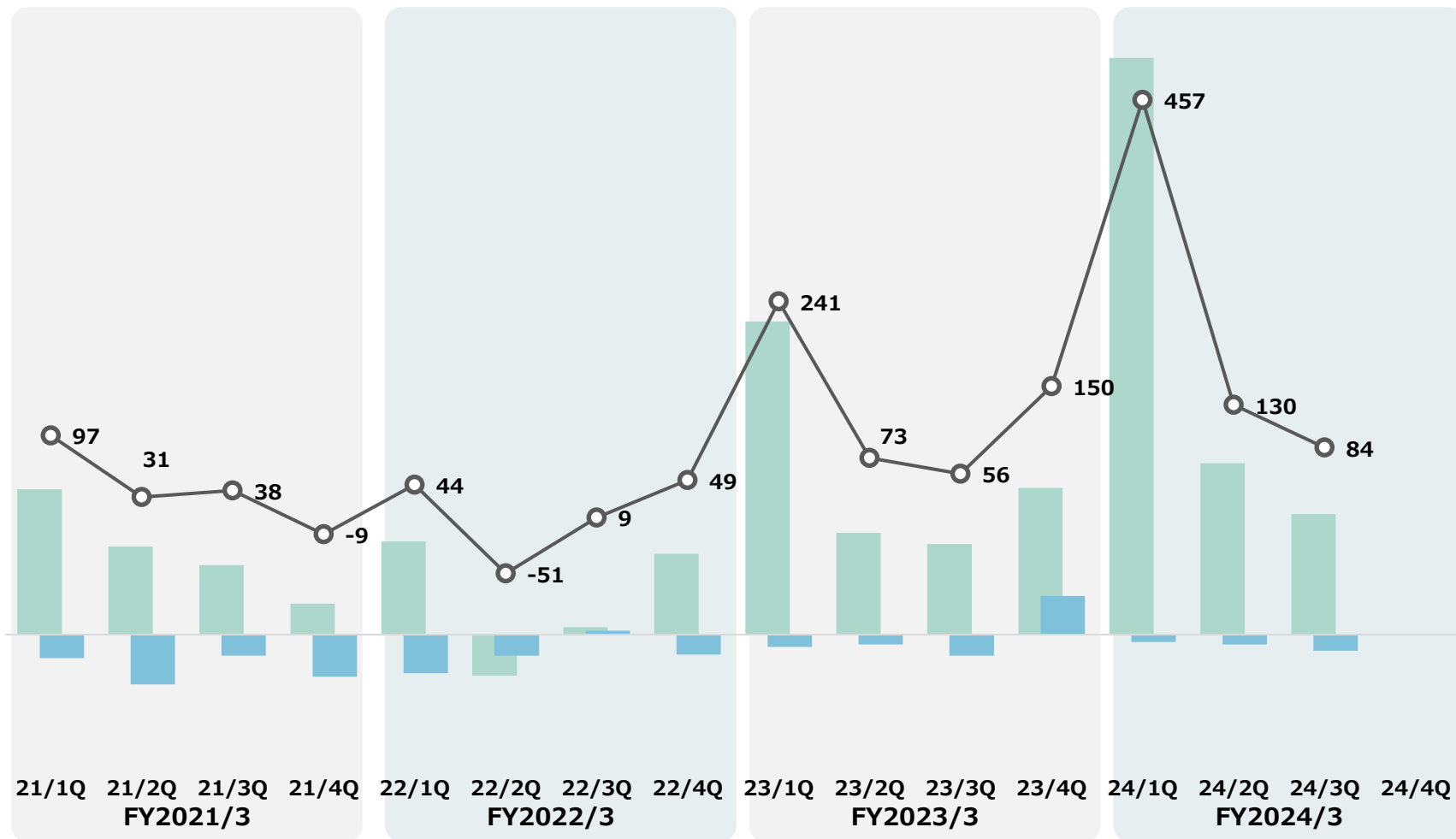
\*Financial assets = Cash and deposits + Securities + Investment securities (excl. those for unconsolidated subsidiaries and affiliates) + Long-term deposits

# The State of Cash Flow, Quarterly

## Changes in FCF\*

(100 million yen)

Operating CF    Investment CF (excl. change in time deposits)    FCF\*





# Yamato Kogyo

## Changes in Performance by Segment (1)

(Million yen)	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
<b>&lt;Japan: Yamato Steel&gt;</b>											
Net Sales	52,263	47,625	40,762	40,614	47,702	54,019	47,552	39,927	57,354	72,873	55,476
Operating profit	3,254	4,848	5,943	4,495	3,409	5,508	6,161	3,226	2,346	8,701	8,565
Depreciation and Amortization	1,361	1,237	1,174	1,190	1,283	1,292	1,381	1,278	1,288	1,338	-
EBITDA*	4,615	6,085	7,117	5,685	4,692	6,800	7,542	4,504	3,634	10,039	-
EBITDA margin	8.8%	12.8%	17.5%	14.0%	9.8%	12.6%	15.9%	11.3%	6.3%	13.8%	-
<b>&lt;Thailand: SYS&gt;</b>											
Net Sales	77,648	77,706	59,790	53,153	65,964	77,265	66,882	52,136	82,452	97,331	58,989
Operating profit	9,303	6,339	5,917	5,863	3,963	4,155	5,268	5,648	12,724	10,735	5,921
Depreciation and Amortization	2,496	2,690	2,869	2,766	3,192	3,594	3,959	3,841	3,860	4,166	-
Goodwill amortization	359	359	359	359	359	359	179	-	-	-	-
EBITDA*	12,158	9,388	9,145	8,988	7,514	8,108	9,406	9,489	16,584	14,902	-
EBITDA margin	15.7%	12.1%	15.3%	16.9%	11.4%	10.5%	14.1%	18.2%	20.1%	15.3%	-
<b>&lt;South Korea: YKS&gt;</b>											
FY2021/3: Results of 8 months from January to August (Changed from a consolidated subsidiary to an equity-method affiliate in September)											
Net Sales	57,102	55,285	44,536	42,044	58,389	61,656	59,703	33,851	-	-	-
Operating profit	-3,549	-3,695	56	1,140	2,728	710	1,735	2,507	-	-	-
Depreciation and Amortization	2,972	2,508	2,083	1,376	1,388	1,135	1,307	890	-	-	-
EBITDA*	-577	-1,187	2,139	2,516	4,116	1,845	3,042	3,397	-	-	-
EBITDA margin	-1.0%	-2.1%	4.8%	6.0%	7.0%	3.0%	5.1%	10.0%	-	-	-

\*EBITDA = Operating profit + Depreciation and Amortization + Goodwill amortization

# Yamato Kogyo

## Changes in Performance by Segment (2)

<Railway Track Accessories business>

(Million yen)	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
Net Sales	6,346	6,573	5,623	6,039	3,717	8,065	7,518	8,048	7,179	6,491	5,498
Operating profit	987	979	714	967	20	815	636	836	532	250	699
Depreciation and Amortization	137	210	192	152	139	386	334	352	344	309	-
EBITDA*	1,124	1,189	906	1,119	159	1,201	970	1,188	877	559	-
EBITDA margin	17.7%	18.1%	16.1%	18.5%	4.3%	14.9%	12.9%	14.8%	12.2%	8.6%	-

\*EBITDA = Operating profit + Depreciation and Amortization + Goodwill amortization

# Yamato Kogyo

## Changes in Performance by Segment (3) Quarterly

(Million yen)	FY2021/3				FY2022/3				FY2023/3				FY2024/3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
<Japan: Yamato Steel>																
Net Sales	9,250	10,236	10,017	10,424	11,566	13,357	15,944	16,485	18,383	17,916	19,238	17,334	18,974	17,533	18,968	-
Operating profit	1,098	880	771	477	158	347	913	927	969	2,236	3,028	2,468	2,991	2,667	2,906	-
<Thailand: SYS>																
Net Sales	14,935	11,179	12,146	13,876	18,770	18,709	21,615	23,357	26,552	27,473	22,100	21,203	21,035	17,580	20,373	-
Operating profit	1,607	1,415	1,412	1,214	1,826	2,083	4,359	4,453	3,885	3,577	1,768	1,503	1,678	1,663	2,579	-
<South Korea: YKS>																
FY2021/3 2Q: Results of 5 months from April to August (Changed from a consolidated subsidiary to an equity-method affiliate in September)																
Net Sales	11,800	21,955	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating profit	682	1,843	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<Railway Track Accessories business>																
Net Sales	1,757	2,222	2,059	2,010	1,593	2,092	1,704	1,788	1,388	1,468	1,870	1,763	1,587	2,042	1,869	-
Operating profit	190	230	251	165	131	260	138	1	13	34	147	55	184	266	248	-

# Yamato Kogyo

## Changes in Sales by Location (1)

	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
<b>&lt;Japan: Yamato Steel&gt;</b>											
Sales volume (10K tons)	66.1	56.6	53.9	57.6	60.7	60.4	53.7	49.7	56.3	57.0	41.5
Metal spread (K yen/ton)	37.5	45.1	47.2	39.8	40.4	48.9	54.4	44.7	43.2	65.2	73.2
<b>&lt;Thailand: SYS&gt;</b>											
Sales volume (10K tons)	101.6	100.3	81.6	92.0	96.7	98.2	85.1	71.9	87.3	79.4	48.5
Metal spread (K B/ton)	12.6	12.0	12.6	11.1	10.5	11.4	12.7	12.5	14.2	16.5	16.8
<b>&lt;South Korea: YKS&gt;</b>											
FY2021/3: Results of 8 months from January to August (Changed from a consolidated subsidiary to an equity-method affiliate in September)											
Sales volume (10K tons)	90.5	86.0	76.0	86.5	97.2	93.0	95.1	60.5	-	-	-
Metal spread (10K W/ton)	27.6	27.1	29.3	25.8	27.8	27.6	31.8	32.3	-	-	-

# Yamato Kogyo

## Changes in Sales by Location (2) Quarterly

	FY2021/3				FY2022/3				FY2023/3				FY2024/3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
<Japan: Yamato Steel>																
Sales volume (10K tons)	11.5	13.1	12.6	12.3	12.9	13.7	15.1	14.7	15.3	14.1	14.6	13.0	14.2	13.0	14.3	-
Metal spread (K yen/ton)	50.5	46.0	42.8	39.3	37.2	40.8	44.9	48.4	50.3	67.5	73.0	71.4	74.1	74.1	71.5	-
<Thailand: SYS>																
Sales volume (10K tons)	20.6	15.5	16.8	18.8	24.1	21.0	20.9	21.4	23.5	21.5	17.3	17.1	17.5	14.3	16.7	-
Metal spread (K B/ton)	12.5	13.3	12.4	11.7	11.1	12.3	17.2	16.9	15.9	16.3	17.6	16.6	16.4	17.1	16.8	-
<South Korea: YKS>																
FY2021/3 2Q: Results of 5 months from April to August (Changed from a consolidated subsidiary to an equity-method affiliate in September)																
Sales volume (10K tons)	21.0	39.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metal spread (10K W/ton)	31.9	32.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# Yamato Kogyo Group

## Changes in Sales by Steel Product Type & Group's total sales volume

Group total	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
Net Sales by steel product type (%)											
H-beam	64.7	63.3	62.0	62.1	60.1	61.8	60.2	64.5	68.4	68.1	67.1
Rebar	19.0	18.2	17.6	18.8	20.7	18.7	20.7	18.7	16.5	13.4	10.9
Sheet pile	3.1	3.9	3.9	4.3	5.4	5.8	4.9	4.2	3.3	3.2	4.7
Angle	3.3	4.3	4.8	3.9	3.7	3.6	4.9	3.7	3.8	5.2	5.6
Others	9.9	10.3	11.7	10.9	10.1	10.1	9.3	8.9	8.0	10.1	11.7

The Group's total Sales volume (incl. semi-finished products, DRI, and inter-group transactions; in 10K tons)	520.0	578.2	504.8	539.1	545.1	602.7	563.1	564.6	652.8	597.9	426.2
The Group's shareholding-ratio-based Sales volume (incl. semi-finished products, DRI, and inter-group transactions; in 10K tons)	351.9	371.5	326.3	351.9	362.8	389.0	365.0	344.0	352.2	319.0	228.3

# Group companies

## Changes in Sales by Steel Product Type (1)

	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
<Yamato Steel: %>											
H-beam	86	80	80	83	82	78	80	80	86	86	80
Channel	3	4	4	3	3	2	2	2	2	1	2
Sheet pile	7	11	12	10	11	14	13	12	8	9	14
<NYS: %>											
H-beam	94	93	92	91	91	92	90	91	93	94	90
Sheet pile	3	4	5	6	6	6	8	6	5	4	8
Channel	2	2	2	2	2	1	1	1	1	1	1
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H-beam	84	80	79	76	72	70	74	75	78	78	76
Sheet pile	4	6	6	7	11	11	5	5	5	5	5
Angle	3	4	4	4	8	8	11	9	5	4	7
<ASA: %>											
Tie plate	100	99	100	100	100	100	99	99	99	99	99
<YKS: %>											
Rebar	100	100	100	100	100	100	100	100	100	100	100
<PY VINA: %>											
H-beam	-	-	-	-	-	-	-	97	99	97	96
Sheet pile	-	-	-	-	-	-	-	2	1	2	1

# Group companies

## Changes in Sales by Steel Product Type (2)

	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
<SULB: %>											
H-beam	70	82	80	84	85	86	86	82	85	80	76
I-beam	25	12	13	10	10	11	11	12	10	17	20
Angle	5	6	7	6	5	3	3	5	5	3	4

	FY2014/3	FY2015/3	FY2016/3	FY2017/3	FY2018/3	FY2019/3	FY2020/3	FY2021/3	FY2022/3	FY2023/3	FY2024/3 3Q
<Saudi Sulb: %>											
H-beam	39	37	39	46	45	44	40	49	35	25	37
Angle	48	53	50	40	36	40	43	33	50	60	51
Channel	7	5	7	10	12	12	9	14	10	11	10



H-beam



Angle



Rebar



Sheet pile



Tie plate



# Steel Business Environment in Japan

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# Japan's Macro Statistics & Crude Steel Production/Consumption Statistics

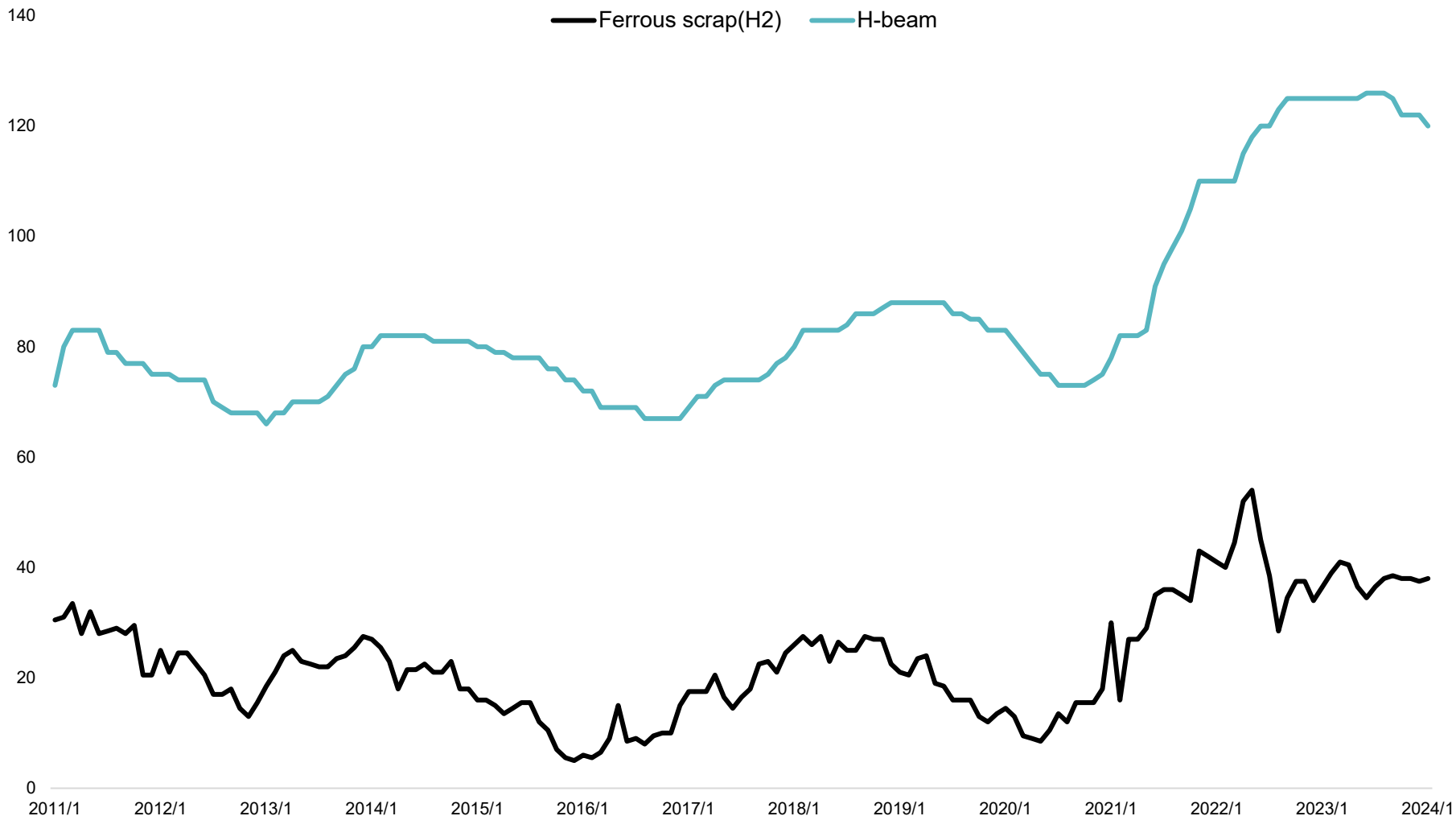
(K tons, K people, K households, M m <sup>2</sup> )	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	1.4%	2.0%	0.3%	1.6%	0.8%	1.7%	0.6%	- 0.4%	- 4.2%	2.2%	1.0%
Population	127,935	127,772	127,586	127,368	127,134	126,854	126,471	126,041	125,543	124,947	-
New housing starts	893	987	880	920	974	946	952	883	812	865	860
Floor area of construction starts	135	148	130	129	132	134	131	127	114	122	118
Crude steel production	107,232	110,595	110,666	105,134	104,775	104,661	104,319	99,284	83,186	96,336	89,227
Electric furnace included above	24,925	24,915	25,679	24,053	23,262	25,318	26,088	24,301	21,140	24,391	-
% of electric furnace	23.2%	22.5%	23.2%	22.9%	22.2%	24.2%	25.0%	24.5%	25.4%	25.3%	-
Hot rolled steel production	94,807	96,965	97,882	93,020	92,636	92,441	92,440	87,714	73,765	84,424	-
Crude steel self-sufficiency rate	113.1%	114.1%	113.1%	113.0%	113.1%	113.2%	112.9%	113.2%	112.8%	114.1%	-
Exports of Semi-finished and Finished Steel Products	41,458	42,502	41,346	40,804	40,505	37,471	35,839	33,127	31,072	33,763	31,739
Imports of Semi-finished and Finished Steel Products	5,733	5,413	6,733	5,918	6,014	6,233	6,040	6,455	5,208	5,460	5,321
Apparent consumption of crude steel (Product-based)	63,950	65,240	67,690	62,950	62,171	64,380	65,410	63,210	52,630	57,410	54,980
Per capita consumption	500	511	531	495	490	508	518	502	420	461	444
Real consumption of steel materials	44,032	48,113	52,117	48,336	46,932	50,298	51,537	49,360	-	-	-
Per capita real consumption	343	375	407	378	367	394	405	389	-	-	-
Steel material self-sufficiency rate	215.3%	201.5%	187.8%	192.4%	197.4%	183.8%	179.4%	177.7%	-	-	-
YSC											
(K tons)	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Crude steel production	598	747	638	614	668	681	685	603	580	639	655
Finished steel product sales	515	661	566	539	577	607	604	538	497	563	570
Estimated domestic production share of H-beams	12.1%	13.4%	11.7%	11.2%	11.1%	12.9%	12.6%	12.0%	12.3%	13.4%	13.6%

(Source) Real GDP growth rate: International Monetary Fund World Economic Outlook, October 2023  
 Population: United Nations, Department of Economic and Social Affairs, Population Division (2022) World Population Prospects 2022 Rev 1  
 Apparent consumption of crude steel, crude steel production, etc.: World Steel Association "STEEL STATISTICAL YEARBOOK 2022"  
 New housing starts, floor area of construction starts: "Building Starts" by Ministry of Land, Infrastructure, Transport and Tourism

# Competitive Environment Data by Country -Japan

## Market Price Trends of H-beam and Ferrous Scrap (H2)

(K yen/ton, monthly initial price)



(Note) According to Sangyo Press Co., Ltd. : Tokyo area, prices if brought in to wholesaler's yard, main unit prices, based on the date of publication in Japan Metal Bulletin.

# Business Environment by Country

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(Source)

Real GDP growth rate: International Monetary Fund World Economic Outlook, October 2023

Population: United Nations, Department of Economic and Social Affairs, Population Division (2022) World Population Prospects 2022 Rev1

Apparent consumption of crude steel, crude steel production, etc.: World Steel Association "STEEL STATISTICAL YEARBOOK 2023"

(Definition)

Crude steel self-sufficiency rate = Crude steel production / Hot rolled steel production

Steel material self-sufficiency rate = Hot rolled steel production / Real consumption of steel materials

# Thailand

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	7.2%	2.7%	1.0%	3.1%	3.4%	4.2%	4.2%	2.2%	- 6.1%	1.5%	2.6%
Population	68,937	69,377	69,780	70,142	70,447	70,767	71,029	71,226	71,389	71,562	-

Crude steel production	3,641	3,613	5,835	5,069	5,400	6,762	6,403	4,246	4,467	5,473	5,316
Electric furnace included above	3,641	3,613	5,835	5,069	5,400	6,762	6,403	4,246	4,467	5,473	-
% of electric furnace	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	-
Hot rolled steel production	6,721	7,070	8,710	3,841	9,542	9,318	9,032	7,799	7,156	7,665	-
Crude steel self-sufficiency rate	54.2%	51.1%	67.0%	132.0%	56.6%	72.6%	70.9%	54.7%	62.4%	71.4%	-
Exports of Semi-finished and Finished Steel Products	1,569	1,504	1,414	1,254	1,460	1,853	1,916	1,654	1,224	-	-
Imports of Semi-finished and Finished Steel Products	15,183	15,866	15,081	14,628	17,605	14,486	15,468	16,745	13,408	15,711	13,431

Apparent consumption of steel materials (Product-based)	16,380	17,829	19,248	18,149	20,777	19,038	19,200	18,641	16,452	18,767	16,393
Per capita consumption	237	256	275	258	294	269	270	261	230	262	229
Real consumption of steel materials	15,456	16,644	17,431	16,500	18,664	16,947	17,117	17,102	-	-	-
Per capita real consumption	228	244	255	240	271	245	247	246	-	-	-
Steel material self-sufficiency rate	43.5%	42.5%	50.0%	23.3%	51.1%	55.0%	52.9%	45.6%	-	-	-

## SYS

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Crude steel production	1,031	1,088	1,060	821	976	1,023	1,040	918	754	964	802
Finished steel product sales	969	1,017	1,003	816	921	968	983	851	720	860	794
Estimated domestic share	100.0%	100.0%	98.7%	91.0%	91.0%	99.8%	99.2%	95.0%	88.0%	91.0%	89.0%

# South Korea

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	2.4%	3.2%	3.2%	2.8%	2.9%	3.2%	2.9%	2.2%	- 0.7%	4.3%	2.6%
Population	49,400	49,868	50,328	50,788	51,201	51,419	51,604	51,750	51,858	51,831	-
Crude steel production	69,073	66,061	71,543	69,670	68,576	71,030	72,464	71,412	67,079	70,418	65,846
Electric furnace included above	25,955	25,768	24,197	21,171	21,055	23,354	24,183	22,696	20,820	22,391	-
% of electric furnace	37.6%	39.0%	33.8%	30.4%	30.7%	32.9%	33.4%	31.8%	31.0%	31.8%	-
Hot rolled steel production	66,317	64,541	68,905	67,756	67,131	69,557	69,785	68,273	65,752	69,133	-
Crude steel self-sufficiency rate	104.2%	102.4%	103.8%	102.8%	102.2%	102.1%	103.8%	104.6%	102.0%	101.9%	-
Exports of Semi-finished and Finished Steel Products	30,227	28,927	31,906	31,173	30,586	31,355	30,056	29,986	28,581	26,781	25,462
Imports of Semi-finished and Finished Steel Products	20,402	19,033	22,408	21,674	23,285	19,323	14,928	16,352	11,978	14,067	13,666
Apparent consumption of steel materials (Product-based)	54,069	51,762	55,521	55,800	57,076	56,313	53,710	53,226	49,195	56,041	51,297
Per capita consumption	1,089	1,033	1,098	1,094	1,112	1,093	1,039	1,027	949	1,081	990
Real consumption of steel materials	35,133	35,587	39,315	39,708	41,616	41,713	41,302	40,478	-	-	-
Per capita real consumption	702	707	777	781	816	816	807	790	-	-	-
Steel material self-sufficiency rate	188.8%	181.4%	175.3%	170.6%	161.3%	166.8%	169.0%	168.7%	-	-	-

## YKS

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Crude steel production	913	853	797	665	692	838	819	888	868	902	771
Finished steel product sales	859	906	860	760	866	973	930	952	901	886	686

# Vietnam

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	5.5%	5.6%	6.4%	7.0%	6.7%	6.9%	7.2%	7.2%	2.9%	2.6%	8.0%
Population	88,821	89,781	90,754	91,717	92,666	93,587	94,479	95,350	96,204	97,094	-
Crude steel production	5,298	5,474	5,847	5,647	7,811	11,473	15,471	17,469	19,900	23,019	20,004
Electric furnace included above	5,298	4,653	4,385	3,381	4,687	6,310	6,000	4,925	4,800	3,910	-
% of electric furnace	100.0%	85.0%	75.0%	59.9%	60.0%	55.0%	38.8%	28.2%	24.1%	16.9%	-
Hot rolled steel production	5,049	5,123	5,657	7,199	8,657	11,302	14,532	15,401	16,419	19,508	-
Crude steel self-sufficiency rate	104.9%	106.9%	103.4%	78.4%	90.2%	101.5%	106.5%	113.4%	121.2%	118.0%	-
Exports of Semi-finished and Finished Steel Products	1,280	1,383	1,523	1,512	2,537	4,034	5,368	5,213	7,870	11,315	7,420
Imports of Semi-finished and Finished Steel Products	7,779	9,951	12,359	16,343	19,499	16,222	14,155	15,432	13,928	12,960	11,495
Apparent consumption of steel materials (Product-based)	109,560	11,769	14,441	18,254	22,328	21,617	22,312	24,313	23,337	22,054	22,232
Per capita consumption	123	130	158	198	240	230	235	254	241	226	226
Real consumption of steel materials	11,299	12,320	15,211	19,407	23,339	22,692	23,029	25,245	-	-	-
Per capita real consumption	126	136	166	209	249	240	241	262	-	-	-
Steel material self-sufficiency rate	44.7%	41.6%	37.2%	37.1%	37.1%	49.8%	63.1%	61.0%	-	-	-

PY VINA FY2021/3: Included from 2Q.

(K tons)	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Crude steel production	-	-	-	-	-	-	-	-	445	576	396
Finished steel product sales	-	-	-	-	-	-	-	-	356	432	399
Estimated market share*	-	-	-	-	-	-	-	-	*77.0%	82.0%	80.0%

\*Only for PY VINA production size

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	2.3%	1.8%	2.3%	2.7%	1.7%	2.3%	2.9%	2.3%	- 2.8%	5.9%	2.1%
Population	315,272	318,031	320,719	323,349	325,867	328,553	331,029	333,251	335,388	336,496	-
Crude steel production	88,695	86,878	88,174	78,845	78,475	81,612	86,607	87,761	72,732	85,791	80,535
Electric furnace included above	52,414	52,641	55,174	49,450	52,587	55,824	58,903	61,171	51,380	59,325	-
% of electric furnace	59.1%	60.6%	62.6%	62.7%	67.0%	68.4%	68.0%	69.7%	70.6%	69.2%	-
Hot rolled steel production	87,043	86,567	89,130	78,514	78,502	82,451	86,436	87,251	73,482	85,928	-
Crude steel self-sufficiency rate	101.9%	100.4%	98.9%	100.4%	100.0%	99.0%	100.2%	100.6%	99.0%	99.8%	-
Exports of Semi-finished and Finished Steel Products	13,560	12,508	11,961	10,000	9,247	10,211	8,623	7,271	6,592	8,246	8,321
Imports of Semi-finished and Finished Steel Products	30,886	29,812	41,369	36,485	30,913	35,366	31,726	27,116	20,140	29,692	28,913
Apparent consumption of steel materials (Product-based)	96,200	95,700	106,957	96,131	91,861	97,722	99,775	97,593	80,014	97,049	94,525
Per capita consumption	304	300	332	296	281	296	300	292	238	288	279
Real consumption of steel materials	112,483	113,473	123,691	118,889	115,389	122,150	127,067	125,749	-	-	-
Per capita real consumption	358	359	388	371	357	376	388	382	-	-	-
Steel material self-sufficiency rate	77.4%	76.3%	72.1%	66.0%	68.0%	67.5%	68.0%	69.4%	-	-	-



# Saudi Arabia

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	5.4%	2.7%	3.7%	4.1%	1.7%	- 0.7%	2.5%	0.3%	- 4.3%	3.9%	8.7%
Population	30,487	31,156	31,809	32,442	33,058	33,775	34,612	35,425	36,230	35,764	-
Crude steel production	5,203	5,471	6,291	5,229	5,461	4,831	8,187	8,191	7,775	8,735	9,860
Electric furnace included above	5,203	5,471	6,291	5,229	5,461	4,831	5,240	8,191	7,775	8,735	-
% of electric furnace	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	64.0%	100.0%	100.0%	100.0%	-
Exports of Semi-finished and Finished Steel Products	285	247	123	1,129	1,141	1,138	1,419	2,497	1,304	1,522	1,083
Imports of Semi-finished and Finished Steel Products	8,092	6,664	6,641	6,491	7,355	4,610	3,739	7,945	7,039	3,879	4,929
Apparent consumption of steel materials (Product-based)	12,540	13,300	14,100	13,500	12,200	11,834	10,263	9,992	10,920	10,790	12,026
Per capita consumption	407	422	439	412	365	346	293	279	303	300	330
Real consumption of steel materials	16,179	18,400	19,041	18,911	15,842	14,667	12,685	13,722	-	-	-
Per capita real consumption	555	612	616	596	488	443	376	400	-	-	-
Steel material self-sufficiency rate	28.4%	26.6%	26.3%	29.1%	31.6%	30.7%	57.9%	55.0%	-	-	-

(K tons, K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	4.5%	5.1%	4.4%	5.1%	3.0%	2.4%	1.2%	3.4%	- 5.0%	4.4%	7.9%
Population	8,621	8,709	8,795	8,877	8,957	9,032	9,105	9,176	9,248	9,327	-
Crude steel production	2,408	2,878	2,390	3,006	3,149	3,309	3,247	3,327	2,722	2,997	3,221
Electric furnace included above	2,408	2,878	2,390	3,006	3,149	3,309	3,247	3,327	2,722	2,997	-
% of electric furnace	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	-
Hot rolled steel production	2,156	2,549	2,765	2,959	3,126	3,246	3,167	3,029	2,275	2,486	-
Crude steel self-sufficiency rate	111.7%	112.9%	86.4%	101.6%	100.7%	101.9%	102.5%	109.8%	119.6%	120.6%	-
Exports of Semi-finished and Finished Steel Products	248	265	860	634	3,404	2,951	2,584	3,802	2,960	3,488	2,200
Imports of Semi-finished and Finished Steel Products	6,242	5,590	6,647	6,608	7,422	6,501	5,747	5,441	5,027	4,887	4,580
Apparent consumption of steel materials (Product-based)	7,044	6,820	7,149	7,136	7,833	7,931	8,112	7,591	7,119	6,456	7,591
Per capita consumption	813	779	809	800	871	875	888	886	743	689	804
Real consumption of steel materials	8,562	8,070	9,158	8,935	9,340	9,735	9,305	8,800	-	-	-
Per capita real consumption	937	877	994	965	998	1,026	966	901	-	-	-
Steel material self-sufficiency rate	25.2%	31.6%	30.2%	33.1%	33.5%	33.3%	34.0%	34.4%	-	-	-

# World Total

(M tons, M people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real GDP growth rate	3.6%	3.4%	3.5%	3.4%	3.3%	3.7%	3.6%	2.9%	- 2.8%	6.3%	3.5%
Population	7,117	7,206	7,295	7,383	7,470	7,557	7,643	7,725	7,805	7,877	-
Crude steel production	1,563	1,653	1,675	1,624	1,632	1,736	1,828	1,877	1,881	1,962	1,886
Electric furnace included above	453	424	440	410	422	484	529	522	494	562	-
% of electric furnace	28.9%	25.6%	26.2%	25.2%	25.8%	27.8%	28.9%	27.8%	26.2%	28.7%	-
Hot rolled steel production	1,508	1,617	1,653	1,601	1,582	1,607	1,688	1,739	1,760	1,867	-
Exports of Semi-finished and Finished Steel Products	416	412	457	467	476	462	457	438	405	460	402
Imports of Semi-finished and Finished Steel Products	401	104	442	452	463	447	444	440	398	445	399
Apparent consumption of steel materials (Product-based)	1,448	1,547	1,555	1,511	1,525	1,637	1,714	1,779	1,790	1,841	1,788
Per capita consumption	0.201	0.214	0.212	0.204	0.203	0.216	0.223	0.229	0.228	0.233	0.224
Real consumption of steel materials	1,360	1,467	1,463	1,410	1,424	1,537	1,610	1,659	-	-	-
Per capita real consumption	0.233	0.249	0.246	0.235	0.235	0.251	0.261	0.266	-	-	-

# Reference

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# Changes in Apparent Consumption of Steel Products

(K tons)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World total	1,547,729	1,555,369	1,510,712	1,525,994	1,637,782	1,713,840	1,779,256	1,794,712	1,844,916	1,788,059
Japan	65,240	67,690	62,950	62,171	64,380	65,410	63,210	52,630	57,410	54,980
South Korea	51,762	55,521	55,800	57,076	56,313	53,710	53,226	49,195	56,041	51,297
US	95,700	106,957	96,131	91,861	97,722	99,775	97,651	80,043	97,078	94,525
Thailand	17,829	19,248	18,149	20,777	19,038	19,200	18,641	16,452	18,767	16,393
Vietnam	11,769	14,441	18,254	22,328	21,637	22,312	24,313	23,338	22,054	22,232
Saudi Arabia	13,300	14,100	13,500	12,200	11,834	10,263	10,155	11,782	10,563	12,026
UAE	6,820	7,149	7,136	7,833	7,931	8,112	8,502	6,905	6,456	7,591
China	741,446	710,768	672,340	681,020	773,840	836,050	911,890	1,008,220	954,400	925,650
India	73,652	76,050	80,198	83,643	88,680	96,737	102,622	89,333	106,226	116,157
Taiwan	18,571	19,558	17,527	18,277	17,653	17,787	17,615	18,792	21,142	17,398
Indonesia	12,692	12,898	11,375	12,673	13,593	15,083	15,944	15,092	15,460	16,600
Malaysia	10,049	10,079	10,001	10,256	9,443	9,776	9,207	6,813	7,031	7,515
Philippines	6,705	7,325	8,760	9,677	9,819	10,726	10,059	8,662	9,511	9,844

(Note) Prepared by us based on World Steel Association, "STEEL STATISTICAL YEARBOOK 2023"

# Changes in Crude Steel Production

(K tons)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World total	1,654,044	1,675,888	1,625,499	1,634,325	1,737,985	1,829,635	1,878,458	1,883,691	1,962,389	1,887,809
Electric furnace included above	423,919	439,354	410,230	423,112	483,915	529,093	521,050	490,075	547,087	526,164
%	25.63%	26.22%	25.24%	25.89%	27.84%	28.92%	27.74%	26.02%	27.88%	27.87%
Japan	110,595	110,666	105,134	104,775	104,661	104,319	99,284	83,186	96,336	89,227
Electric furnace included above	24,915	25,679	24,053	23,262	25,318	26,088	24,301	21,140	24,391	23,835
%	22.53%	23.20%	22.88%	22.20%	24.19%	25.01%	24.48%	25.41%	25.32%	26.71%
South Korea	66,061	71,543	69,670	68,576	71,030	72,464	71,412	67,079	70,418	65,846
Electric furnace included above	25,768	24,197	21,171	21,055	23,354	24,183	22,696	20,820	22,391	20,741
%	39.01%	33.82%	30.39%	30.70%	32.88%	33.37%	31.78%	31.04%	31.80%	31.50%
US	86,878	88,174	78,845	78,475	81,612	86,607	87,761	72,732	85,791	80,535
Electric furnace included above	52,641	55,174	49,450	52,587	55,824	58,903	61,171	51,380	59,325	55,555
%	60.59%	62.57%	62.72%	67.01%	68.40%	68.01%	69.70%	70.64%	69.15%	68.98%
Thailand	3,613	5,835	5,069	5,400	6,762	6,403	4,246	4,467	5,473	5,316
Electric furnace included above	3,613	5,835	5,069	5,400	6,762	6,403	4,246	4,467	5,473	5,316
%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Vietnam	5,474	5,847	5,647	7,811	11,473	15,471	17,469	19,900	23,019	20,004
Electric furnace included above	4,653	4,385	3,381	4,687	6,310	6,000	4,821	4,800	3,910	3,180
%	85.00%	75.00%	59.87%	60.01%	55.00%	38.78%	27.60%	24.12%	16.99%	15.90%
Saudi Arabia	5,471	6,291	5,229	5,461	4,831	8,187	8,191	7,775	8,735	9,860
Electric furnace included above	5,471	6,291	5,229	5,461	4,831	8,187	8,191	7,775	8,735	9,860
%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
China	822,000	822,306	803,825	807,609	870,741	929,038	995,419	1,064,767	1,035,243	1,017,959
Electric furnace included above	48,444	54,337	47,457	50,928	80,741	99,038	102,528	97,958	98,340	96,660
%	5.89%	6.61%	5.90%	6.31%	9.27%	10.66%	10.30%	9.20%	9.50%	9.50%

(Note) Prepared by us based on World Steel Association, "STEEL STATISTICAL YEARBOOK 2023"

# Changes in Global Real GDP Growth Rate

Released by IMF in October 2023

(%)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 Estimated
World total	3.6	3.4	3.5	3.4	3.3	3.7	3.6	2.9	- 2.8	6.3	3.5	3.0
Japan	1.4	2.0	0.3	1.6	0.8	1.7	0.6	- 0.4	- 4.2	2.2	1.0	2.0
South Korea	2.4	3.2	3.2	2.8	2.9	3.2	2.9	2.2	- 0.7	4.3	2.6	1.4
US	2.3	1.8	2.3	2.7	1.7	2.3	2.9	2.3	- 2.8	5.9	2.1	2.1
Thailand	7.2	2.7	1.0	3.1	3.4	4.2	4.2	2.2	- 6.1	1.5	2.6	2.7
Vietnam	5.5	5.6	6.4	7.0	6.7	6.9	7.2	7.2	2.9	2.6	8.0	4.7
Saudi Arabia	5.4	2.7	3.7	4.1	1.7	- 0.7	2.5	0.3	- 4.3	3.9	8.7	0.8
UAE	4.5	5.1	4.4	5.1	3.0	2.4	1.2	3.4	- 5.0	4.4	7.9	3.4
Bahrain	3.7	5.4	4.4	2.5	3.6	4.3	2.1	2.2	- 4.6	2.6	4.9	2.7
China	7.8	7.8	7.4	7.0	6.9	6.9	6.8	6.0	2.2	8.4	3.0	5.0
India	5.5	6.4	7.4	8.0	8.3	6.8	6.5	3.7	- 5.8	9.1	7.2	6.3
Taiwan	2.2	2.5	4.7	1.5	2.2	3.3	2.8	3.1	3.4	6.5	2.4	0.8
Indonesia	6.0	5.6	5.0	4.9	5.0	5.1	5.2	5.0	- 2.1	3.7	5.3	5.0
Malaysia	5.5	4.7	6.0	5.0	4.4	5.8	4.8	4.4	- 5.5	3.3	8.7	4.0
Philippines	6.9	6.8	6.3	6.3	7.1	6.9	6.3	6.1	- 9.5	5.7	7.6	5.3

(Source) International Monetary Fund World Economic Outlook, October 2023

# World Population Trends

## UN, World Population Prospects

(K people)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
World total	7,116,996	7,206,400	7,294,787	7,383,240	7,469,955	7,556,993	7,642,651	7,724,928	7,804,974	7,876,932
Japan	127,935	127,772	127,586	127,368	127,134	126,854	126,471	126,041	125,543	124,947
South Korea	49,400	49,868	50,328	50,788	51,201	51,419	51,604	51,750	51,858	51,831
US	315,272	318,031	320,719	323,349	325,867	328,553	331,029	333,251	335,388	336,496
Thailand	68,937	69,377	69,780	70,142	70,447	70,767	71,029	71,226	71,389	71,562
Vietnam	88,821	89,781	90,754	91,717	92,666	93,587	94,479	95,350	96,204	97,094
Saudi Arabia	30,487	31,156	31,809	32,442	33,058	33,775	34,612	35,425	36,230	35,764
Bahrain	1,211	1,239	1,284	1,338	1,386	1,433	1,480	1,494	1,494	1,461
China	1,361,506	1,371,616	1,380,585	1,389,795	1,397,636	1,406,143	1,414,409	1,419,730	1,423,998	1,425,862
India	1,266,101	1,282,874	1,299,390	1,315,103	1,330,630	1,346,642	1,361,749	1,376,258	1,389,966	1,402,808
Taiwan	23,185	23,283	23,377	23,468	23,557	23,632	23,698	23,755	23,801	23,842
Indonesia	248,666	251,780	254,772	257,688	260,496	263,204	265,794	268,340	270,826	272,890
Malaysia	29,421	29,899	30,371	30,842	31,295	31,757	32,194	32,604	33,004	33,396
Philippines	97,189	98,875	100,525	102,126	103,937	105,813	107,664	109,474	111,288	113,094

(Source) United Nations, Department of Economic and Social Affairs, Population Division (2022)  
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