

Written by Tom Vulcan | January 22, 2006

Thank Scrap: The Market For Recycled Metals

What's the most energy-efficient, environmentally friendly way to take advantage of strong metal prices? Recycling.

- Huge energy (and cost) savings
- A booming market
- The best way to invest

"Where there's muck there's brass"

Slang from Yorkshire, England

In other words, "Where there's muck there's money."

And these days, with a booming scrap metal market, "Where there's brass there's brass."

Indeed, the estimated New York dealer buying price early last week (delivered to the scrap yard) for scrap yellow brass solids ranged from US\$1.25/lb to US\$1.35/lb; the price for scrap red brass solids was 12% higher. Little wonder, then, that New York's Department of Sanitation police are now aggressively cracking down on urban entrepreneurs caught "recyclable rustling." The department makes a tidy sum selling its metal scrap.

The boom in scrap is similar for many other metals (as, unfortunately, is the rustling), including precious metals. With gold trading at record highs, even Indian housewives, voracious consumers of gold, are [selling unwanted jewelry for scrap](#). There is plenty of anecdotal evidence, also, to suggest that you will probably now get the best price for your grandma's silver flatware selling it for scrap!

Whether it's chomped up Boeing 747s, crushed armored cars bought from the government or spent catalytic converters, there's money in scrap. From having often been the domain of the likes of the Gotti family in New York and the Richardsons in London, scrap is now significantly more "mainstream," to the extent of even experiencing some "formal" consolidation.



Source: Bureau of International Recycling.

John Seabrook, in his truly wonderful introduction to the U.S. scrap industry, "[American Scrap](#)," in *The New Yorker* of January 14, makes the observation that not only does the industry appear to be thriving, it is also globalizing. With the current prices being paid, and the strong demand, for metals, this is not surprising.

A Global Industry

Scrap metal is big business, whether it is ferrous (iron and steel), nonferrous (other base metals), stainless steel, a special alloy or a precious metal. According to the [Bureau of International Recycling](#) ("BIR"), the global recycling industry as a whole (including plastics, rubber, paper etc.) has an annual turnover of more than US\$160 billion, processes more than 500 million tonnes of scrap (of which 400 tonnes is metal) and employs more than 1.5 million people.

In 2006, the recycling industry in the U.S. alone was worth US\$65 billion with, according to the [Institute of Scrap Recycling Industries, Inc.](#) ("ISRI"), the country annually recycling more than 90 million tons of ferrous and nonferrous metals.

Scrap is also a big export earner for the U.S. (2006: US\$15.7 billion). Ironically, in 2006, after electronic components, in dollar terms, scrap was the *second* largest U.S. export to China. By the end of November 2007, the U.S. had exported worldwide some 15.1 million tonnes of ferrous scrap and 2.8 million short tons (short ton: 2,000 lbs/907 kgs) of nonferrous scrap, with China, again, a major recipient. And with the U.S. dollar at its current levels, ferrous scrap remains a steal for steelmakers outside our borders.

Why The Current Interest?

Two main reasons: first, a strong market for metals; and, second, the continuing concern for the global environment.

A Strong Market For Metals

As regions such as China, India and the Far East continue to develop strongly, involving, not least, extensive commercial, residential and industrial construction projects, so too does their demand for iron and steel, copper, aluminum, lead and tin. The need is there, also, for the special alloys (e.g., nickel, molybdenum and tungsten) used in steels and such things as industrial machinery, armaments and cars.

Scrap helps the primary metals industry feed these needs—but not only in the developing countries. In the U.S., two-thirds by weight of domestically produced steel is made from scrap, and nonferrous scrap is used to make 60% of the alloys and metals produced domestically. Even back in 2004, steelmakers worldwide used scrap for nearly half their furnace feedstock.

In the steel industry, because it is so massive, quite apart from the matter of its cost, the use of scrap, as opposed to virgin ore, has a single major advantage—very significant energy savings: some 74% for both steel and iron.

If one of the attractions of ferrous and nonferrous scrap is in energy savings, it is the current price levels that are particularly attractive. Amongst other places, silver and gold can be recovered from old electric scrap, electronic equipment, including computers, military equipment and, of course, jewelry.

Some Metals In Electronic Scrap (%)

	Auto Electrics	Keyboards	PCs	Printed Circuit Boards	TVs*	Metals
Ag	0.12	0.05	0.009	0.1	0.03	Ag = Silver
Au	0.007	0.005	0.001	0.015	0.0025	Au = Gold
Al	5	18	11	3	5	Al = Aluminum
Bi	0.01			0.17	0.2	Bi = Bismuth
Cu	20	13	7	25	12	Cu = Copper
Ni	0.3	0.6	0.2	0.5	0.5	Ni = Nickel
Pd	0.005	0.002	0.0004	0.002	0.001	Pd = Palladium
Pb	1	0.3	1.5	3	3	Pb = Lead
Sb	0.08	0.3	0.5	0.06	0.05	Sb = Antimony
Zn	1	3	1.2	1.5	2	Zn = Zinc
						Fe = Iron
= following removal of Fe						
* = following removal of Fe and glass						

In addition, while both silver and platinum can be recovered from spent catalytic converters, platinum can also be recovered from old hard disk drives, oxygen sensors, spark plugs and disposable medical devices.

In fact, according to the U.S. Department of Defense, in the 30 years prior to 2005, through sales of military scrap under its Precious Metals Recovery Program, it saved the government some [US\\$250 million](#).

At a current price level around US\$3,400/lb, the rhenium alone (not to mention the platinum) recoverable from the spent bimetallic catalysts used in the oil refining industry makes them valuable scrap. And with the price of cobalt (a key component in lithium-ion batteries) having skyrocketed some 70% in the last year to a current price of around US\$45/lb, the scrap value of old jet engines, magnets, spent rechargeable batteries and cutting tools have risen significantly.

The Continuing Concern For The Environment

The greatest environmental benefit from using scrap, instead of virgin ore, is the reduction in greenhouse emissions: Recycling metals saves energy. If the savings in the steel industry is large, for other base metals it can be even more significant:

- aluminum – 95%
- copper – 85%
- zinc – 63%
- lead – 60%

It is no wonder, therefore, that around 40% of the world's need for copper is provided for by scrap.

Using scrap not only reduces air pollution, and both water use and pollution, it also conserves natural resources. For example, recycling one ton of steel conserves 120 lbs of limestone, 2,500 lbs of iron ore and 1,400 lbs of coal with an 86% reduction in air pollution, 40% in water use and 76% in water pollution.

Sharing In The Boom

While "recyclable rustling," [pinching beer kegs](#) and stripping roofs of lead may be increasingly popular and highly profitable, they are also all illegal. In addition, trying to steal copper wiring can also be [lethal](#).

For the committed entrepreneur, there are books and Web sites out there devoted to the "home" recycler telling how to recycle everything from old alternators to electronics to government surplus. You can even download a scrap metal business plan from the Web.

Unfortunately for those of us who do not want either to set up our own scrap yard or turn over the basement for dismantling old TVs, a large proportion of the scrap metal/recycling industry is privately owned, not least because many of the businesses are small operations, often family firms, employing just a handful of employees. There are, however, a number of U.S. publicly quoted companies seriously involved in scrap metal, even if it may not be their only activity.

Each week the ISRI publishes its *Friday Report*, with a section at the back entitled "ISRI's Eye on Equities." While all of the companies listed have an interest in recycling of one sort or another, among those with a particular interest in scrap metal are: Commercial Metals Company (CMC), Gerdau Ameristeel (GNA), Industrial Services of America (IDSA), Metalico (MEA), Metal Management (MM), Schnitzer Steel Industries (SCHN), Sims Group (SIMYY) and Steel Dynamics (STLD).

Conclusion

Whether or not metal prices remain at their current levels, there will always be a need for scrap metal—in all its many forms, shapes and sizes. On the one hand, there are the dramatic energy savings its use provides. And on the other, there is the fact that its use benefits the environment significantly. With energy looking to remain costly for a while yet and concern for our environment set only to increase, scrap yards will be with us for a while. And there will continue to be brass in muck.

Research Resources

- [American Metal Market](#)
- [British Metals Recycling Association](#)
- [Bureau of International Recycling](#)
- [Construction & Demolition Recycling](#)
- [Demolition and Scrap Metal Salvage News](#)
- [Institute of Scrap Recycling Industries, Inc.](#)