

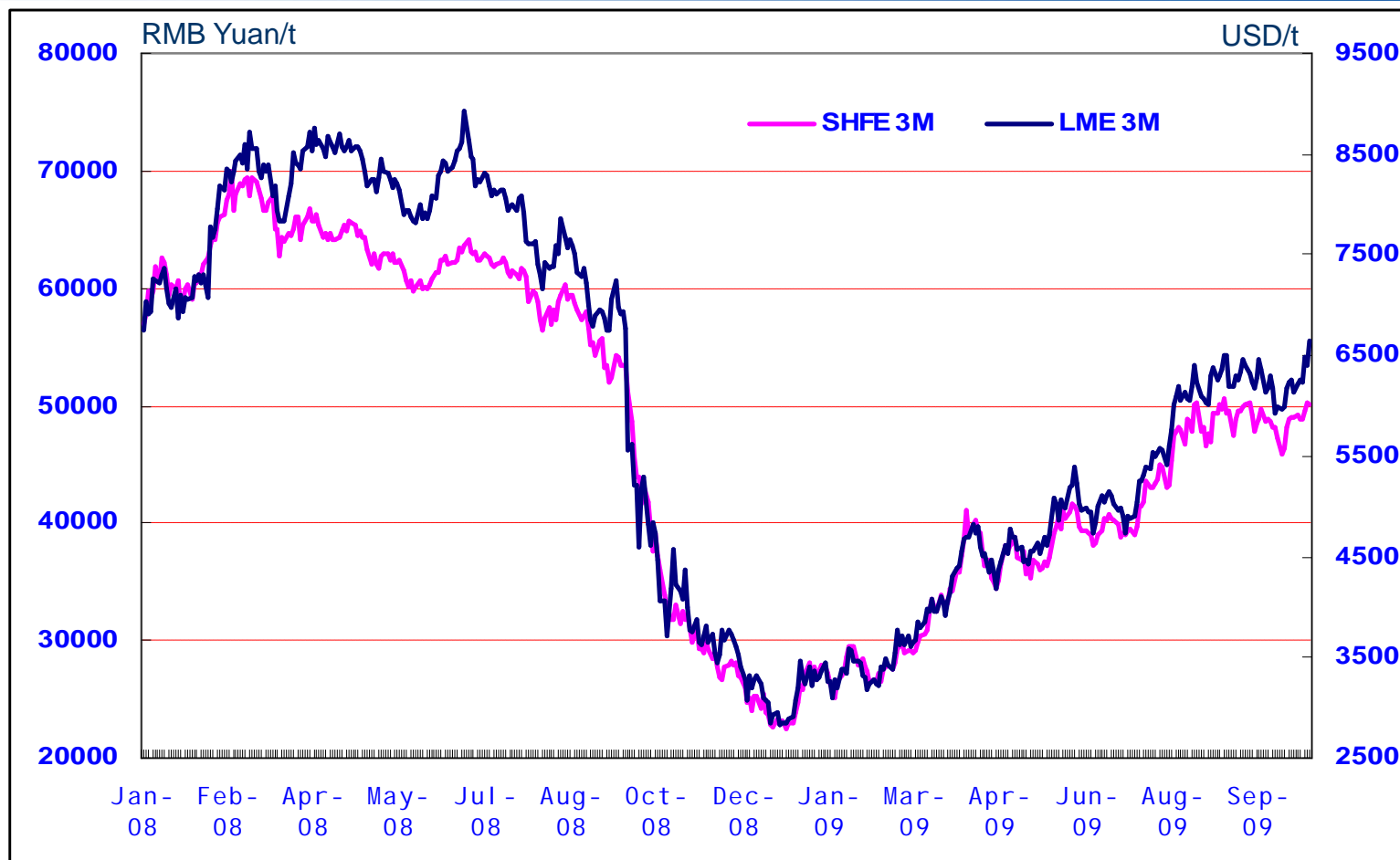
Analysis for China copper market in 2009 and outlook for 2010

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Content

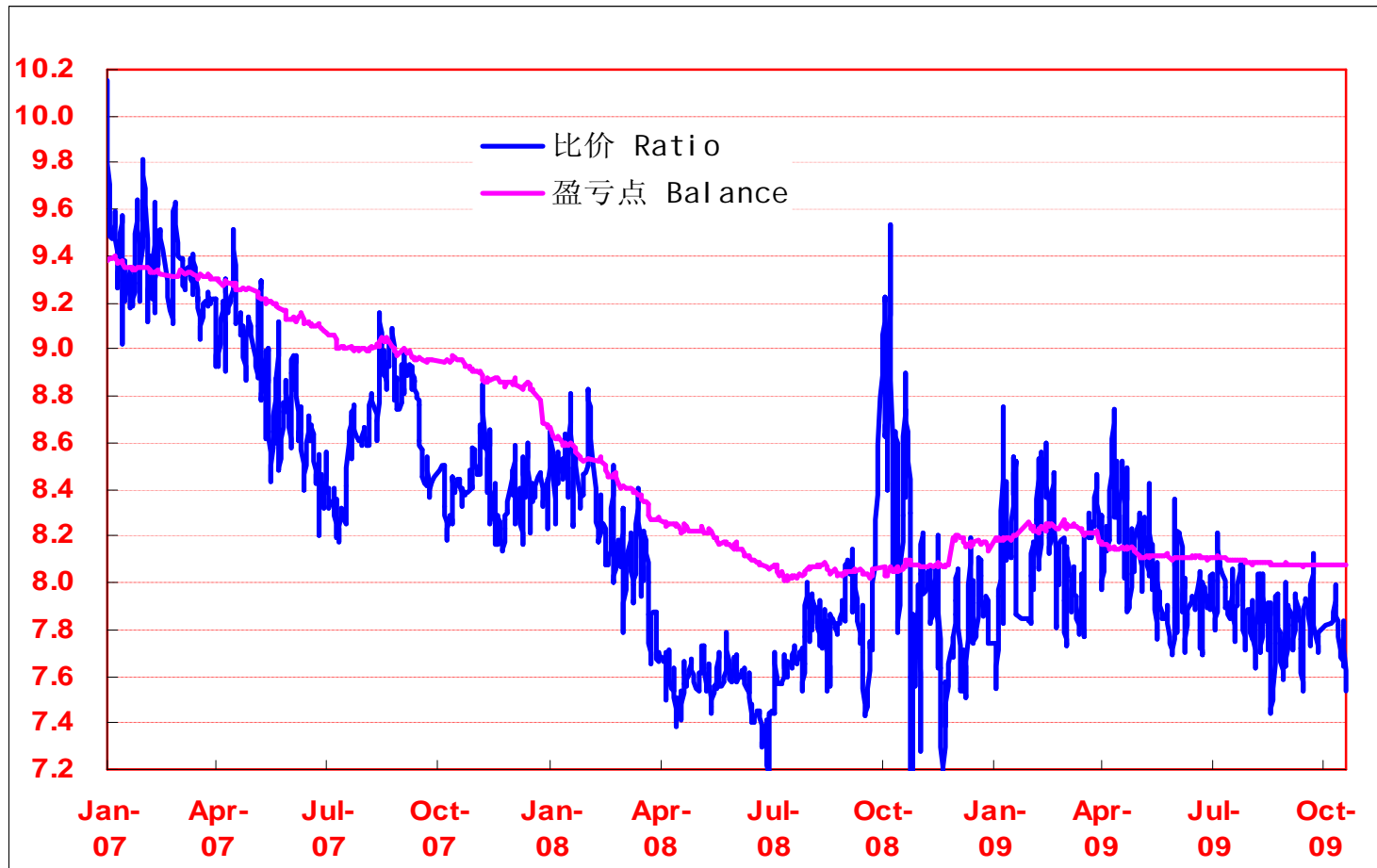
- 1 Review and Analysis for Copper Price
- 2 Copper Production
- 3 Refined Copper Consumption
- 4 Imports and Exports
- 5 Supply and Demand Balance
- 6 Outlook for 2010

Review for Copper Price



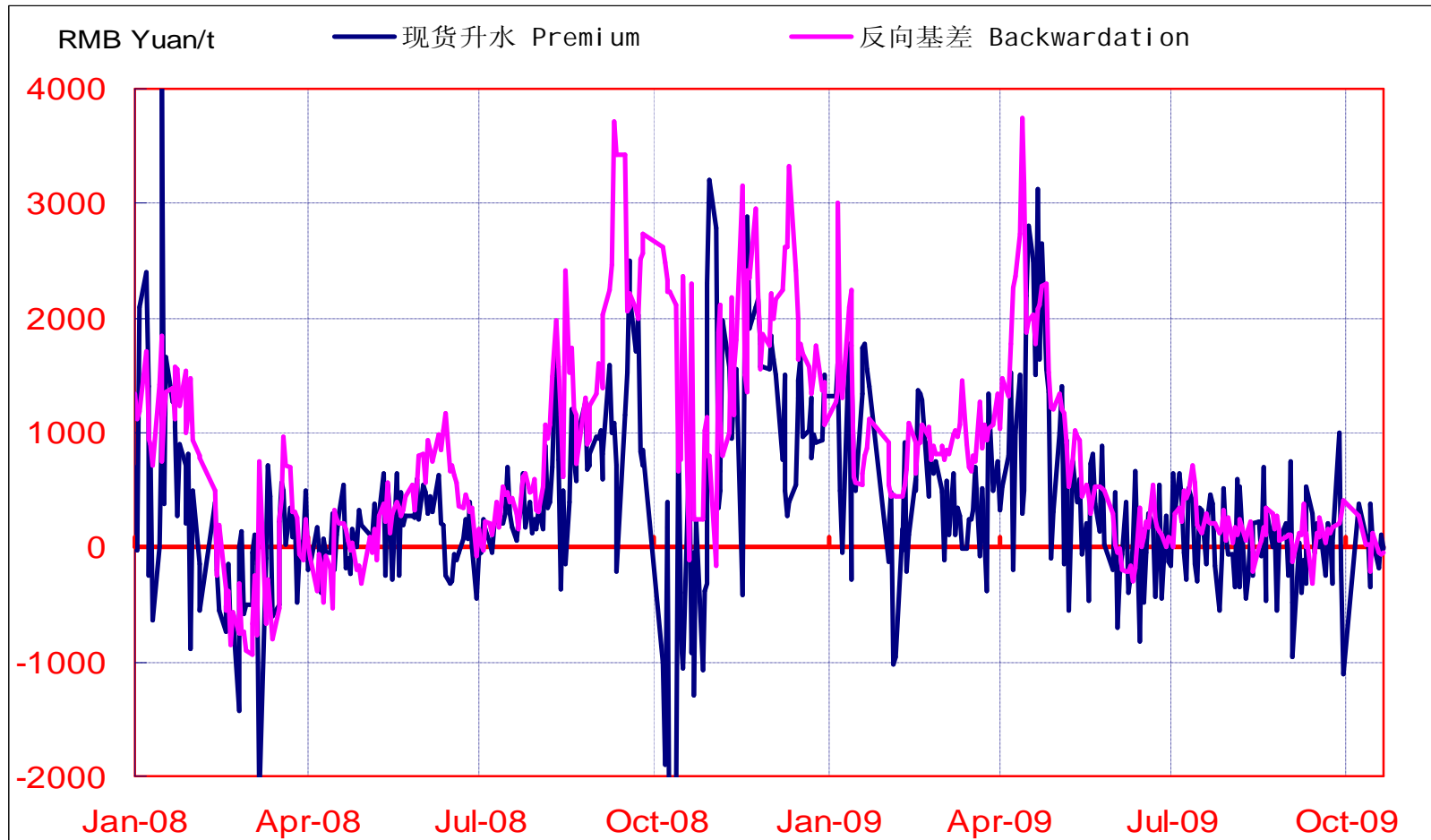
SHFE 3-month copper price closed at 50,460 yuan per tonne by the end of Oct.22, up by 127.2% compared with the lowest price of 22,210 yuan per tonne seen in 2008 and LME 3-month copper price closed at US \$6,580 per tonne, up by 132.9% compared with the lowest price of 2008.

The 3-month Price Ratio Between SHFE and LME



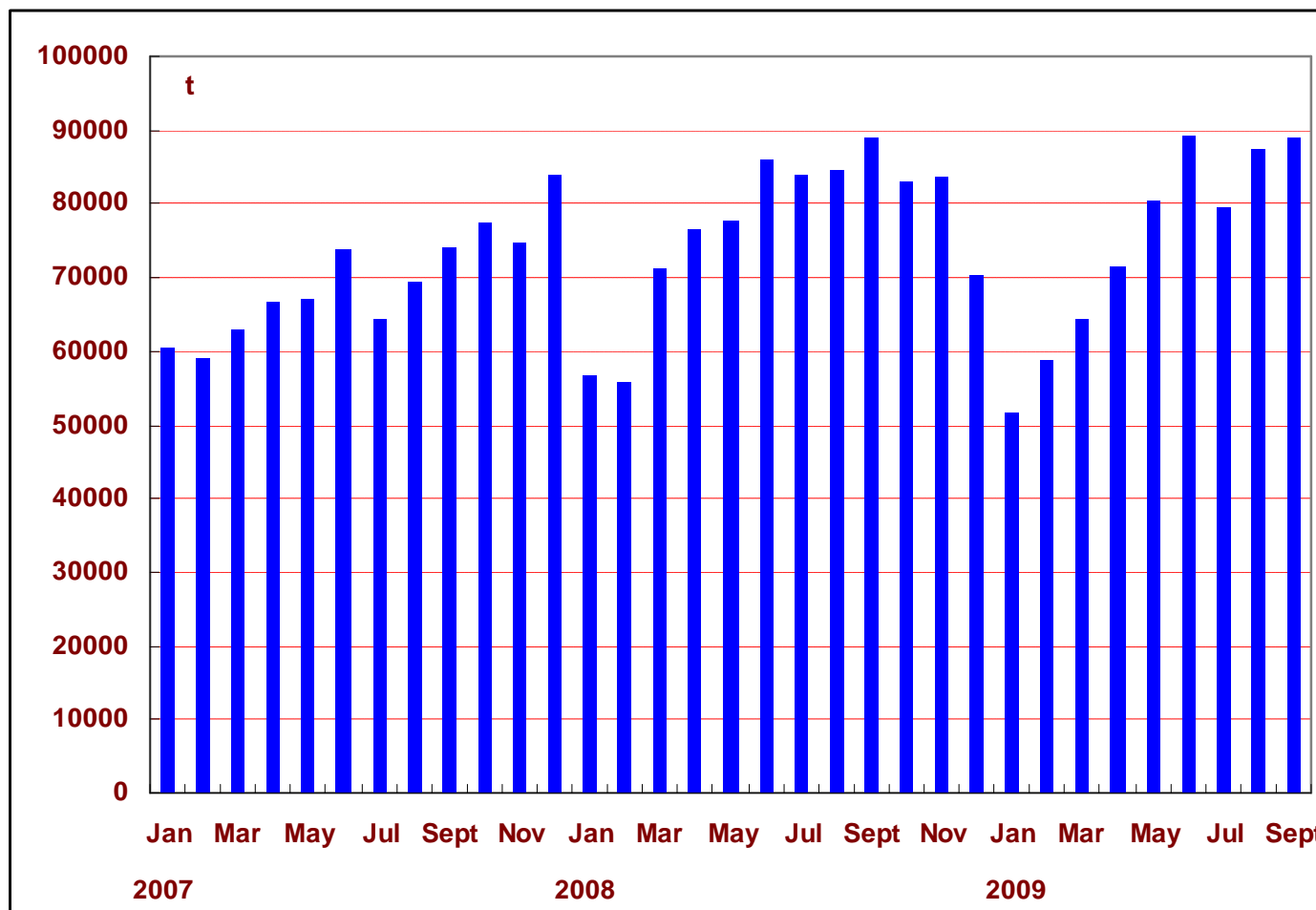
In the most time of the first half of 2009, domestic price was relatively higher than LME price and ratio surpassed the normal level. But the ratio began to decline below break-even point in Q3 with the copper cathode imports soaring

The Domestic Premium



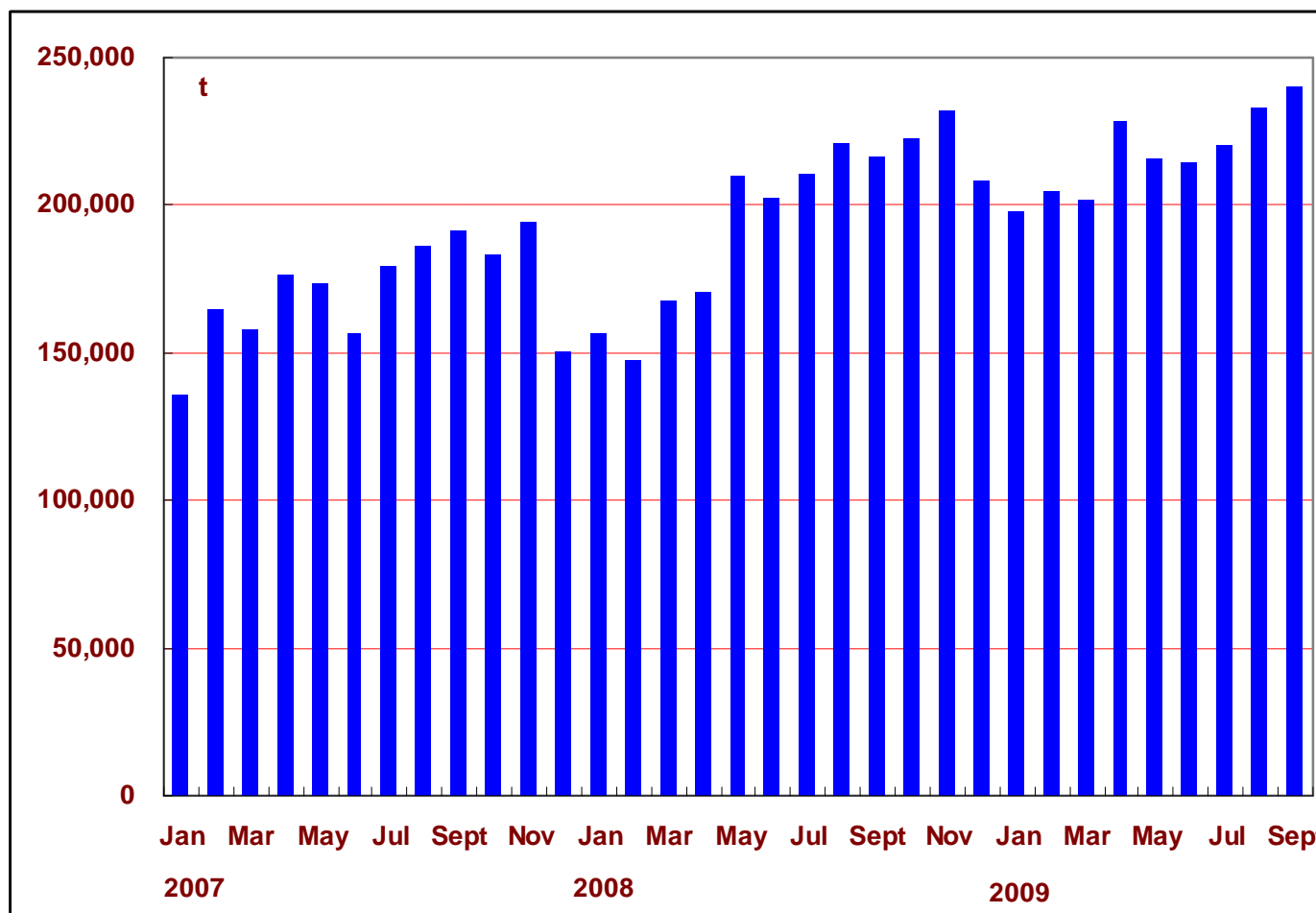
Domestic spot price against SHFE cash price kept premium and future market was seen backwardation since the second half of 2008. Domestic spot price moved to close cash price and future market returned to contango situation since Q2.

China Copper in Concentrate Production



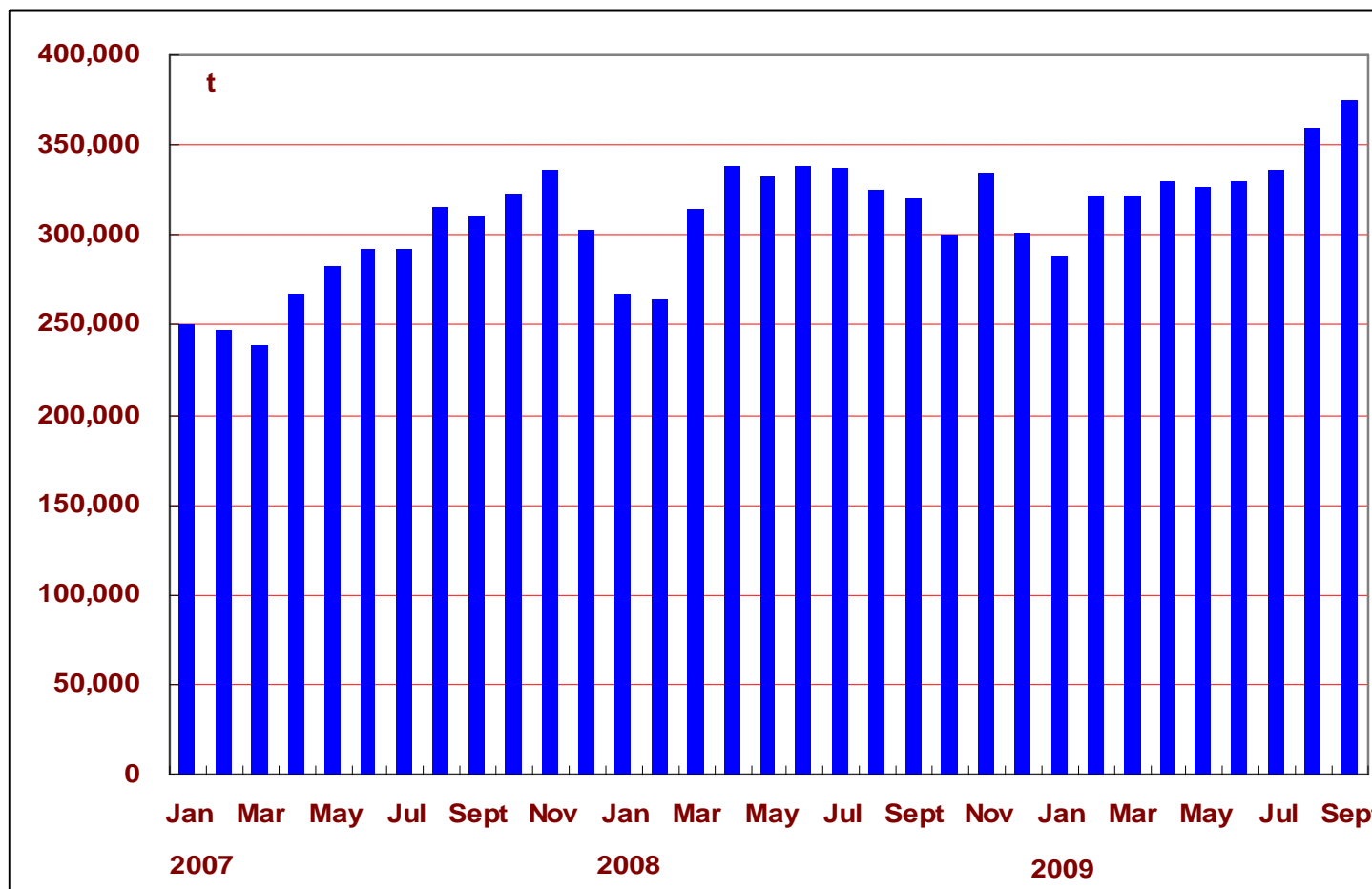
China produced 679,000 tonnes of copper in concentrate in the first nine months of 2009, increase by 0.4% year on year. Antaiko estimated the annual copper in concentrate production may get to 950,000 tonnes, the same level with 2008.

China Copper Blister Production



The copper blister output amounted to 1.99 million tonnes in Jan.-Sept., 2009, up by 12.6% year on year, and yearly total will run to 2.66 million tonnes, up by 10.8% compared with 2008.

Refined Copper Production



Refined copper production increased by 3.51% year on year to 2.95 million tonnes in Jan.-Sept., of 2009. The annual production may achieve 4.04 million tonnes, up by 6.9% compared with 2008.

Copper Smelting and Refining Capacity- Expanding

- ✓ **The copper smelting sector: the investment of newly-commenced projects amounted to 10.53 billion yuan in the first eight months of 2009, up by 124.0% year on year. The fulfilled investment got to 10.19 billion yuan, up by 16.7% year on year.**
- ✓ **The newly-added copper smelting and refining capacity in 2009 respectively reaches 40 ktpy and 610 ktpy. And the total capacity respectively is 3.1 million tpy and 5.17 million tpy.**
- ✓ **At present, the copper smelting and refining capacity of projects in construction respectively reach 1.13 million tpy and 1.5 million tpy. Antaiko expects that the smelting and refining capacity will get to 4.5 million tpy and 7 million tpy taking the planned projects into account by the end of 2012.**
- ✓ **The expansion of copper smelting and refining capacity is the main driver of domestic refined copper output growing.**

Secondary Copper Production Increases Rapidly

- ✓ **Expansion speed of refining capacity was faster than that of smelting capacity significantly this year. As a result, the refinery need more copper scraps to produce blister than before.**
- ✓ **According to CNIA, China produced 828,000 tonnes of secondary copper in the first eight months of 2009, up by 10.6% year on year. The growth rate was more than that of mine copper production (seen 1.2%).**
- ✓ **The big increase of secondary copper production contributed great to domestic refined copper production growth.**

Copper Consumption Growth Rate Lower Than Expected

- ✓ **China government implementing stimulus package underpinned the stable growth of refined copper consumption**
- ✓ **Power sector continued to be the main driver for the refined copper consumption. Transportation and construction sectors also were seen good performance. But, the products production of refrigerating sector decreased compared with 2008 impacted by the falling exports.**
- ✓ **According to China Customs, China exported 8.25 million units of refrigerators and 17.48 million units of air-conditioners in the first eight months of 2009, respectively down by 24.7% and 31.1% year on year**

Key copper-usage products production and growth rate (Unit: million)

<u>Products</u>	<u>Unit</u>	<u>2008</u>		<u>2009</u>	
		1-8	y-o-y chg %	1-8	y-o-y chg %
Automobile	Unit	6.69	14.9	8.5	27.1
Power Generation equipment	KW	82.98	1.1	71.3	-14.4
AC Electromotor	KW	131.96	12.1	117.8	-10.5
Household refrigerator	Unit	33.87	4.6	42.4	15.0
Freezing Box	Unit	8.45	1.6	8.3	12.2
Air conditioner	Unit	65.96	3.1	59.8	-12.1
Transformer	KVA	736.49	27.6	820	11.3
Electric cable	Km	13.22	69	13.5	2.3
Communication cable	Km	57.39	-1.4	38.3	-33.3
Power generation	Billion Kwh	2322.93	10.9	2329.3	0.8

More investment to electric transmission and transformation equipment

The comparison of investment in power sector in Jan.-Aug. of 2008/2009

	<u>Unit</u>	<u>2008</u>	<u>2009</u>	<u>Y-O-Y Chg %</u>
Power generation	Billion yuan	187.5	200.2	6.8%
Power grid	Billion yuan	160.6	189.7	18.1%
Newly added installed capacity	Million kw	51.78	40.82	-21.2%
Newly-added power transformer equipment equal to or more than 220 kv	Million kilovolt-ampere	120.79	131.91	9.2%
Newly-added electric transmission Line equal to or more than 220 kv	Km	19873	18317	-7.8%

Refined copper substitution for copper scraps in the downstream users-major factor for refined copper consumption growth

- ✓ According to CNIA, China produced 828,000 tonnes of secondary copper in the first eight months of 2009, up by 10.6% year on year. Two reasons can explain it in the background that copper scraps imports slowed down during the period. One is that the copper grade of imported copper scraps in 2009 was higher than that of last year. The other is that smelter bought more copper scraps to produce secondary copper than before.
- ✓ The latter factor was dominant, which resulted in the domestic copper scraps price at high level. The direct usage for copper scraps in copper semis makers fell down. Furthermore, more and more domestic copper rod makers carried out technology upgrading in the latest years which required refined copper as feed instead of copper scraps .
- ✓ Antaiko estimates that refined copper substitution for copper scraps may be about 200,000 tonnes, which is the major driver for domestic refined copper consumption growth.

China Refined Copper Consumption Structure in 2009

Unit thousand tonnes

	<u>2008</u>	<u>2009</u>	<u>09/08 %</u>
Power sector	2140	2520	117.8
Refrigerating sector	810	752	92.8
Transportation	520	562	108.1
Electronic	376	391	103.9
Construction	427	495	115.9
Others	627	680	108.5
Total	4900	5400	110.2

Copper Products Trade

- ✓ **Refined copper imports soared and exports slumped**
- ✓ **Raw materials—copper bliser and copper concentrate imports rose, but copper scraps imports declined.**
- ✓ **The imports and exports of copper semis all dropped down.**

China's imports and exports for copper products during Jan.-Aug. of 2008/2009

Unit: thousand tonnes

		2008	2009	Y-O-Y %
Copper concentrate	Imports	3,457	4,126	19.4
	Exports	3	3	2.0
Copper scraps	Imports	3,924	2,579	-34.3
	Exports	2	1	-36.1
Blister/anode	Imports	122	137	12.4
	Exports	1	0	-94.2
Cathode	Imports	862	2,294	166.1
	Exports	90	19	-78.3
Copper alloy	Imports	37	32	-15.7
	Exports	0	0	-80.4
Copper semis	Imports	667	505	-24.2
	Exports	378	289	-23.5

China Refined Copper Supply/Demand Balance in 2009

Unit: thousand tonnes

	<u>2008</u>	<u>2009</u>	<u>Y-O-Y %</u>
Output	3,779	4,040	8.1%
Imports	1,460	3,040	108.3%
Exports	97	50	-48.4%
Consumption	4,900	5,400	10.2%
Balance	242	1,630	-

Some Features on China Copper Market

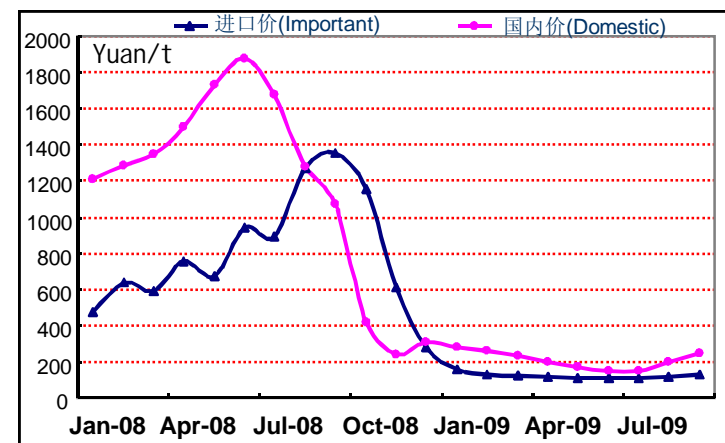
✓ Sulphuric acid price at low level

Sulphuric acid price stood at low level for a long time this year impacted by the weak downstream demand and more imported acid flow to domestic market. The acid produced by some copper smelters all the time was below 100 yuan per tonne, which enhanced the operating cost.

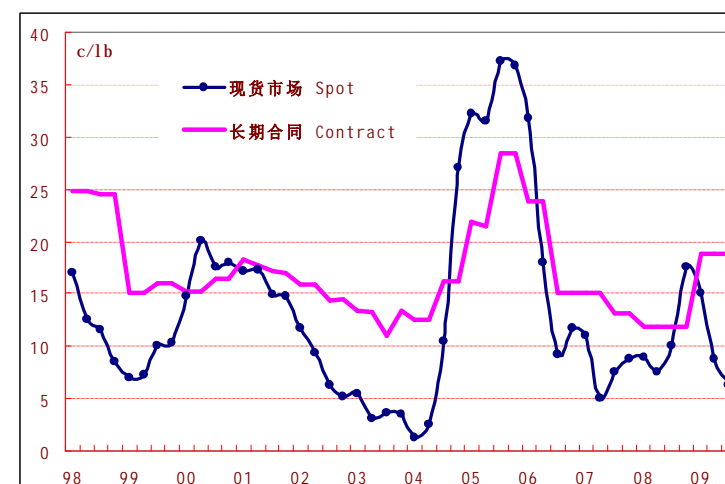
✓ Spot TC/RCs slumped

Spot treatment and refining charges fell to the lowest \$10 a tonne and 1.0 US cents a pound from \$90 a tonne and 9.0 US cents a pound seen in the early 2009 with domestic copper smelting capacity expanding and tight international concentrate supply.

Acid price trend



TC/RCs



Some Features on China Copper Market

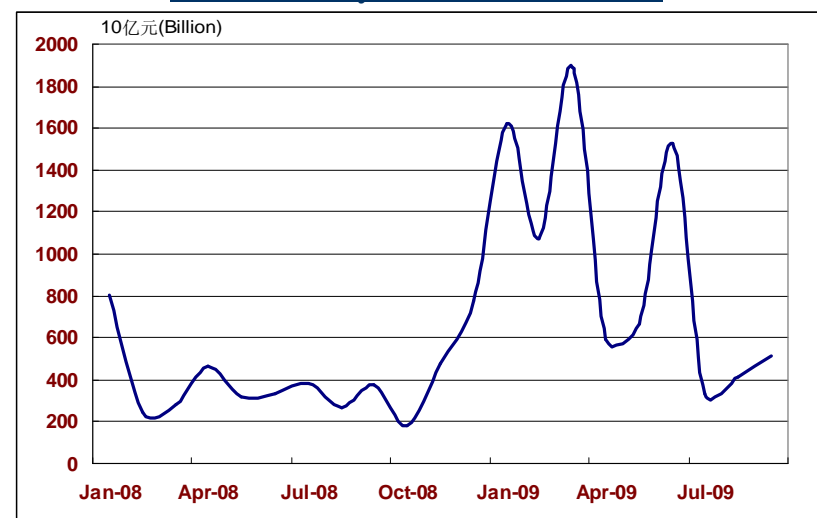
✓ Easy money policy and sufficient currency supply

Monthly new bank loan increased a lot since Nov. 2008 in a bid to boost economy growing and it amounted to 8.63 trillion yuan in the first nine months of 2009, up by 149% year on year. During the period, New bank load got to all-time high 1.89 trillion yuan in Mar., 2009.

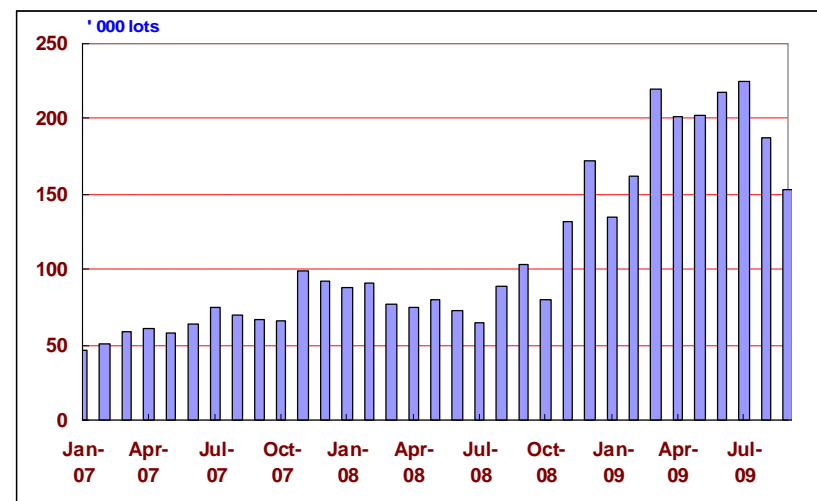
✓ The great increase of position in copper future showed speculation sentiment.

Position in SHFE amounted to 224,000 lot (single) by the end of Jul., 2009, up by 67% compared with end Jan. 2009.

China monthly new bank load trend



SHFE copper contract OI (single)



Outlook for 2010

- ✓ **Production:** China copper smelting and refining capacity is expected to 4.4 million tpy in 2010, up by 8.9% compared with the estimation in early 2009 considering 300,000 tpy of copper smelting capacity and 600,000 tpy of copper refining capacity coming on stream in 2010.
- ✓ **Consumption:** China refined copper consumption will rise by 8% to 5.83 million tonnes in 2010. Because stimulus package will continue to boost domestic economy and exports may resume increase next year.
- ✓ **Supply and demand balance:** Domestic refined copper supply deficit is expected to 1.43 million tonnes in 2010 , the same level with 2009.

- ✓ **Imports and exports:** Copper concentrate imports will continue to grow and copper scraps imports also will see rebound in 2010. But imports for copper cathode will decline due to over-imported cathode in 2009.
- ✓ **Sulphuric acid:** To a certain extent, sulphuric acid price will increase a bit in 2010, but the growth rate is modest.
- ✓ **TC/RCs:** TC/RCs will maintain at low price due to strong demand for raw materials.

Thanks for your attention!

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