

How to Profit from the Imbalance in Platinum and Zinc Inventories: Matthew O'Keefe

TICKERS: CZN; CZICF, CFB.TSX, FOM, , PTM; PLG, NKL; PNIKD; P94P, RTH, TV; TREVF

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Now is the moment to take a hard look at the state of supply for zinc and platinum, says Matthew O'Keefe of Mackie Research Capital Corporation. In an exclusive interview with *The Gold Report*, O'Keefe explains how market fundamentals are about to pop up some serious game changers in this space. International demand for zinc and the platinum group metals is booming, but the global supply is about *to seriously* contract. Well-financed mining corporations will celebrate, while others miss the party.

COMPANIES MENTIONED : CANADIAN ZINC CORPORATION : CHIEFTAIN METALS INC. : **FORAN MINING CORP.** : IVANPLATS LTD. : **PLATINUM GROUP METALS LTD.** : **PROPHECY PLATINUM CORP.** : RATHDOWNEY RESOURCES LTD. : TREVALI MINING CORP.

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- : **ALDERON IRON ORE CORP.**
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- : **ORVANA MINERALS CORP.**
- : **REVETT MINERALS INC.**

The Gold Report: What is the current state of demand in the international zinc market?

Matthew O'Keefe: As a base metal, demand for zinc mirrors economic growth. When industrial growth is slow, demand for zinc is slow. The zinc supply is currently about 13.2 million tons (Mt) per year versus demand of about 13 Mt per year. Due to the current gap between supply and demand, inventories are high.

But things are going to change pretty dramatically during the next year or so. In Q1/13, the first of a number of large zinc mines is slated to close down.

TGR: Why?

MO'K: Zinc mines tend to be smaller than gold and copper mines with fewer very large producers. But early next year, the first of several large mines will close; the Brunswick No. 12 mine owned by Xstrata Plc (XTA:LSE) with production of about 275,000 tons (275 Kt) a year.

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Later in the year, another large one, Xstrata's Perseverance mine in Quebec, is scheduled to shut down. Along with a few smaller operations, the market will lose more than 0.5 Mt next year alone, which is a big chunk of production. That will start the trend of depleting zinc inventories. In 2014, more large mines will close: Lisheen in Ireland, and

Iscaycruz in Peru. These are structural changes in the industry because there are no large operations to replace them. The global decline in inventory should perk-up the price of zinc.

TGR: Why are these mines scheduled to close?

MO'K: These mines are at the end of their lives. Zinc mines, like all mines, have finite life spans. But they also tend to be fairly discrete deposits compared to the large porphyry deposits that dominate the copper industry that can often be expanded to capture lower grades. But the issue is more one of timing as the closure of several large zinc properties is occurring close to the same time. Usually, closures are offset by the development of new mines, but there is only one new large producer starting up: the Perkoa mine in Burkina Faso with about 90 Kt per year. That's less than half of what the larger mines are producing, highlighting the looming supply-demand imbalance.

TGR: With gold mines, as technology improves and the price of gold goes up, you can access tailings and basically re-mine the property.

MO'K: There have not been major changes in the mining technology for zinc. And zinc has not enjoyed the sustained price rise of gold or copper. Therefore, not much money has been thrown at improving zinc mining technology.

TGR: What is the primary use of zinc?

MO'K: Zinc is mainly used for galvanizing steel. It's used in brass and some other manufacturing so it's a true base metal used almost entirely for industrial purposes. Underneath that nice paint job on your car, it is the galvanized steel that keeps it from rusting. It's a major metal in construction. All of the high rises, and many houses, use galvanized steel studs. Duct work is galvanized steel. Growing economies require growing supplies of zinc.

TGR: What regions are rich in zinc?

MO'K: Zinc is globally available, but most zinc production comes out of China, South America, Australia and Canada.

TGR: How will the imbalance between supply and demand affect the price of zinc?

MO'K: A supply shortage should drive the price of zinc up. And with it, capital will flow to bring more mines into production. It's a typical exploration cycle. When prices are high, there's money available to explore and develop new mines. When prices are low, belts tighten and there is not a lot of extra money allocated to exploration or development. Losing the big producing mines means that there will be more demand for zinc to close the supply gap. A number of junior projects are well staged to succeed, if they get funding.

TGR: Such as?

MO'K: I recently screened North America-listed zinc names looking for companies positioned to take advantage of an increased zinc price balanced with the window of reduced supply. They all have relatively short time frames to production and good exposure to the zinc market.

Trevali Mining Corp. (TV:TSX; TREVF:OTCQX) is a near-term producer with two assets and it will be the only real pure play zinc producer around. It has almost completed building the Santander mine in Peru with partner Glencore International Plc (GLEN:LSE; 0805:SEHK) and is scheduled to commence production in early 2013. In mid-2013, if all goes well, production will commence at Trevali's Halfmile mine in New Brunswick. That is a much larger operation, with a significant amount of upside in the area. It will be the cash-flowing zinc name—the next Breakwater Resources or Farallon Mining story.

In the development stage there is **Canadian Zinc Corporation (CZN:TSX; CZICF:OTCQB)**, which is awaiting final permitting for its Prairie Creek deposit in the Northwest Territories. Prairie Creek was made famous by the Hunt brothers, who first developed and built it back in the 1980s for its significant silver byproduct. By 2015, it could be a large zinc producer exploiting a very high-grade deposit with a significant silver byproduct.

Chieftain Metals Inc. (CFB.TSX) is another developer but not as well known. It has recently signed a memorandum of understanding (MOU) on project financing for its Tulsequah Chief project in northern British Columbia. Chieftain is only about one-third zinc levered, so you don't get as much torque in it but the copper and gold co-products are also quite attractive.

Moving to advanced explorers I cover **Foran Mining Corp. (FOM:TSX.V)**. Foran is planning to complete a preliminary economic assessment (PEA) on its McIlvenna Bay project in Saskatchewan over the next six to eight months, which constitutes a major derisking exercise. Foran's project could be a perfect fit for HudBay Mining (HBM:TSX; HBM:NYSE) and its complex in Flin Flon, Manitoba, about 60 kilometers away, and could be more of a takeover target than some of the others on this list. Foran will be an interesting one to watch.

Rathdowney Resources Ltd. (RTH:TSX.V) is another exciting explorer with its Olza project in the zinc district of southern Poland. It's earlier stage, but has the potential to leapfrog ahead with a deal to access the nearby Pomorzany mill that is running out of ore. In the meantime, it continues to add to drill around its 20 Mt zinc-lead resource, which has the potential to grow significantly in terms of tons and grade.

TGR: You also cover platinum. What is the story there with supply and demand?

MO'K: Platinum, palladium and rhodium are the principal platinum group metals (PGMs) or platinum group elements (PGEs). Platinum is mainly used for making catalytic converters for reducing noxious fumes from cars. The automotive market is a bit flat in North America and Europe, but a rapidly growing middle class has created huge demand for cars in Brazil, China and India. Because environmental standards in these countries are going up, new cars are being fitted with catalytic converters, which use 3–7 grams platinum and palladium.

"In South Africa, there have been a couple of success stories in discovering new platinum deposits outside of the traditional Western Bushveld Complex."

The supply side for platinum is fairly fixed. There is some production in North America and other places. But 85% of platinum comes from South Africa. Most palladium is mined in Russia. There is a need to find additional supply elsewhere because South Africa and Russia pose various types of obstacles for foreign investors.

In South Africa, foreign firms are required to find a black economic empowerment partner, a "BEE" partner, to cover 26% ownership interests. The agreement includes commitments for management control, employment equity skills, socioeconomic development—important steps but BEE is very well supported in South Africa so it's not an obstacle any more. The real issue for platinum and palladium explorers is access to good ground. The bulk of the metal comes out of the Bushveld Complex in South Africa, and that real estate is mostly controlled by three majors—Anglo Platinum Group (AMS:JSE), Lonmin Plc (LMNIY:OTCBB) and Impala Platinum Holdings Ltd. (IMP:JSE)—but a few explorers have managed to squeeze into the Bushveld Complex. And in South Africa, there have been a couple of success stories in discovering new platinum deposits outside of the traditional Western Bushveld Complex. Some pretty interesting deposits, possible game changers, have turned up in the Northern Bushveld.

TGR: Do you have names?

MO'K: On the production side, [Platinum Group Metals Ltd. \(PTM:TSX; PLG:NYSE.MKT\)](#) has a joint venture in the Western Bushveld, and its project is in one of the last, best areas to mine because it's relatively shallow. To put this in context, the bigger companies are sinking very large, very expensive, very deep shafts spending \$1.5 billion (B) to build these challenging projects. Platinum Group Metals, on the other hand, has shallow mineral resources, which mean simple ramps and declines, lower capital costs—about \$506 million—and relatively short timeframe to production. The company should be finished with construction on its Western Bushveld project next year.

"The recent disruptions in South Africa have brought to the fore the fact that South Africa is our major supplier of PGMs; extracting that supply is getting more challenging and more expensive."

On the exploration side, Platinum Group Metals has discovered a new platinum-palladium and gold deposit in the North Limb of the Bushveld—called the Waterberg—which is thicker than the traditional Bushveld. The biggest problem with the Western Bushveld is that it's a very thin zone—only about 4–5 feet (ft) thick. That means operations have to employ a lot of manual labor, a lot of guys chipping away at it, crouched over, in very harsh conditions. The North Limb deposit is 10–20 ft thick. These greater thicknesses are suitable for mechanized mining, which is much more efficient. It also means fewer potential labor issues and lower operating costs. This deposit could be a game changer in a country where labor issues are becoming more and more critical.

TGR: What is the life span of those mines likely to be?

MO'K: In the Bushveld, the life span is related to PGM prices. At higher prices, a miner can afford to go deeper. There is a lot of PGM resource in South Africa. The question is economics. A lot of the platinum mines are not economically viable at present; they cannot support new development. Some of the majors are shelving new

development projects. Prices need to rise. There is a lot of cost pressure in South Africa on labor and capital costs. Mines deeper than 1,500 meters are just too costly.

TGR: Why is South Africa so blessed with platinum?

MO'K: Geology. The Bushveld Complex is a very special, layered intrusion in the 2-billion-year-old geological basin. It has concentrated platinum, palladium, rhodium and some other metals within a very thin five-foot zone. A century ago, it was mined from the surface. Miners have been following the sheet down dip ever since. But the deeper the mine, the higher the costs.

TGR: Are we looking at a constriction in the supply of platinum?

MO'K: Yes, I would say so because there's nothing like the Bushveld anywhere else in the world. The PGM deposits that have been found outside of South Africa don't have the same amount of platinum, they're mostly palladium, and they're nowhere near as big. There are some other platinum deposits around the world, but, again, it's a cost issue. We really need to see platinum sustained over \$2,000/ounce (oz) to support new development from these lower-grade deposits.

TGR: Will price rise as supply contracts?

MO'K: I think so. Some of the South African mines are closing and some have been producing at a loss for quite some time. You can almost hear a board of directors saying to itself, "We can spend \$1.5B to develop another one of these mines, which we know is going to be marginal if the price stays below \$2,000/oz. Why not look at the new discoveries in the Northern Bushveld? It is amenable to mechanized mining and contains tens of millions of ounces. Maybe we should move toward a mechanized, more modern-type mining."

TGR: Are labor costs going to continue to increase?

MO'K: Yes. In South Africa, there have been violent incidents with striking platinum workers. They want higher pay. There have been regular increases in pay over the last few years, but it's become more and more acute. The issue is not going to go away. In fact, it has recently spread to the gold, iron ore and trucking industries.

TGR: Can rising labor costs be absorbed by price increases?

MO'K: They should—prices have to rise. When the strikes started happening in South Africa, the price rebounded quite strongly, because mines were losing production. There is greater awareness now that there is a supply constraint, and that we are relying on South Africa for the bulk of our platinum production.

TGR: Are there any other juniors outside of South Africa?

MO'K: [Prophecy Platinum Corp.](#) (NKL:TSX.V; PNIKD:OTCPK; P94P:FSE) is a North America-based company with a copper-nickel-platinum-palladium discovery in the Yukon. Originally, it was a high-grade, small resource that had been around for a while. Prophecy took a new look at the drill data, and updated the resource to include a larger halo of "disseminated mineralization," which is lower grade, but large and continuous. This year, the Prophecy completed a PEA, which shows a very robust project potential. It's still in the early days, but potential PGM production is a couple hundred thousand ounces a year, which is a sizable supply. It is continuing to explore and develop that deposit.

TGR: Given that the two metals that we've talked about—zinc and platinum—appear to be on a trajectory of diminishing supply, are the majors in this field going to be scooping up prospects?

MO'K: With zinc, the Glencore/Xstrata merger is happening right now. Those are super seniors and the merger should add more discipline to the sector. But I expect takeovers, rather than mergers, in the junior and middle space, because that's what we've seen in the past. There aren't many names in zinc, and what seems to happen is that after a good zinc asset is derisked it is promptly scooped up by Xstrata, Glencore or Nyrstar (NYR:EN Brussels). We saw that in 2011 with Breakwater and Farallon. They were small producers and both got scooped up by Nyrstar. The big guys want to lock in production. They own smelters, and they want to guarantee supply of concentrate.

Trevali will be a prime candidate for a takeover when it's ramped up toward 200 Kt/year. Perhaps it's the new Breakwater. Foran seems an excellent fit for HudBay. And there are new players on the scene. China CAMC Engineering Co. Ltd., which is a Chinese company, acquired Procon Holdings Inc. as a Canadian subsidiary and through Procon signed the MOU with Chieftain to acquire up to 30% of the company and its projects, which might just be the beginning. Rathdowney is well positioned in the Olza zinc district to consolidate some existing mining assets or be consolidated for its growing resource and land package.

Then, on the PGM side, you have to look at Platinum Group Metals and its excellent prospects. There is an overhang on the stock until the debt gets finalized but it should still be very attractive for its Waterberg discovery. Either it can sell that mine off or get acquired by a larger company that wants the new production and access to the game-changing region.

Then there is [Ivanplats Ltd.](#), a private company formed by Robert Friedland. It is slated for an initial public offering next month. It has several assets including a PGM deposit in the Northern Bushveld, which is very similar to Platinum Group Metals' Waterberg discovery. When the IPO makes that valuation public, we will have a better data point on the actual value of the Waterberg discovery.

TGR: Any final thoughts?

MO'K: Platinum and palladium are timely right now. Prices are running up, for good reasons. The recent disruptions in South Africa have brought to the fore the fact that South Africa is our major supplier of PGMs; extracting that supply is getting more challenging and more expensive. Prices have to go up in response.

We're early on zinc. The snapshot of the zinc market today looks as if it's in oversupply and there's a lot of inventory so it's not that exciting. But watch it at the end of Q1/13 when Brunswick No. 12 closes. This should start a steady drop in inventories and rise in prices.

TCR: Matthew, glad to have you join us today.

MO'K: It's my pleasure.

Matthew O'Keefe is managing director, mining research at Mackie Research Capital Corporation. O'Keefe was selected as the #1 mining analyst in the Wall Street Journal's 2010 'Best on the Street' survey. O'Keefe has 11 years of investment experience, and began his career as an exploration geologist with a number of major and junior mining companies, spending five years in the field before becoming a mining specialist for Griffiths McBurney & Partners. Most recently, O'Keefe was a mining analyst with Cormark Securities. O'Keefe received a Bachelor of Science in geology from the University of Toronto, a Master of Science in geology from Queen's University in Kingston and an MBA from the Richard Ivey School of Business at the University of Western Ontario.

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