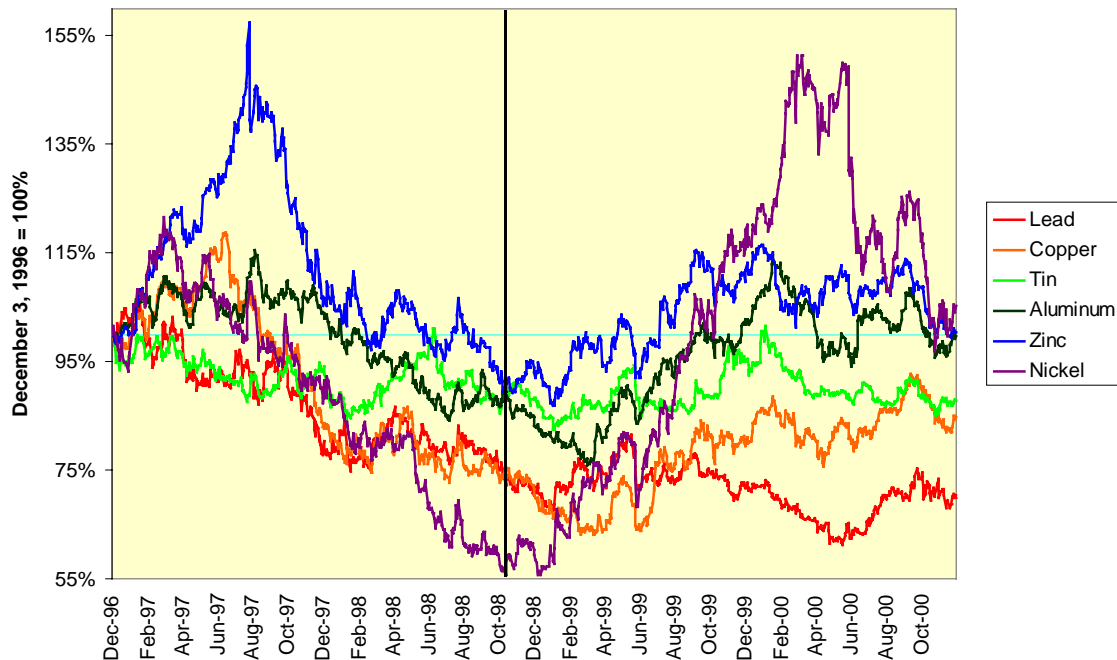


Base Metals, Exotic Spreads

Growing pains are a part of life best left to the young, whether we are talking about people or entire economic sectors. The current economic frictions, and we can debate whether we're going to remain on a strong growth path or embark upon some variation of a "landing," as if that's what economies do, are viewed best through the prism of growing pains.

The massive reallocation of resources to the Internet economy has placed some unusual strains upon various industrial sectors. For example, electric utilities worldwide are struggling to keep up with the surging power demands of the machine population. In the meantime, computers and telecommunications have increased our production efficiencies. As a result, upward price pressures on cyclical commodities like base metals have been notably absent during the recent expansion. However, downward price pressures during times of global distress have been quite evident, and this may create an interesting trading opportunity among metal producers based on metals prices.

Base Metals Prices: An Economic Signal?



Base Metal Spreads

The division of calendar time into BC and AD is so last millennium. Let's use BRC and ARC, for "Before Russian Crisis" and "After Russian Crisis," instead, as so much market behavior appears to have changed during October 1998. A chart of the six base metals traded on the London Metals Exchange reveals a reasonably uniform downturn starting for all but zinc in the spring of 1997; zinc peaked at the start of the Asian crisis that summer. Prices trended downward through the remainder of the BRC era.

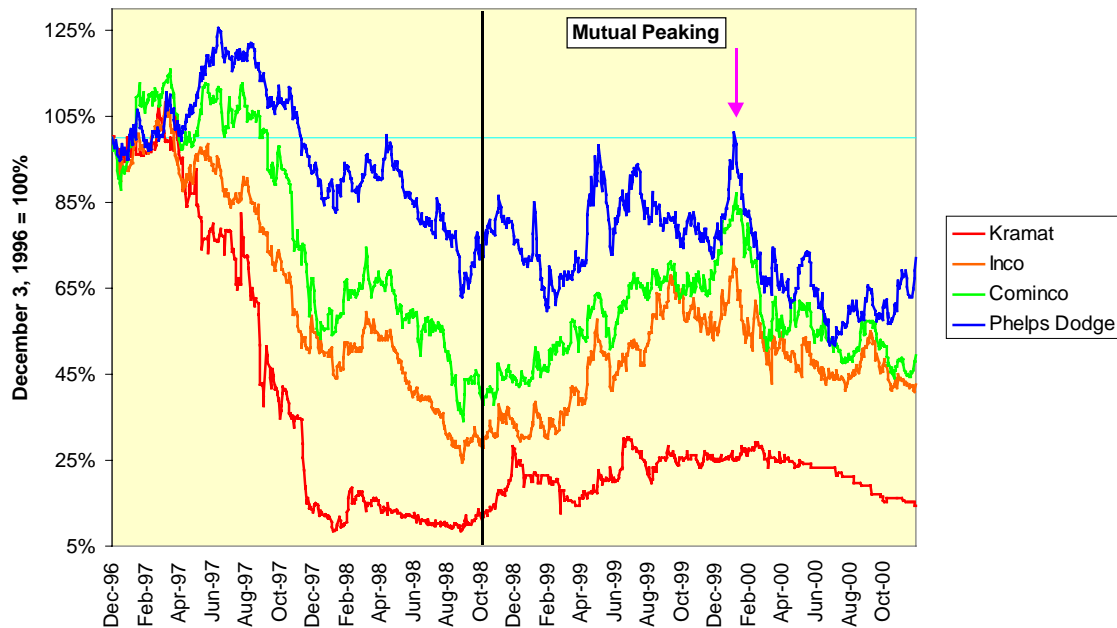
Once the ARC line was crossed, the behavior of the base metals complex diverged internally. Nickel, produced heavily in Russia, shot higher as production slowed at Norilsk on the scenic Arctic Ocean coast. Copper and lead, produced worldwide, continued in their depressed state. Zinc, aluminum, and tin stabilized near 1996 levels.

Only one of these metals, nickel, appears to have been an economic barometer at all during this period. Its price surged at the BRC/ARC border, and then peaked in May 2000, right around the time of the Fed's last

rate hike. This behavior suggests that the metal, used primarily in steel alloys, is both far closer to its production capacity than the other metals and far more economically sensitive as well.

Mining, like many commodity-based industries, has such non-diversifiable risks for participants that many mining operations are either subsumed within conglomerates or diversified across a wide range of products. Pure single-metal plays are rare among large companies, but we still can narrow our focus. Let's take a representative nickel producer, Inco of Canada, and compare its price movements to those of a lead producer, Cominco of Canada, a tin producer, Kramat Tin Dredging of Malaysia, and a copper producer, Phelps Dodge of the United States.

Relative Price Movement: Select Base Metals Producers Converted To USD



The most noticeable feature of the chart above is the poor performance of all of these basic industries in USD terms; Kramat Tin, for example plunged well before the onset of the Asian crisis in July 1997. The other producers bottomed in advance of the ARC line, and rallied slowly and unevenly thereafter. Cominco and Inco have paralleled each other and peaked virtually at the same time in early 2000, even though the prices of lead and nickel have been anything but parallel over this period.

The second most noticeable feature, highlighted on the chart, is the simultaneous peaking of Inco, Cominco, and Phelps Dodge in January 2000, a time in which global economic optimism was rampant. This group top is most unusual given the different metals, operating environments, and currencies of these three companies.

Phelps Dodge in copper has been the exception throughout this period. Not only didn't it fall as far as the others during the BRC period, it declined in the second half of 1999. More important for our purposes, however, is how its price performance has exceeded those of other metals producers since July 2000, the time when the robustness of the American economy first started to come into question.

Playing A Spread

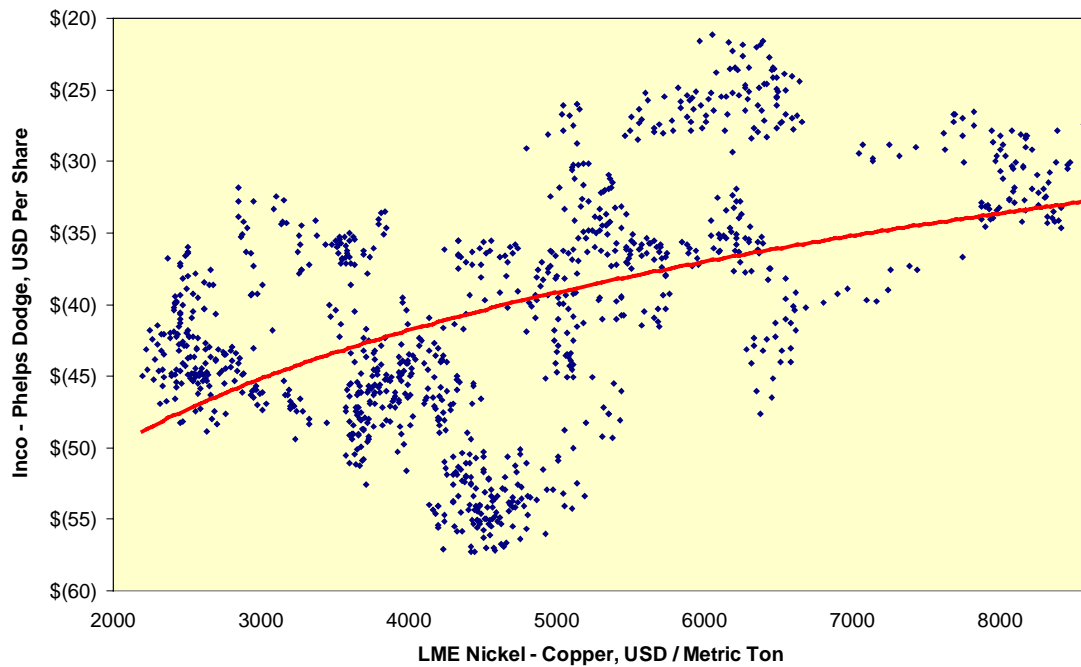
If nickel continues to be more economically sensitive than copper, then we should be able to construct an inter-metal recession play by going long copper via Phelps Dodge and short nickel via Inco and hedging the latter's Canadian dollar exposure. While both companies, to be sure, have many other factors involved in

their operations other than metal prices, the relationship between metals prices and share prices has moved in the direction we should expect over the sample period:

$$[\text{Inco} - \text{Phelps Dodge}] = 11.78 * \log(\text{Nickel-Copper}) - 139.49, r^2 = .22$$

The logarithmic nature of this relationship reflects the asymmetry of upward and downward price pressures on the base metals noted above.

Inco - Phelps Dodge Spread As A Function Of Metals Prices



The most interesting aspect of this trade derives from the fact that so many of the primary producers of nickel – Canada, Australia, Cuba, and Russia – either have currencies at or near all-time lows against the dollar or are in economic distress. They are likely to increase exports to obtain hard currency.

But we wouldn't want to do anything to profit from their distress, now would we?