



CASTING FROM BRAZIL

- the sector's data
- forecast for the next 5 years

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September, 2010

Brazil in Figures

Brazil is a South American country of 8.5 million km², 190 million inhabitants, GDP 1.572 US\$ trillions (2009), It has the largest economy in Latin America and the 8th biggest economy in the world.

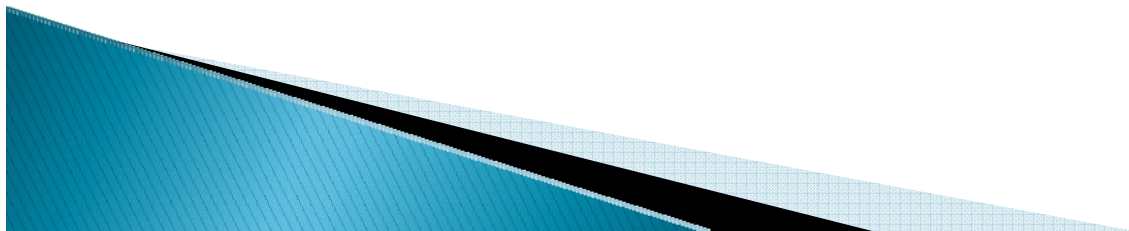
- * Industry : 22 % GDP
- * Brazil is the : 2nd largest producer of iron ore
- * Vehicle fleet : 36.5 million in 2009
- * Total Exports in 2009 : 153 billion US\$
- * Total Imports in 2009 : 128 billion US\$

Foundry in Brazil

GDP in the world – 2009

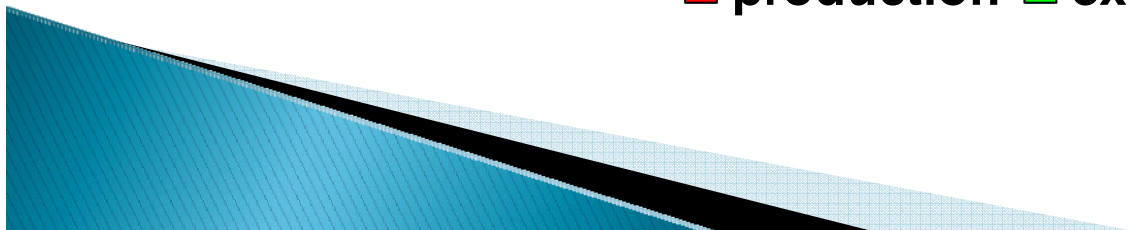
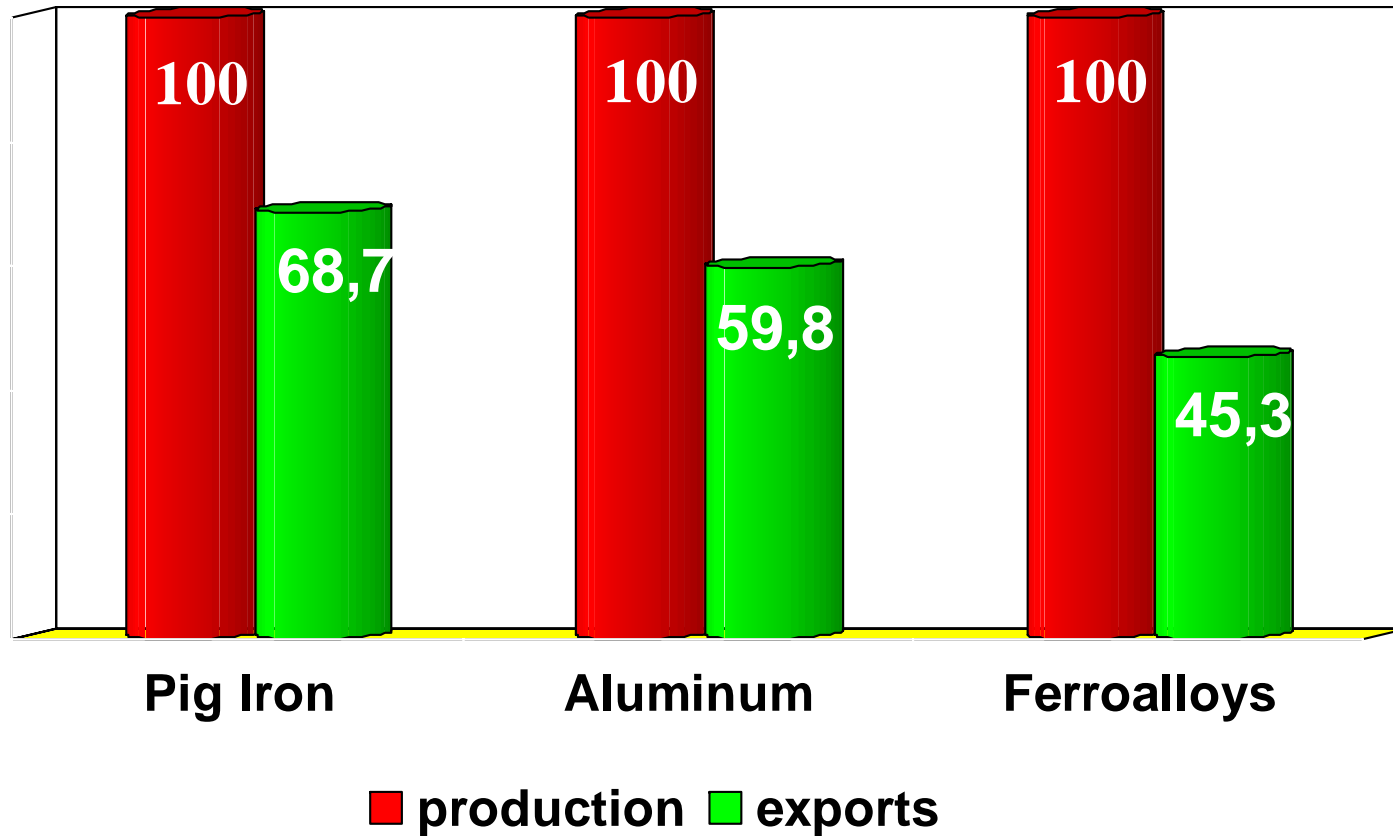
(US\$ trillion)

1. USA	14.256	8. Brazil	1.572
2. Japan	5.068	9. Spain	1.464
3. China	4.909	10. Canada	1.336
4. Germany	3.353	11. India	1.236
5. France	2.676	12. Russia	1.229
6. UK	2.183	13. Mexico	0.875
7. Italy	2.118	14. Korea	0.833

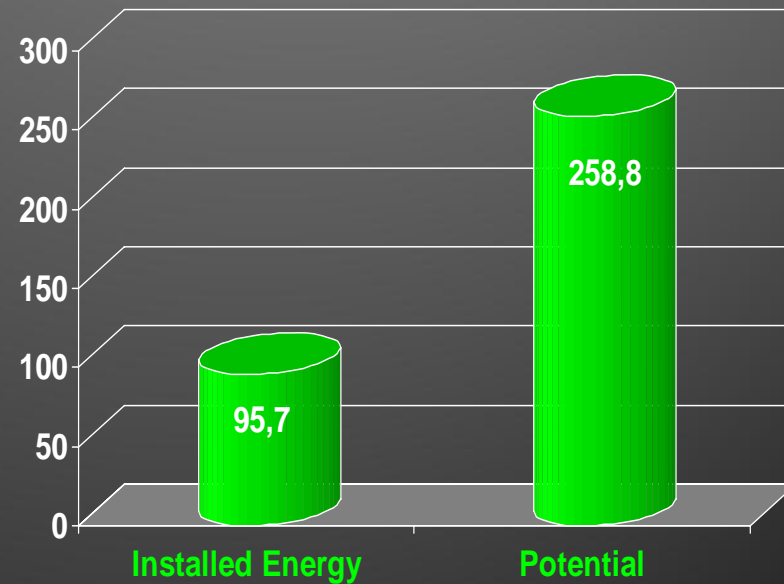
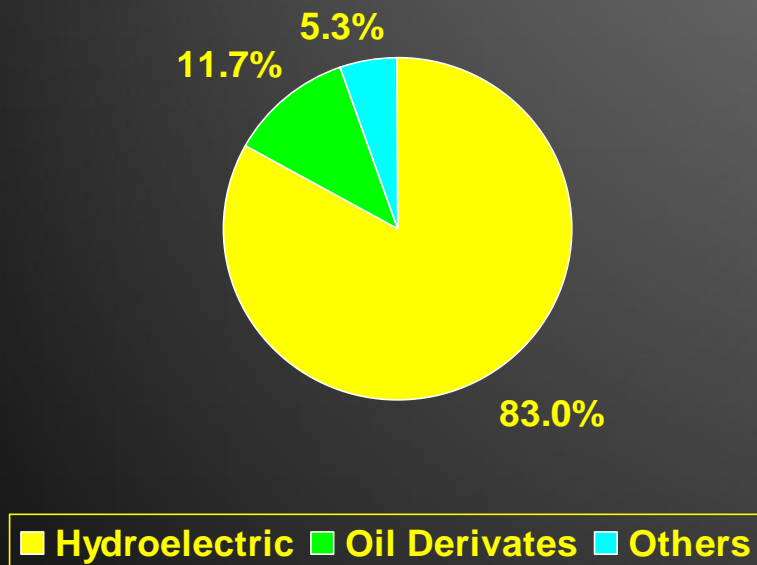


Foundry in Brazil

raw material (%)



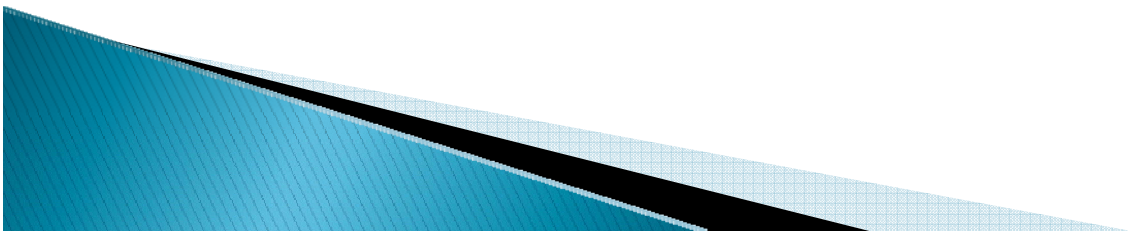
Foundry in Brazil Electric Energy



Foundry in Brazil Labor Force Training

- ▶ Professionalizing Program
- ▶ Metallurgical Engineering Degree
- ▶ Master in Metallurgical Engineering
- ▶ Foundry Engineering

Intensive use



Foundry in Brazil Total Casting x GDP

data from 2001 to 2010

	Production		GDP
Year		%	%
2001	1,761.1	-	1.3
2002	1,970.6	11.9	2.7
2003	2,249.4	14.1	1.1
2004	2,829.9	25.8	5.7
2005	2,968.6	4.9	2.9
2006	3,087.0	4.0	3.8
2007	3,249.6	5.3	6.1
2008	3,355.2	3.3	5.1
2009	2,296.9	(31.5)	(0.2)
2010*	3,100.0	35.0	6.0
Total		76.3	40.1

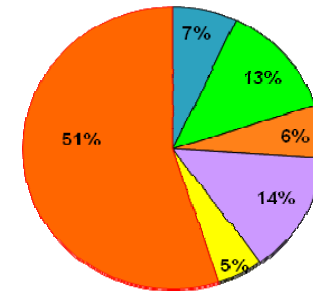
* estimated

Foundry sector has grown twice the GDP average

Foundry in Brazil Iron – Characteristics

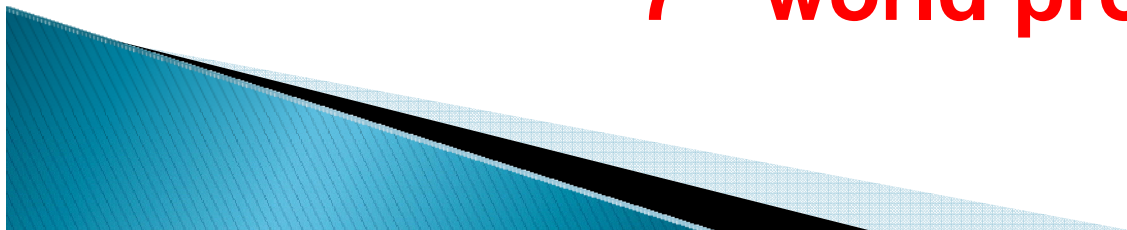
	2008	2009	2010*
Revenue billion	US\$5.6	US\$3.3	US\$5.5
Direct jobs(th)	47.20	38.94	42.97
Production t/y	2.8M	1.9M	2.6M
Inst. Capacity t/y	3.6M	3.8M	3.8M
Companies	673 – 95% Small/Medium		

Distribution of the Production



* estimated

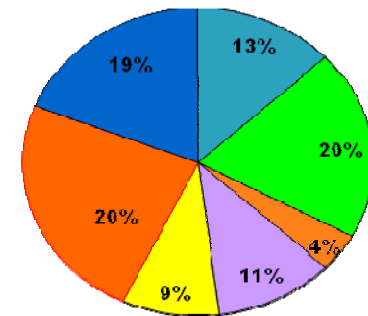
7th world production



Foundry in Brazil Steel – Characteristics

	2008	2009	*2010
Revenue billion	US\$2.0	US\$1.0	US\$1.9
Direct jobs (th)	5.50	3.37	5.00
Prod. thousand t/y	323.8	166.4	213.0
Inst. Cap. (th) t/y	400	420	420
Companies	198 – 95% Small/Medium		

Distribution of the Production



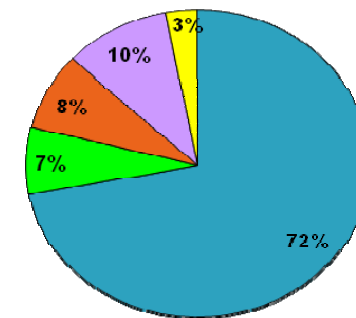
* estimated

5th world production

Foundry in Brazil Aluminum – Characteristics

	2008	2009	*2010
Revenue billion	US\$ 2.9	US\$2.3	US\$2.8
Direct jobs (th)	3,82	3,64	3,48
Production (th)t/y	226	195	218
Inst. Cap. (th) t/y	290	300	300
Companies	354 – 95% Small/Medium		

Distribution of the Production



* estimated

12th. world production

Foundry in Brazil

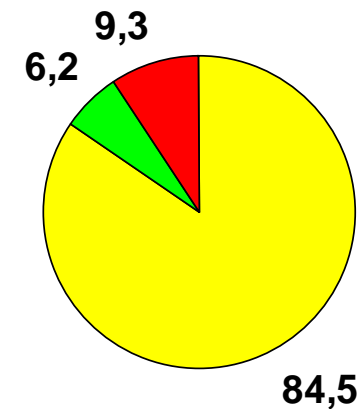
production/domestic market and foreign market (2009)

(thousand ton)

Metal	production	domestic market	foreign market	fm/prod %
▶ Iron	1,917.9	1,664.4	253.5	13.2
▶ Steel	166.4	131.6	34.8	20.9
▶ N Ferrous	212.6	200.1	12.5	5.9
▶ <i>Aluminum</i>	<i>194.5</i>	<i>182.0</i>	<i>12.5</i>	<i>6.4</i>
▶ Total	2,296.9	1,996.1	300.8	13.1

Direct Employees 47 Th

production (ton - %)

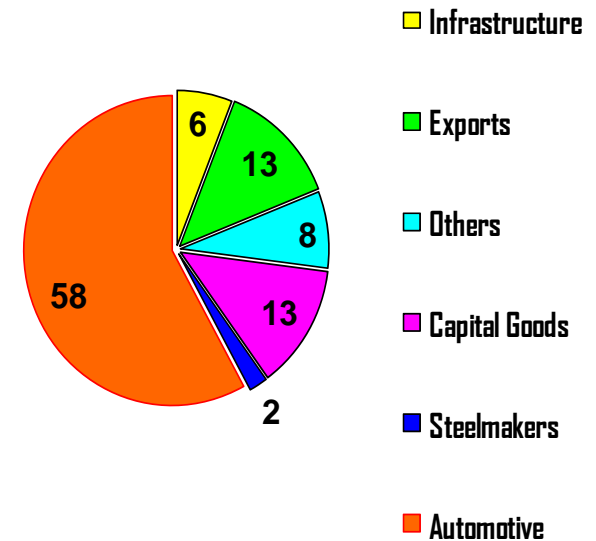


■ iron
 ■ steel
 ■ non ferrous

Foundry in Brazil General Characteristics

	2008	2009	*2010
Revenue billion	US\$11	US\$6.9	US\$10.3
Direct jobs (th)	60.41	46.63	55.00
Production Mt/y	3.4	2.3	3.1
Inst Capacity Mt/y	4.7 million – 2010		
Companies	1331 95% Small/Medium		

Distribution of the Production



* estimated

7th. world production 2008

Foundry in Brazil

production by metal / 1st. Semester

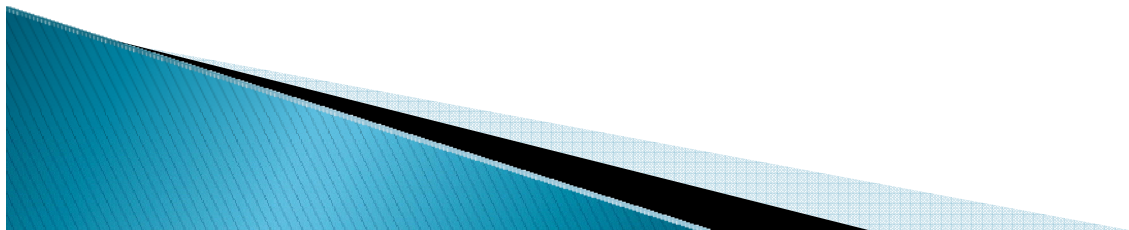
		1 st . S/10	1 st . S/09	1 st . S/08	A/B	A/C
		A	B	C	(%)	(%)
▶ Iron	-	1.304,7	844,8	1.453,9	54,4	(10,3)
▶ Steel	-	106,5	80,9	163,9	31,7	(35,0)
▶ Aluminum*	-	108,8	85,5	120,1	27,3	(9,4)
▶ Nonferrous	-	119,9	93,8	134,6	27,9	(10,9)
▶ Total	-	1.531,1	1.019,5	1.752,4	50,2	(12,6)

**Aluminum – is considered within non-ferrous*

Foundry in Brazil world production

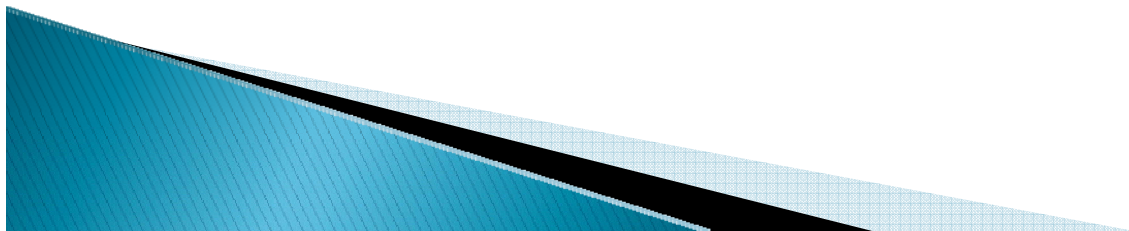
	2003	2008	2008/03
▶ 1 ° CHINA	18.145.966	33.500.000	84.6%
▶ 2 ° USA	12.069.563	10.783.829	
▶ 3 ° RUSSIA	6.200.000	7.800.000	25.8%
▶ 4 ° INDIA	4.038.000	6.840.500	69.4%
▶ 5 ° GERMANY	4.722.583	5.783.691	
▶ 6 ° JAPAN	6.111.405	5.653.798	
▶ <u>7 ° BRAZIL</u>	<u>2.249.413</u>	<u>3.355.232</u>	49.2%
▶ 8 ° ITALY	2.441.000	2.638.011	
▶ 9 ° FRANCE	2.484.527	2.388.038	
▶ 10 ° KOREA	1.783.800	2.065.900	

Source: Modern Casting/Dec 2004/Dec 2009



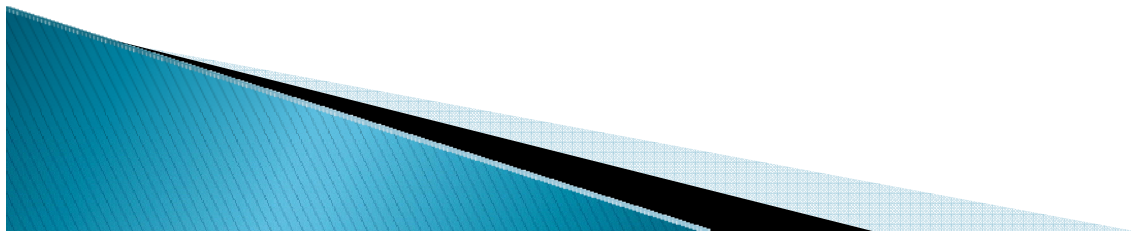
Foundry in Brazil Economy Growing

- ▶ Large oil deposit in the pre-salt
- ▶ International events in Brazil:
 - World Cup Soccer 2014
 - Olympic Games 2016
- ▶ Capital Goods Industry – opportunity
- ▶ Sectors : Railway/Naval Industry – Recovery
- ▶ Automotive Industry – 25 companies
 - Production level exceeding year 2008
 - Investments of 11.2 billion US\$ (over the next 3 years)



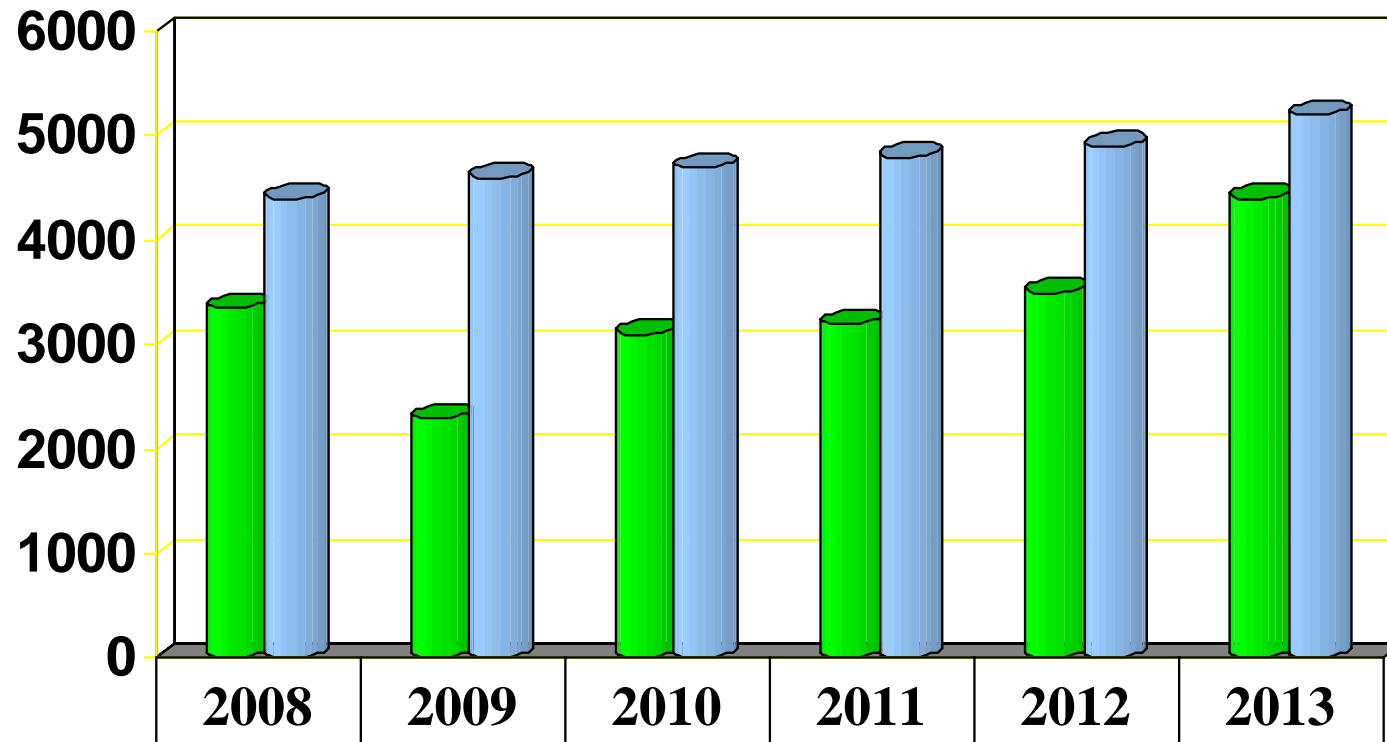
Foundry in Brazil Investments (2008 - 2012)



- ▶ Cast Iron : 750 million US\$ - > Install Cap + 450 Th ton
- ▶ Steel Cast : 290 million US\$ - > Install Cap + 170 Th ton
- ▶ Aluminum : 100 million US\$ - > Install Cap + 100 Th ton
- ▶ Others NFe: 80_million US\$ - > Install Cap + 80 Th ton
- ▶ **Total : 1.22 billion US\$ - > Install Cap + 800 Th ton**



Foundry in Brazil

production x installed capacity (thousand ton)



 production	3355	2297	3100	3200	3500	4400
 instal cap	4400	4600	4700	4800	4900	5200

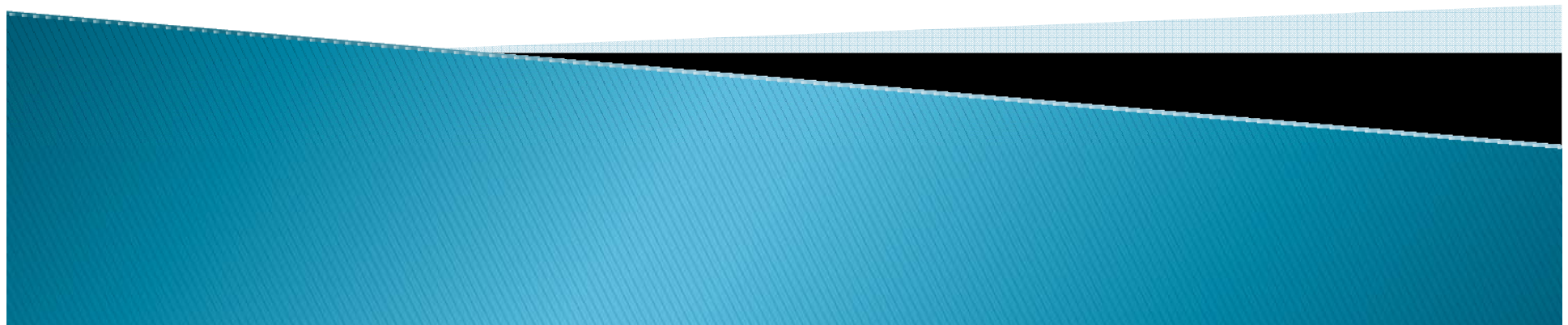


FOUNDRY

A Brazilian Vocation

Always presents but rarely we
perceive

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Thank you

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