

44th Census of World Casting Production

The global casting market experienced a marked contraction in 2009, with overall shipments decreasing 14% from 2008.

A MODERN CASTING Staff Report



Worldwide casting shipments in 2009 fell to 80,343,048 tons, down 14% from 2008, according to this year's *MODERN CASTING* Census of World Casting Production.

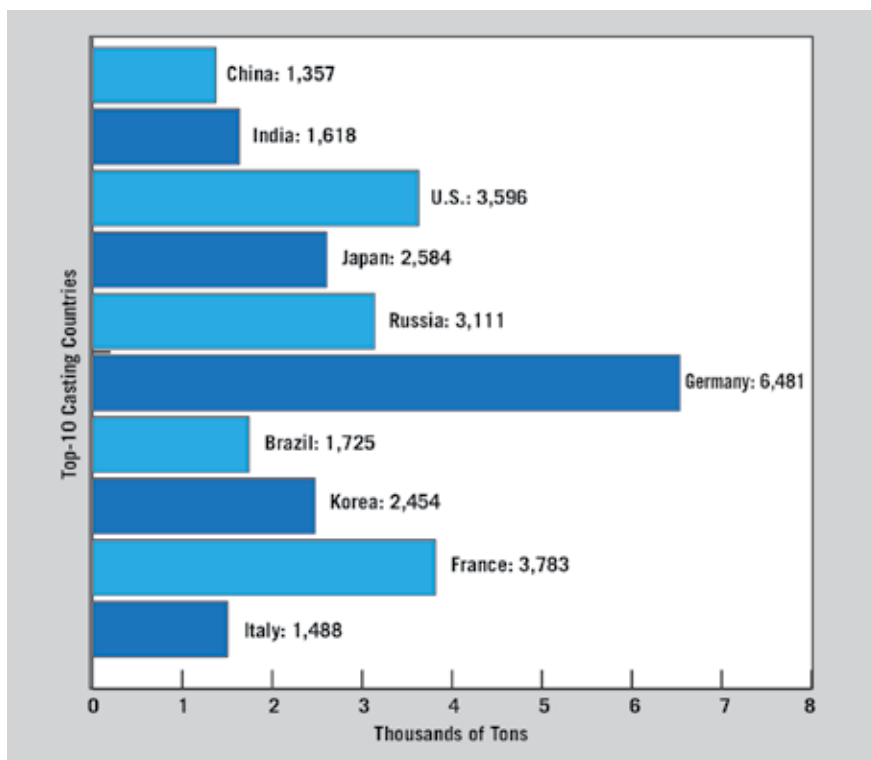
Of the 34 countries participating in the production survey this year, only five reported growth—China, India, Korea, Portugal and South Africa. The average percentage decrease in shipments for the remaining countries with declining production was 30%.

As a result, production per plant decreased, as well. Germany still has the most production per plant, but it fell from 9,639 tons per metalcasting company in 2008 to 6,481 tons in 2009. China's production improved from 1,117 tons to 1,357 tons per plant as shipment volume increased and the number of casting facilities decreased.

Seven of the top-10 casting-producing nations shifted up or down in the rankings in 2009, reflecting the fluctuating markets during the recession. Brazil, which had been one of two top-10 countries to show growth in 2008, experienced a 31.5% decrease in shipments from 2008 to 2009, the biggest drop of any top-10 nation during that time period. India was the fastest growing top-10 nation, increasing its casting tonnage by 9%. The top 10 nations produced a total of 70,476,338 tons, 88% of the global total.

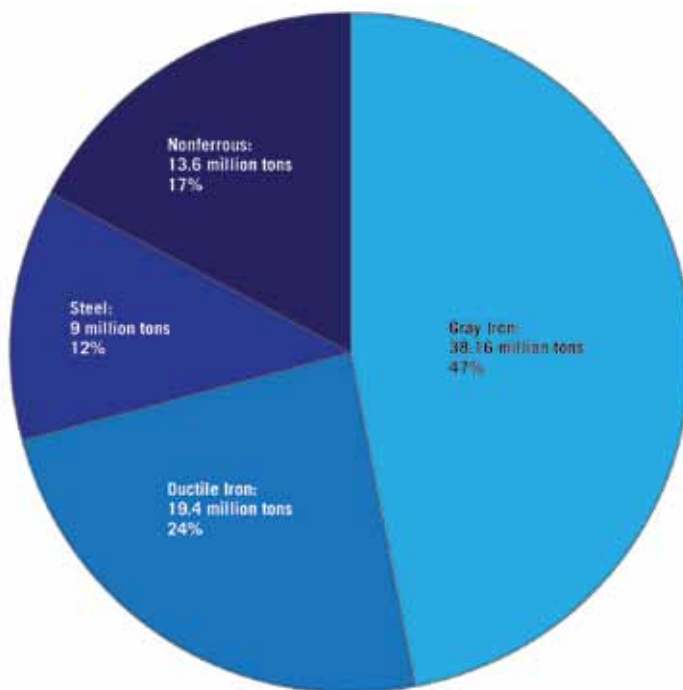
The year 2009 marked the fourth year in a row the U.S. has reported a reduction of casting volume. It was the first year it has been surpassed in production (by 35,000 tons) by India, which became the second-largest casting producer by volume.

The data reported in the 44th Census of World Casting Production is supplied by each nation's metalcasting association or similar representative. Countries that did not participate this year were Denmark, The Netherlands and Thailand. These countries remain listed according to the last year they participated. New to the list are Bosnia and Herzegovina, Mongolia and Serbia. **MC**



Production Per Plant

The average production per metalcasting plant for the top-10 nations decreased across the board, likely due to plants operating at lower capacity during the 2009 recession. China and Korea, which showed increases in casting shipments from 2008 to 2009, improved their productivity.



World Casting Production by Metal

While gray iron continues to make up the largest piece of the global production pie, its slice is growing smaller. Since 1999, gray iron production has increased 9.3%. Compare that with a 39.6% increase in ductile iron production, 50% growth in steel production, and a 41.1% increase in nonferrous production.



Want to compare 2009's production to previous years? Visit www.moderncasting.com for past census results.

2009 World Casting Census

Country	Gray Iron	Ductile	Malleable	Steel	Cu-Base	Aluminum	Mg	Zinc	Other Non-Fe	TOTAL
Austria	29,200	89,700 ^A	na	19,800	2,203	87,698	4,676	10,191	na	243,468
Belgium	49,100 ^B	500 ^A	na	28,100	na	1,582 ^C	na	530	na	78,812
Bosnia/Herzegovina	8,567	1,100	na	3,826	na	3,176 ^D	na	na	na	16,669
Brazil	1,365,030	525,971	26,850	166,382	12,075	194,569	3,233	2,806	na	2,296,916
Canada	458,850 ^E	na	na	111,720 ^E	17,656 ^E	146,879	na	na	na	735,105
China	17,000,000	8,700,000	600,000	4,800,000	600,000	3,350,000 ^C	na	na	250,000 ^F	35,300,000
Croatia	22,107	17,375	na	1,313	459	11,652	na	230	661 ^G	53,797
Czech Republic	138,838	40,678	1,881	52,392	888	34,772 ^C	na	1,368	144	270,970
Denmark ^E	32,367	48,020	na	na	1,433	na	na	6	5,778 ^D	87,604
Finland	28,041	31,363 ^A	na	9,413	3,052	3,612	na	260	na	75,741
France	562,000	869,000 ^A	na	59,500	18,818	205,924	na	19,513	1,949	1,736,704
Germany	1,806,480	1,191,786	31,273	182,435	76,720	540,444	19,859	51,193	1,475	3,901,665
Hungary	25,834	15,221	11	5,695	1,442	80,10	na	3,738	262	132,304
India	5,050,000	800,000	60,200	880,000	na	653,000 ^D	na	na	na	7,443,200
Italy	566,068	372,449 ^A	na	65,283	14,386	549,400	6,700	49,000	45,516	1,668,802
Japan	1,653,901	1,364,644	37,235	198,248	75,284	1,025,507	6,280	20,563	4,336	4,385,998
Korea	1,020,600	607,600	38,500	153,500	24,500	279,100	na	na	11,200 ^{CF}	2,135,000
Mexico	693,975	53,010	na	70,815	126,530	539,990	98	906	na	1,485,324
Mongolia	2,000	120	100	12,000	60	180	na	na	240	14,700
Netherlands ^H	78,241	6,209	438	na	na	na	na	na	na	84,888
Norway	15,200	48,400 ^A	na	2,700	2,177	4,058	na	na	na	72,535
Poland	570,000 ^I	na	na	na	na	200,000 ^D	na	na	na	770,000
Portugal	30,995	60,165 ^A	na	8,803	10,800	15,800	na	480	na	127,043
Romania	29,485	1,471	712	22,955	1,814	31,163	1,750	535	9 ^G	89,894
Russia	1,740,000	1,200,000	60,000	700,000	90,000	340,000	35,000	15,000	20,000	4,200,000
Serbia	43,150	2,320	1,460	25,040	995	1,420	na	500	14,260	89,145
Slovenia	74,000	14,900 ^A	na	27,900	2,976	18,144	495	2,079	na	140,494
South Africa	95,565	68,832	114,276	147,235	17,220	47,364	na	2,730	na	493,222
Spain	274,000	461,300 ^A	na	65,200	6,791	86,212	na	8,084	491	902,078
Sweden	113,300	27,700	na	15,300	8,400	24,600	1,300	4,000	na	194,600
Switzerland	17,600	31,000 ^A	na	1,806	1,807	14,613	na	1,308	na	68,134
Taiwan	343,854	175,902	na	50,849	33,166	230,059	5,159	74,629	1,065	914,683
Thailand ^J	70,000	30,000	30,000	28,600	28,600	100,000	na	16,900	na	304,100
Turkey	456,000	352,000	2,000	98,000	12,500	96,500	na	13,500	na	1,030,500
Ukraine	640,000	40,000	na	275,000	na	45,000 ^D	na	na	na	1,000,000
United Kingdom	102,000	137,000 ^A	na	56,000	8,000	78,000	2,000	6,200	700	389,900
United States	2,409,483	2,553,725	35,380	686,739	178,715	1,191,1345	66,224	166,922	119,748	7,408,069
TOTALS	37,615,831	19,939,470	1,040,316	9,032,549	1,379,467	10,237,431	152,774	473,170	472,056	80,343,064

Note: All data given in metric tons. A) includes malleable iron B) includes ductile iron C) includes mg D) all nonferrous E) 2008 data
F) includes zinc G) lead castings H) 2004 data I) all ferrous J) 2006 data

New to the List

A few new countries have been added to this year's census of casting producers and another has been updated after seven years of incomplete data.

Ukraine: Before this year, the most recent production data from Ukraine dated to 2002, when the country was producing 974,170 tons of castings a year. Not much has changed. The Foundry Association of Ukraine reports the country produced about 1 million tons of castings in 2009. Ferrous casting makes up the lion's share of production (95.5%), but nonferrous casting has improved 42.9% since 2002.

Serbia: For many years, this country has been in turmoil, with much of the casting activity shut down or severely hampered. From 1990 through 1999, its economy was cut in half. Since then, Serbia has been making up ground. In 2008, the Serbian Foundrymen Society was formed. The country's casting industry is 81% ferrous and 19% nonferrous by tonnage produced. Production per plant is 2,345 tons.

Mongolia: More than two-thirds of all of Mongolia's exports go to China, its neighbor to the south. Its largest casting market is steel, which makes up 81.6% of total production.

Economic Woes

With the exception of a few nations, the global casting industry reported a dip in production in 2009. But some countries fared worse than others.

Russia: From 2007 to 2009, Russia's production decreased by 46.2%, from 7.8 million tons to 4.2 million tons. The third largest casting producing nation in 2007, Russia has since fallen behind India and Japan. It saw a reduction of 300 metalcasting facilities in 2009.

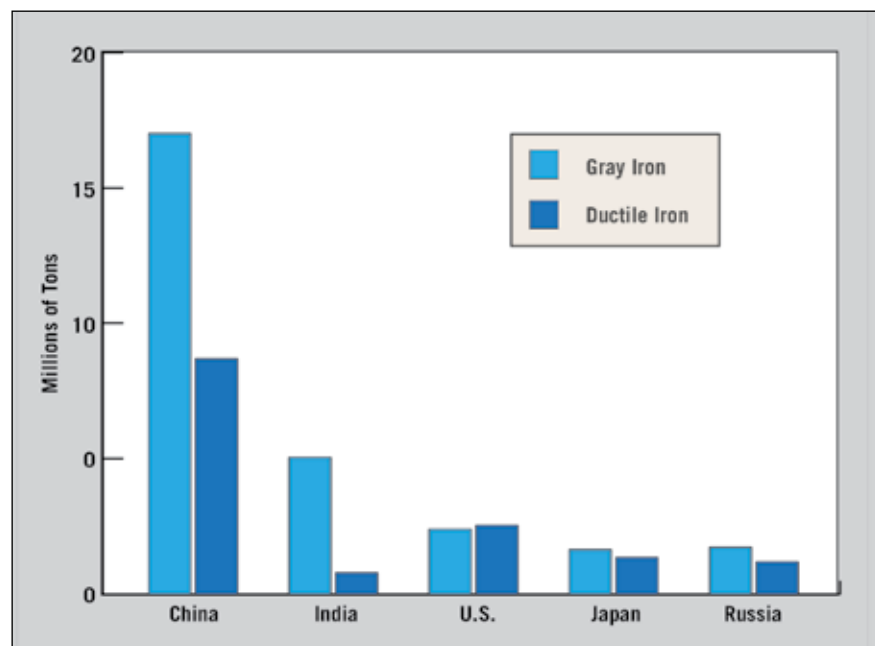
Finland: In one year, Finland's casting production was cut in half, from 152,888 tons to 75,741 tons. Casting production value decreased 46% to \$350 million. Zero metalcasting facilities closed, according to the European Foundry Association, but employment in the industry constricted by 700—15.7% of the workforce.

Czech Republic: The nation's production fell 49.5% from 536,789 tons to 270,970 tons. Productivity dropped from 2,684 tons/plant to 1,505 tons/plant. **MC**

Metalcasting Plants by Nation

Country	Iron	Steel	Nonferrous	Total
Austria	29	4	39	72
Belgium	16	7	8	31
Bosnia/Herzegovina	5	2	4	11
Brazil	552	191	588	1,331
Canada ^A	41	29	115	185
China	17,000	4,700	4,300	26,000
Croatia	15	3	24	42
Czech Republic	84	34	62	180
Denmark ^A	7	0	10	17
Finland	14	6	16	36
France	103	37	319	459
Germany	205	53	344	602
Hungary	62	31	97	190
India	-	-	-	4,600
Italy	157	44	920	1,121
Japan	456	75	1,166	1,697
Korea	508	142	223	873
Mexico	181	162	350	647
Mongolia	24	15	3	42
Netherlands ^B	16	0	5	21
Norway	8	3	11	22
Poland ^C	185	0	245	430
Portugal	47	6	39	92
Romania	53	45	71	169
Russia	-	-	-	1,350
Serbia	14	8	16	38
Slovenia	8	3	16	27
South Africa	88	51	117	256
Spain	60	32	50	142
Sweden	32	13	73	118
Switzerland	18	4	43	65
Taiwan ^C	478	40	330	848
Thailand ^D	230	26	220	476
Turkey	741	72	433	1,246
Ukraine ^E	400	233	437	960
United Kingdom	230*	-	220	450
United States	659	416	985	2,060

*Includes iron and steel facilities. A)2008 data B)2004 data C)2007 data D)2006 data E)2002 data



Gray Iron vs. Ductile Iron

Globally, 65% of iron castings produced are in gray iron, compared to 35% produced in ductile iron. But this type of disparity is not present in every country. Among the top five casting nations, the U.S. produces more ductile iron castings than gray iron, while Russia and Japan show closer gaps between the two materials than do China and India.



Regional Production

Europe's total production fell 31.5% since 2008; North America's production dropped 28.5%. North and Southeast Asia fared best, with India, China and Korea showing gains in 2009.

Top-10 Casting Producers

(Last year's rank in parentheses.)

1. China (1) 35.3 million tons

Gray iron	17 million tons
Ductile iron	8.7 million tons
Steel	4.8 million tons
Nonferrous	4.2 million tons

6. Germany (5) 3.9 million tons

Gray iron	1.8 million tons
Ductile iron	1.2 million tons
Steel	180,000 tons
Nonferrous	690,000 tons

2. India (4) 7.4 million tons

Gray iron	5.05 million tons
Ductile iron	800,000 tons
Steel	900,000 tons
Nonferrous	650,000 tons

7. Brazil (7) 2.3 million tons

All iron	1.9 million tons
Steel	170,000 tons
Nonferrous	210,000 tons

3. U.S. (2) 7.4 million tons

Gray iron	2.4 million tons
Ductile iron	2.6 million tons
Steel	690,000 tons
Nonferrous	1.7 million tons

8. Korea (10) 2.1 million tons

Gray iron	1 million tons
Ductile iron	610,000 tons
Steel	150,000 tons
Nonferrous	310,000 tons

4. Japan (6) 4.4 million tons

Gray iron	1.7 million tons
Ductile iron	1.4 million tons
Steel	200,000 tons
Nonferrous	1.1 million tons

9. France (9) 1.74 million tons

Gray iron	560,000 tons
Ductile iron	870,000 tons
Steel	60,000 tons
Nonferrous	250,000 tons

5. Russia (3) 4.2 million tons

Gray iron	1.7 million tons
Ductile iron	1.2 million tons
Steel	700,000 tons
Nonferrous	500,000 tons

10. Italy (8) 1.67 million tons

Gray iron	570,000 tons
Ductile iron	370,000 tons
Steel	65,000 tons
Nonferrous	665,000 tons