



INSG Insight

INSG SECRETARIAT BRIEFING PAPER

March 2010 – No.9

Nickel Stocks

Introduction

This report, the ninth in the series of INSG Insight briefing reports, provides members with information on nickel stocks. The monthly Statistical Bulletin regularly provides data on current stock levels and trends. In addition, presentations in the regular Study Group meetings often include information on stocks. The information in this Insight is intended to furnish members with background information on how stocks are calculated, provide perspective by showing historic and long term trends, furnish information on nickel stocks relative to other metals, and discuss the current status of nickel stocks.

Definition of Stocks

Stocks may be defined as refined metal in storage. Nickel stocks comprise primary nickel products. Figures on stocks do not include metal in concentrate or scrap. There are several categories of stocks, depending on where the metal is held. These categories are those held by producers (or their agents), consumers, traders, exchanges (principally the London Metal Exchange - LME) and governments stockpiles.

Stocks are classified as either reported or unreported. Reported stocks comprise those that are publicly reported in LME as well as producer stocks reported directly to INSG. Unreported stocks are typically those held by consumers and traders, along with producer stocks that have not been reported to INSG. One of the recognized challenges of compiling statistics on stocks is the lack of information from these sources.

For LME stocks, strict specifications apply to nickel held or traded on the exchanges. The LME futures contracts are traded on the basis of nickel of 99.80% purity. Producers may place nickel on warrant (that is made available for sale) only in specified forms, which are; full plate, cut cathodes, pellets or briquettes. The LME system has over 350 recognized warehouses located around the world; currently nickel is warehoused in Belgium, Germany, Italy, Korea, Malaysia, The Netherlands, Singapore, Spain, Sweden, United Arab Emirates, the United Kingdom, and the United States. At the present time there are no LME recognized warehouses for nickel in China.

The LME nickel stocks provide a reference for worldwide trade in nickel; however, there are major nickel stocks held outside the LME system. Notably, there are increasingly important stocks being held in Shanghai.

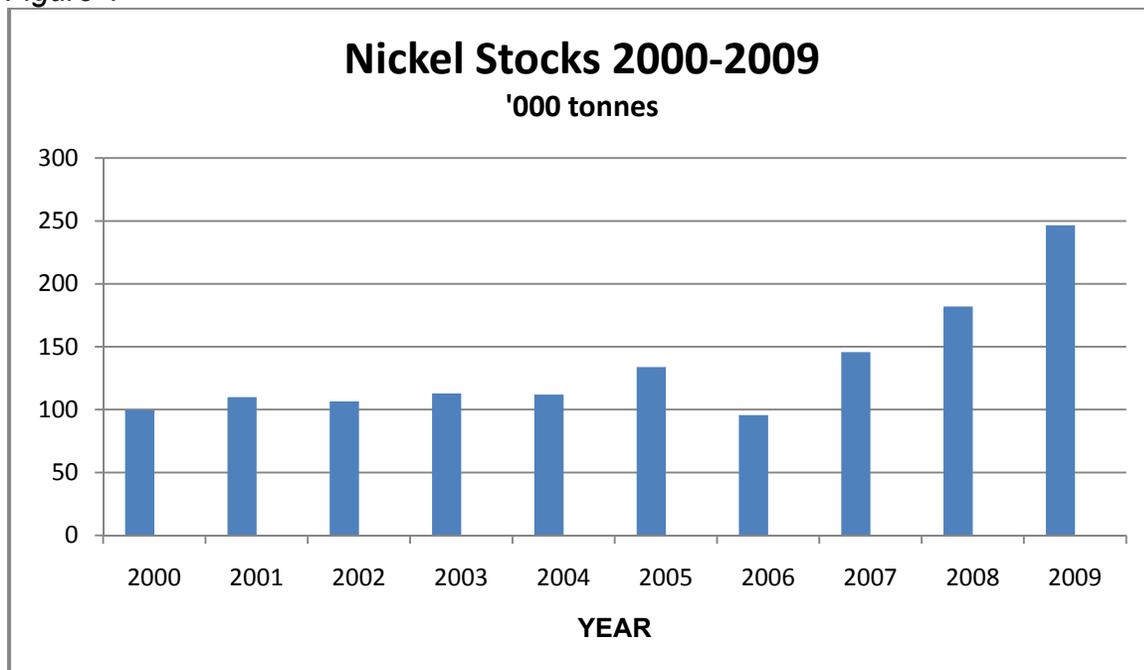
In looking at nickel stocks it should be kept in mind that about two-thirds of primary nickel units are used in stainless steel production. An estimated 40 to 45 percent of nickel units used in stainless steel production come from secondary sources such as scrap and such nickel units are not included in data on stocks.

Economic Background

One of the reasons for tracking stocks, and the movement of stock levels, is that this information can provide a good indication of whether the overall market is in surplus or deficit.

Stock levels are influenced by the economic cycle. Typically, during an economic recession stock levels can be expected to increase as weak demand results in the accumulation of unused material. Conversely, during an economic expansion, stocks may be drawn down as strong demand for materials depletes stockpiles. The change in stocks over the past ten years generally reflects this pattern as shown in Figure 1. While the global economy was growing in the middle of the decade stocks of nickel were fairly stable and declined to a low point in 2006. When the economic crisis began to emerge in 2008, stocks of nickel began to rise rapidly.

Figure 1



Source: INSG data

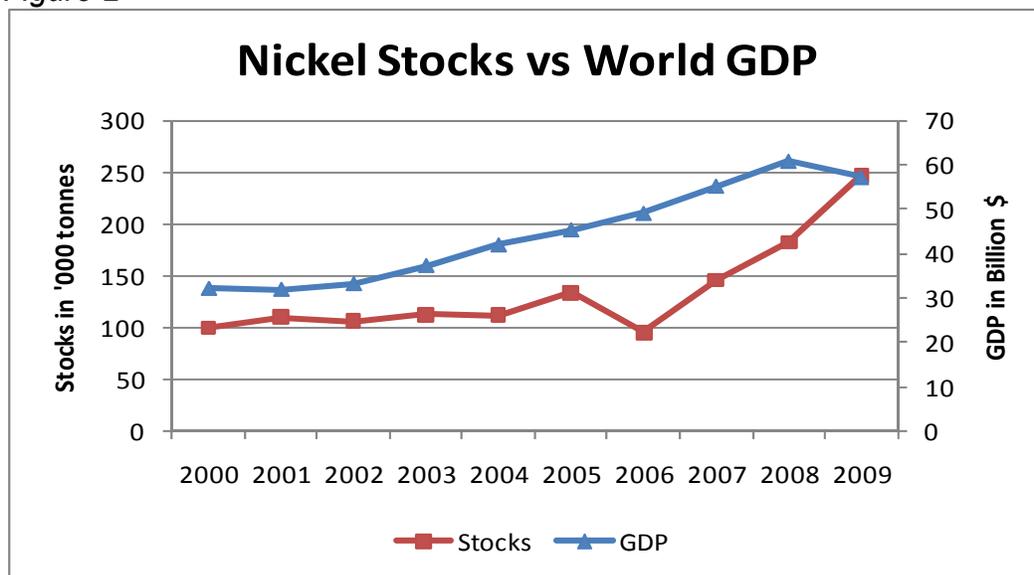
Stocks of metals, including nickel, typically rise as the economy slows as consumers cut back in usage while producers are slower to reduce production, causing inventories to rise. As the economy begins to recover, inventories will be drawn down, but this may occur slowly. In some cases as economic growth recovers and prices start to rise, there may be speculative restocking as consumers try to anticipate further price increases. Some observers have noted this pattern in the stainless steel sector in recent months where nickel prices are rising at the same time as stock levels are high and increasing.

Changes in interest rates can also have an impact on stock levels. When interest rates are low, as is the case currently, stakeholders all along the supply chain find it cheaper to hold stocks. In addition, investors may find it easier to finance their holdings and allow investors to make money on the contango. Thus, the current low interest rates may be facilitating the holding of nickel stocks. This could contribute to the upward trend seen in Figure 1.

In addition, economic growth and population growth are positively correlated with larger stocks of nickel. As Gross Domestic Product (GDP) increases there is a need for more nickel across the economy. This in turn leads to requirements for holding larger stocks all along the supply chain. Similarly, greater population is correlated with larger nickel stocks.

The upward trend in both World GDP and nickel stocks is shown in Figure 2, where IMF data on world GDP is plotted against INSG figures on stocks.

Figure 2



Sources: IMF and INSG

Recent Trends in Nickel Stocks

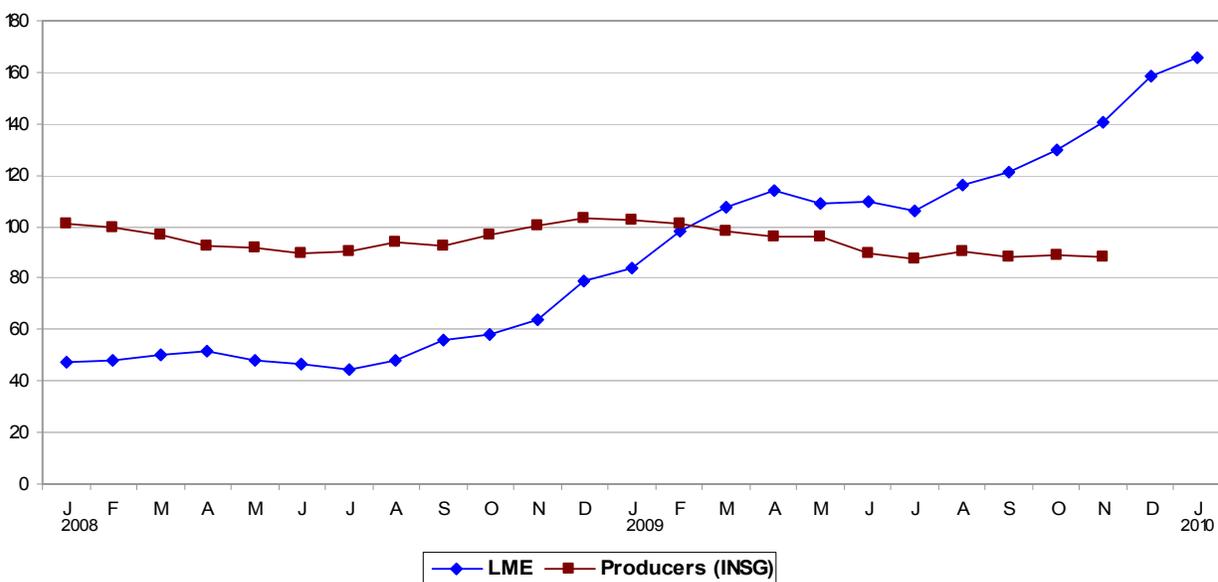
LME nickel stocks ended 2009 at their highest level of the year at 158,010 tonnes which was a 100% increase over levels at the end of 2008. The pattern of increasing stocks

for nickel was consistent with that of other major LME base metals. For the 12 months ending in December, stocks of aluminum were up 98%, copper up 48%, zinc up 93% and lead up 224%. Stocks held at the Shanghai Futures Exchange (SHFE) rose in a similar manner, with year end 2009 stocks up 435% for copper, 47% for aluminum and 175% for zinc.

For the first two months of 2010, LME data show that nickel stocks have continued their trend upwards, rising to 165,900 tonnes at the end of January and falling only slightly to 164,808 tonnes at the end of February. The slight decline in the February number is the first decline since July 2009. Figure 3 shows the trends in reported LME stocks and the producer stocks.

Figure 3

END OF MONTH NICKEL STOCKS (PRODUCERS AND LME)



Source: INSG

Chinese Stocks

With the rapid growth and transformation of the Chinese economy in the past decade there has been a significant change in the quantity of nickel used in China. Chinese production of primary nickel in calendar 2009 was 253,800 tonnes, an increase of 26.7 percent over the previous year. Production five years earlier, in 2004, was only 72,600 tonnes, meaning that nickel production jumped 350% in just five years. Similarly, consumption has surged in China, with total use of nickel reaching 442,500 tonnes in 2009, up from only 150,000 tonnes in 2004, an increase of 295 percent in five years. A large part of the growth in China has centered on stainless steel production. Growth in this area has been remarkable. In 2008 China was the source of 26.7% of world production of stainless steel, while in 2009 China was responsible for 36.6% of world

production, according to the International Stainless Steel Forum (ISSF). The growth of Chinese stainless steel production naturally leads to a need to hold nickel stocks.

Given this continuing expansion in production and use, stocks of nickel have naturally increased substantially in recent years. However, it is difficult to compile accurate data, as there is no official data published by the government on nickel inventories. In addition, the rapid growth of the economy means that data is quickly out of date.

Chinese sources confirm that nickel stocks are mainly held in the Shanghai area with smaller inventories in Guangdong and Tianjin. These stocks are mainly held in private warehouses, and mostly in the form of plate. The State Reserve Bureau of China, which manages government stockpiles, bought copper, aluminium, zinc, indium and titanium in 2009, however, there were no reports that it purchased nickel.

Nickel Stocks over the Longer Term

Over the longer term, nickel stocks have fluctuated widely as the global economy has swung from periods of growth to periods of recession. Figure 4 below compares the historical trends since 1980 in nickel, zinc, aluminium and copper stocks. It is immediately apparent that, relative to the other non-ferrous metals, nickel stocks have tended to be maintained at higher levels relative to weeks of consumption. It is also evident that while the current levels of nickel stocks are high, they are still below the peaks seen in the early 1980s and in the mid-1990s.

Figure 4

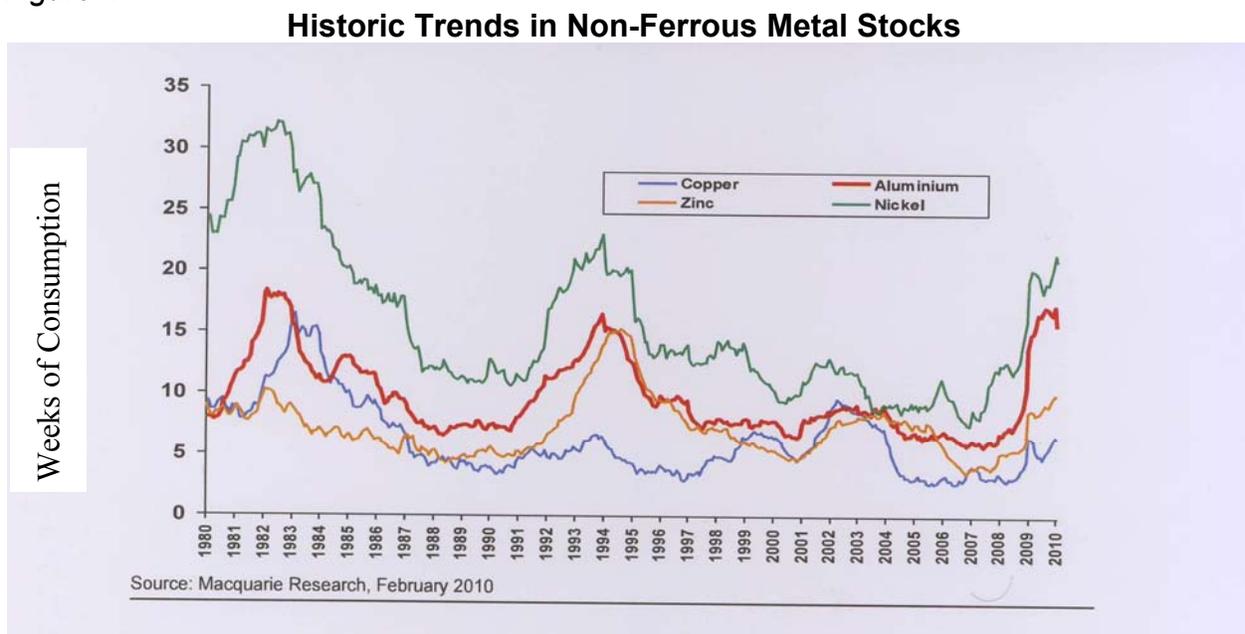


Figure 4 shows the trends for the four metals with the stocks expressed in weeks of consumption. The advantage of using weeks of consumption in calculating stock levels is that it links stock levels to the rate of consumption and builds in an adjustment for

growth of GDP. In the short term, the number of weeks of consumption that companies are willing to hold can be influenced by interest rates and the resulting cost of holding an inventory. In the longer term changes in the use of metals and manufacturing techniques may affect the number of weeks of consumption, for example the greater adoption of just-in-time manufacturing could reduce the need for holding stocks.

Conclusions

The increases in stock levels for nickel over the past year come at a time of economic recovery, and bring stocks to some of the highest levels in recent years. While the typical pattern is for prices and stock levels to move in opposite directions, for the past year or so both stocks and prices have been rising. However, in historic terms while stocks are high, they are not in excess of peak levels seen in the past, especially when calculated in terms of the rate of consumption. Historically, levels of nickel stocks in terms of weeks of consumption have tended to be higher than other non-ferrous metals such as zinc, copper and aluminium.

As industrial output, world population and per capita income and usage of nickel grow there is a concomitant need for holding larger stocks of nickel as well as a need to expand the number of warehouse locations. Thus, larger stock holding of nickel in China can be predicted as the country modernizes.

Comments or Questions

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March 2010