



From Boom to Bust and Back Again

A Monday Morning Musing from Mickey the Mercenary Geologist

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Late last fall, I was contacted by an old friend, geologist Bob Schafer. I have known Bob for over 25 years. If memory serves, he was working for US Borax out of Tucson, Arizona at the time we met thru a mutual acquaintance in about 1985. He is currently a muckety-muck with the Hunter-Dickinson Group and has had a distinguished career mostly in the business end of geology, i.e., project evaluations, acquisitions, business development, and finance. Like me, Bob is one busy guy who freely volunteers his time to further our business of exploration and mining. He is actively involved in our professional geology and mining organizations while I give back to my profession by mentoring young geologists and lay investors.

Bob presented an interesting proposition. He was organizing a seminar at PDAC on “Changing Exploration Models in the 21st Century” and asked me to speak. I gladly accepted the invitation and sincerely thank him for the opportunity. My talk was about supply and demand commodity cycles and how cyclical metals prices exert influence on the boom and bust mineral exploration business. I used my own career experiences to illustrate how exploration has evolved and changed over a 35-year period.



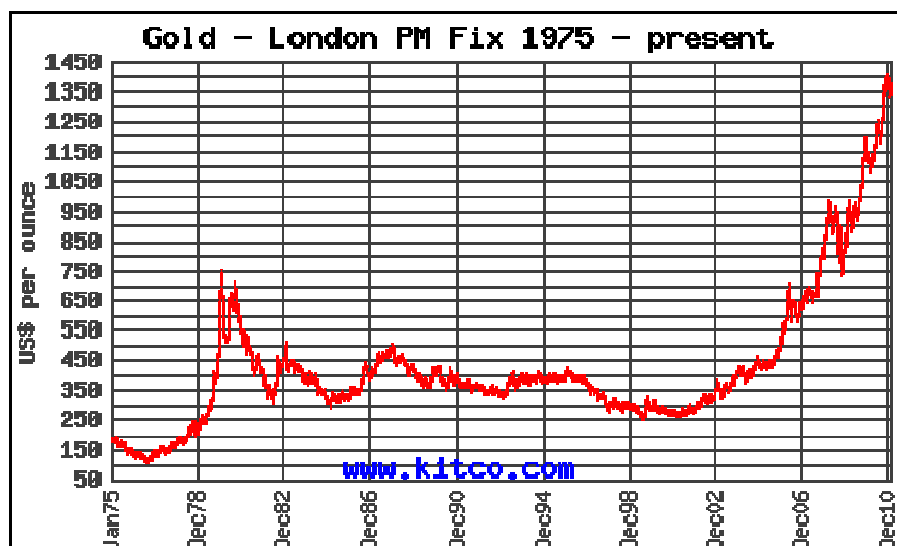
Two Old Friends at the PDAC

This musing is a written summary of my PDAC presentation. I encourage you to follow the power point presentation while you read as there are numerous charts and photos not included here. You may access it thru this link ([PDAC, Toronto, March 6, 2011](#)).

Mineral commodities trade in four to seven year boom and bust cycles within longer 20 to 30 year secular market trends. Since starting work as an economic geologist in the summer of 1976, I have experienced four years at the end of a 30 year secular bull market, a 23-year bear market, and seven years in an on-going bull market.

Within those longer commodity trends, I have witnessed six boom and bust cycles and have had eight different careers. I have performed many types of work in the 36 years since graduating from college and am particularly proud to say my job title has always been “Geologist”.

Mineral exploration is a discretionary expense and a tax write-off for mining companies or it is dependent on venture capital funds for the junior resource sector. Therefore, exploration expenditures are strongly influenced by current metals prices. The price of gold from 1975 to the present serves as a proxy for these boom and bust commodity cycles and world exploration activity:



The late 1970s was a time of high prices for base, precious, specialty, and energy metals. The exploration business was robust and driven by American and Canadian energy companies that had diversified into hard mineral exploration, development, and mining to disgorge windfall profits from high oil prices. Many major and mid-tier mining and exploration companies hired students and young geologists to do reconnaissance prospecting, mapping, and sampling and serve as “muscle” on claim staking, grid surveying, geophysical, and geochemical crews.

During this period or career number one, I was a Master’s degree student at the University of New Mexico and employed as a summer or temporary exploration geologist in the western USA by companies such as Conoco Metallics, Rio Algom, and Freeport Exploration.

A parabolic rise and fall of metals prices in 1979 -1980 gave way to a bust cycle that significantly contracted the mineral exploration industry from 1981 thru 1985. Oil companies with failed metals

divisions divested of or shut down exploration programs. Jobs were scarce and many young field geologists left the profession to become high school teachers, environmental scientists, or government bureaucrats.

I was fortunate to have landed a full-time job as career number two in early 1981 with an up and coming coal and uranium company, Santa Fe Pacific Mining. I was a hard rock geologist hired to drill targets developed during my Master's thesis in northern New Mexico and oversaw its first diamond drill hole. I weathered the bear market that followed by serving as project manager on a nearby volcanogenic massive sulfide test mine project thru 1984.

The period from 1986 to 1990 saw the building of mid-tier gold mining companies and a boom and bust of the juniors. For the first time, numerous Canadian geologists left cold climes with little outcrop and ventured into the western USA, particularly Nevada, to explore for gold deposits. A small Canadian company bought a modest mine on the Carlin Trend and developed into Barrick, now the world's largest gold miner. However, the stock market crash in 1987 devastated juniors' abilities to raise money and by 1990 the sector was moribund.

During part of this time I was employed by Santa Fe in Montana until the Vice President of Exploration, not so affectionately known as "The Sage of Sours" or "Old Scrotum Cheeks" went on one of his frequent rampages in August 1987. Luckily within 24 hours of getting fired, I commenced career number three by landing my first mapping job as a consultant. That started a very productive four years as a contract prospector-geologist for Newmont Mining in Nevada and Kennecott Exploration in Nevada, the southwest USA, and northern Mexico. Target metals were gold, silver, and copper and I became better-versed in sediment-hosted gold and porphyry-skarn copper deposits in world class districts. I also became conversational in Spanish, a skill that college classes in the late '70s failed to facilitate.

The junior sector recovered quickly in 1991 with discovery of world-class diamond mines in the Canadian Arctic, a yet-to-be developed copper-gold deposit in Venezuela, and a giant nickel deposit found by diamond explorers in Labrador in 1993. Soon juniors were looking for *the next big thing* in far-off jurisdictions as many countries opened their borders to foreign mining investment. The world became the field geologist's office and significant finds were made on various continents from 1991-1997, including a giant gold mine in northern Peru found by a junior and sold to the aforementioned Barrick.

My long time association and tenure with major American mining companies came to an end in late 1992. While the juniors were ramping up and going abroad, the miners were whittling down largely ineffective exploration staffs. From the mid-1970s on, thousands of geology man-years and hundreds of millions of dollars had produced little success outside the area of influence of existing mines in North America. Juniors were making the discoveries and had relegated the majors to buying them out.

Career number four began in mid-1992 when I chose to enter the junior resource sector. I devoted the next three years to mapping and prospecting on my own and vending prospects to Vancouver juniors. Combined with frequent contract mapping jobs in the western United States and northern Mexico, I made a comfortable living via my claims and an occasional finder's fee.

More importantly, this decision got me involved as a speculator in junior resource companies listed on the Vancouver Stock Exchange. I later developed a strong relationship with a Vancouver group that morphed into career number five with a stint as Chief Geologist in Peru. Reconnaissance exploration in the Andes in 1997 led to a drilling program in the gold belt of northern Peru in 1998.

However, the boom was stopped dead in its tracks by the Bre-X scandal and other gold scams in 1997 and a concomitant decline in commodities prices. From 1998 to 2003 we endured the mother of all bear

markets for economic geologists. Mining companies closed their doors, juniors could raise no money, and geologists could find no work. Most professionals left the business; many never returned.

Once again I was able to survive doing what I love to do: Geology. Although paid work was scarce in career number six, my basic education and broad experience led to consulting jobs evaluating the industrial mineral potential of a large private ranch in New Mexico, environmental geology work for a Santa Fe consulting firm, drilling-out a huge sand and gravel deposit, now a major mine, 60 km north of my home base of Albuquerque, New Mexico, and an occasional foray back to Peru. I used this time of sporadic work to learn more about industrial minerals, water rights, hydrocarbon contamination of aquifers, and inefficiencies inherent in regulatory bureaucracies.

However, the smart money always sees coming trends early and recognized the world's fundamental demand for commodities. In early 2002 contrarians were building new junior companies and I positioned to be involved. The discovery of another giant Peruvian gold mine by Barrick and rising gold prices were early catalysts, followed by growth in commodities demand from emerging market countries. A long-lived bull run in commodities began in mid-2003 and with exception of a year's hiatus during the global financial crisis, continues today.

The latest exploration boom also has been driven by new technical oversight regulations (43-101) resulting from the late '90s scandals. Most juniors have chosen to explore former mines in old districts and/or recycle deposits that failed in previous booms. They now are developing deposits and attempting to become miners as opposed to traditional roles in greenfields exploration. Major miners' roles have reverted to funding juniors thru equity positions, joint ventures, and strategic alliances.

Many geologists have been gainfully employed writing qualifying property reports and duplicating prior exploration work to confirm project data generated before year 2001. Engineers are in demand to produce qualified resource estimates and feasibility studies. A geologist or engineer must become certified as a "Qualified Person" (QP) in order to sign-off on data, reports, and company press releases.

In my opinion, the 43-101 technical oversight regulations cannot prevent all the scandals that have plagued our venture capital business for decades but they will prevent another catastrophic scam like Bre-X from happening again.

In career seven I was a for-hire prospector-mapper from 2003 to 2007 and Chief Geologist for a junior in Chile from 2005 to early 2008. During this time I made new outcrop ore-grade discoveries in central Peru (Pico Machay now in development), Lower Mac Ridge, northern Nevada (drilled and failed), La Corona de Cobre, northern Chile (scoping study in progress), and Toodoggone, northern British Columbia (drilled and failed).

I started career number eight in 2007 at the PDAC by re-inventing myself as an exploration and mining analyst. A short stint on part time retainer with newsletter writer Jay Taylor soon evolved into a full-time business as an independent analyst. [The Mercenary Geologist](#) was conceived at my first speaking engagement in fall 2007 and the website and newsletter were launched in late April 2008 just as the global economic crisis took shock world markets.

We have focused on the short term boom and bust cycles in hard commodities but longer term, 20-30 year trends are largely countercyclical to growth in financial markets. Post-World War II, there have been three major secular trends:

- 1950 to 1980 saw a period of industrial growth in large Western economies. In addition, the Cold War build-up of the US military-industrial complex led to high demand for metals. Financial markets were largely flat and the Dow Jones Average was range bound from 600 to 1000 from 1960-1980.
- A bear commodity trend began when metals prices collapsed in mid-1981 and continued until mid-2003. This bear market was inversely correlated with rise in the Dow Jones Average from 760 to a high of over 11,300 until the technology bubble collapsed from mid 2002 until early 2003.
- The current secular bull started with the rise in gold prices in mid-2003 and was soon followed by copper, the metal most closely associated with industrial activity, in early 2004. Since that time all industrial commodities have achieved record prices due to increased demand by the large emerging market countries of Brazil, India, Indonesia, and China (BIICs) and worldwide currency devaluations.

It is my opinion that we are now in the eighth year of a secular bull market in commodities. Worldwide, rural populations are migrating in mass to cities. The average citizen is demanding an increasing volume of “stuff” that we take for granted in the industrialized world.

However, as across-the-board record high prices become the norm for energy, industrial, and agricultural commodities, overheated economic growth in these emerging countries leads to inflation and increasingly higher costs for the basic human needs of food, water, clothing, and shelter.

In particular, food inflation is occurring worldwide and becoming a significant problem for poor countries and poor people. Food riots and resulting civil unrest were the catalysts that led to recent overthrows of long-lived authoritarian and oppressive regimes in Tunisia and Egypt. Turmoil continues to spread thru the Middle East with serious anti-government opposition in Libya and Bahrain.

If prices continue to rise rapidly, food shortages could spread to China, India, and/or Indonesia. These countries have the world’s first, second, and fourth largest populations largely consisting of impoverished rural and urban populations who spend a most of their yearly incomes on foodstuffs.

A secular bull market for energy, industrial, and agricultural commodities ensures that a vibrant mineral exploration industry will continue for the foreseeable future. However, because of the boom and bust nature of our business, we are faced with a critical shortage of experienced economic geologists and mining engineers. An entire generation is missing from the profession, with few practitioners between the late 20’s to the mid-late 40’s. It is my view that the bull market in commodities will last after my generation is retired or dead and gone.

There were no exploration or mining jobs for graduating students for most of the past 15-20 years and university science and engineering departments routinely eliminated positions of Economic Geologist and Mining Engineer. Now there are not enough qualified professionals to fill demand created by the current commodities boom. In my opinion, this acute shortage of skilled professionals will only exacerbate existing supply and demand issues. Without enough of the right people, it becomes increasingly difficult to find economic deposits and bring discoveries to development and profitable mining.

I expounded on this subject in a previous musing called “The Importance of Mentors” ([Mercenary Musing, September 14, 2009](#)). In my opinion, it is incumbent upon members of the Baby Boomer generation to select the best of the best and mentor those energetic, enthusiastic, up and coming, bright

young geologists and engineers who are destined to take our places in the exploration and mining business. We must meet ever-increasing demand in BIIC and small emerging countries as their growing middle class populations fuel a secular bull market in commodities.

Seek, find, and inspire a favorite young geologist or engineer to: See the World, Explore, Develop, and Create Wealth.

Let's help the Earth become a better place for all to live.

Ciao for now,

Mickey Fulp
Mercenary Geologist



The [Mercenary Geologist Michael S. "Mickey" Fulp](#) is a Certified Professional Geologist with a B.Sc. Earth Sciences with honor from the University of Tulsa, and M.Sc. Geology from the University of New Mexico. Mickey has over 30 years experience as an exploration geologist searching for economic deposits of base and precious metals, industrial minerals, uranium, coal, oil and gas, and water in North and South America, Europe, and Asia.

Mickey has worked for junior explorers, major mining companies, private companies, and investors as a consulting economic geologist for the past 23 years, specializing in geological mapping, property evaluation, and business development. In addition to Mickey's professional credentials and experience, he is high-altitude proficient, and is bilingual in English and Spanish. From 2003 to 2006, he made four outcrop ore discoveries in Peru, Nevada, Chile, and British Columbia.

Mickey is well-known throughout the mining and exploration community due to his ongoing work as an analyst, writer, and speaker.

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