

Who is Spending What, and Where? Recent Trends in Exploration

Jason Goulden

Metals Economics Group

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Through this presentation I'd like to discuss some of the recent trends that we've seen during the current exploration cycle, then take a quick look at what we expect to see this year.

But just before we get to the figures I'd like to give you a brief introduction to Metals Economics Group....

Metals Economics Group

- Founded in 1981
- Global View of the Industry
- Strategic Intelligence
- Competitor Intelligence



MEG has been the trusted source of accurate and comprehensive information on the mining industry since 1981.

We have a global view of the industry and provide strategic and competitor intelligence to our clients through our various products and services.

Corporate Exploration Strategies

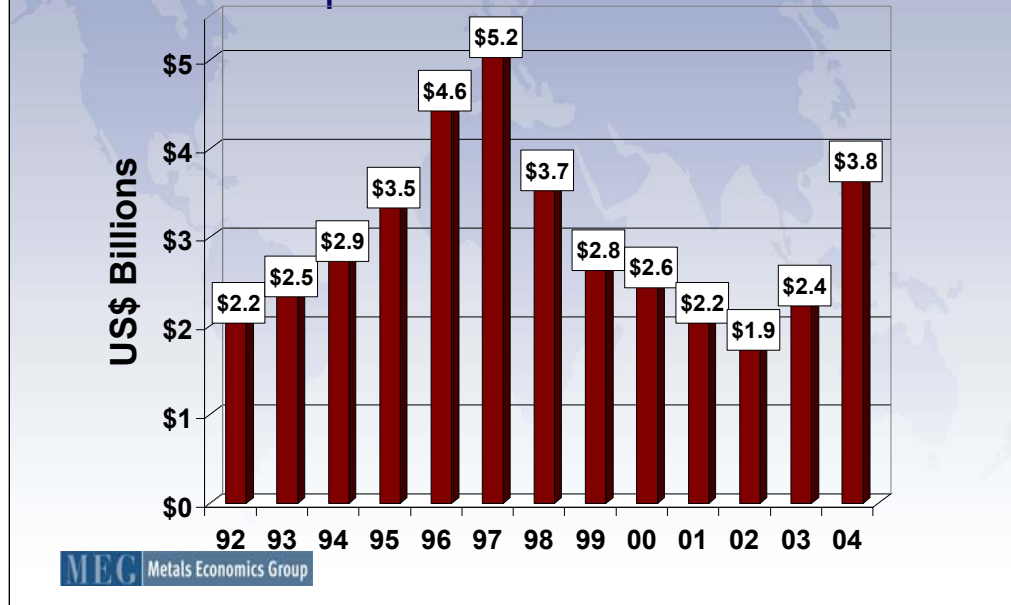
Research Methodology

- Global nonferrous exploration budgets
- Detailed breakdown by Target, Location, and Stage of Development
- Companies spending US\$100,000 or more
- Each company is interviewed
- Analysis covers 90%-95% of global expenditures



The figures I'm going to show you today come primarily from our yearly *Corporate Exploration Strategies* study, which looks in detail at the nonferrous exploration plans of companies budgeting over US\$100,000 yearly. In 2004, our study included the budgets of more than 1,100 companies, all of whom we interviewed directly. In any given year we estimate our study covers about 90%-95% of commercially oriented worldwide budgets, with the rest accounted for by unreported private companies and groups spending under \$100,000. We estimate the total budget for 2004 at \$3.8 billion.

Estimated Global Nonferrous Exploration 1992-2004



- Our estimate of worldwide nonferrous exploration budgets steadily increased through the early 1990s to a crest of \$5.2 billion in 1997, before falling for five straight years to a 12-year low of \$1.9 billion in 2002—an overall decline of more than 63%. Since that time, our estimate has risen for two straight years, rebounding to a level just slightly above our 1998 estimate. The \$3.8 billion estimated total for 2004 is up 58% from 2003 and is double the total seen at the bottom of the cycle in 2002.

- In addition to the obvious influence of metals price fluctuations during the recent exploration cycle, several other factors have contributed to the decline and subsequent rebound from the 1997 high.

Factors in the Recent Cycle

The Decline:

- Late 90's— Majors began to view explo as “wealth-destroying”
- Built on an existing explo transfer to juniors from mid-90s
- Loss of available risk capital
- Shift from explo to acquisitions for growth

The Recovery:

- Increased spending by majors
- Reduced “high-level” consolidation
- Increased availability of capital to juniors



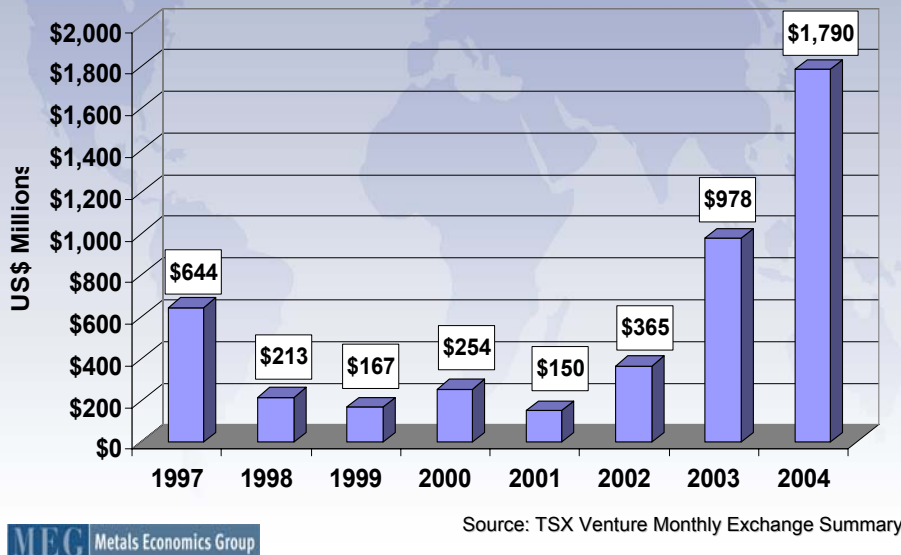
In the late 90s, poor historical returns from the industry were dissected and exploration was widely analyzed to be “wealth-destroying”. As a result, many of the senior producers deeply cut exploration in favor of an increased reliance on the junior companies to unearth new discoveries.

The simultaneous loss of risk capital available to the juniors as a result of the decline in metals prices, the Bre-X scandal, and the flight of investors to the dot.com sector substantially contributed to the considerable decline in worldwide exploration budgets in the five years following the peak.

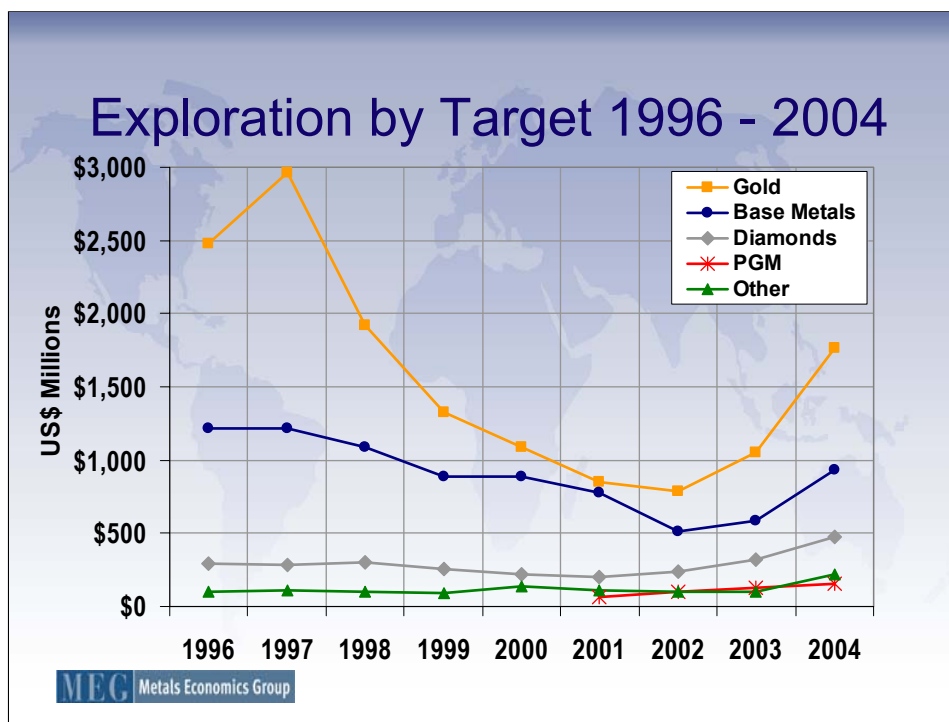
In addition, a subsequent shift from exploration to acquisitions as a growth strategy by several senior companies negatively affected worldwide exploration spending during this time - and I will come back to that in more detail later.

The initial recovery from the bottom of the cycle in 2002 was in large part due to the combination of increased spending by the majors as they recognized the dearth of new projects moving up the pipeline, a reduction in the negative influence of industry consolidation on exploration, and increased spending by junior companies as the gold price began its recovery. As prices for other commodities strengthened in late 2003 and early 2004, continued budget increases by most major companies and an increase in available capital to the juniors continued to push worldwide exploration spending higher in 2004. Exploration budgets by juniors more than doubled in 2004, and accounted for almost 60% of the worldwide budget increase last year.

Canadian Junior Mining Financings 1997-2004



- As an example of the increased interest in junior companies over the past few years, this slide shows the amount of funding raised by junior mining companies listed on the TSX Venture Exchange since 1997.
- Although financings by Canadian juniors are being accelerated by the super flow-through share program, we see similar trends in financings by companies listed on the Australian Stock Exchange and on London's AIM.
- The current revival of junior exploration spending is largely being driven by commodity prices, as the recovery in prices has substantially improved investors' sentiment toward the mining industry. The collapse of the dot.com market at the beginning of this period has also contributed, freeing up additional capital and sentiment that had flowed away from mining. The resulting increased interest in the sector has allowed most juniors to raise the funds necessary to restart exploration and has encouraged a flurry of IPO activity over the past 18-24 months.



- Now that we've taken a look at the broader picture, let's have a look at how the money has been budgeted in recent years. When we break down the budgets by target, we see that allocations for each target have generally followed the overall budget trend during the current cycle.

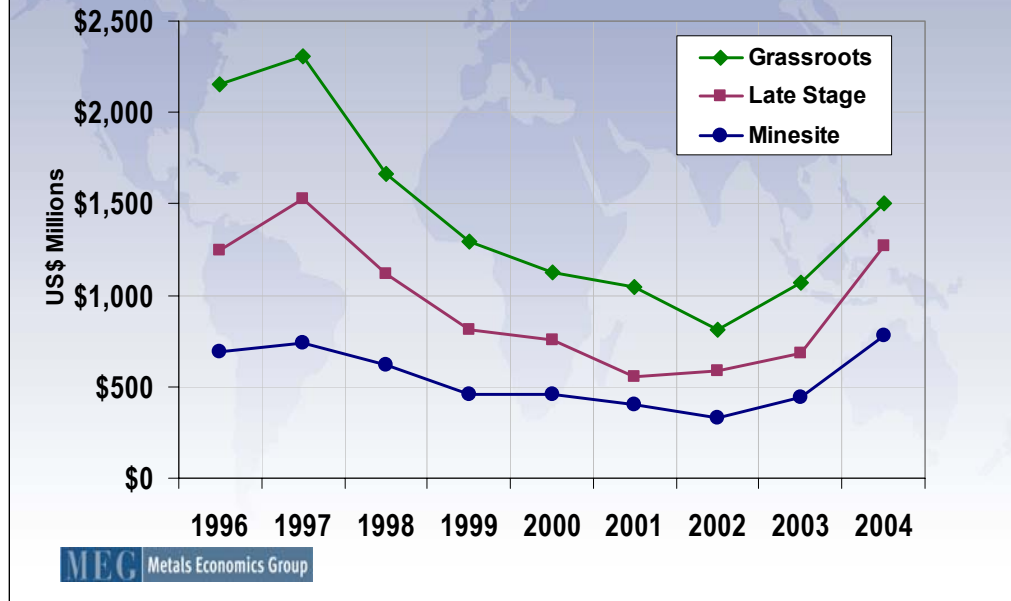
- Gold has consistently attracted more exploration expenditure than any other metal since we started this series of studies in 1989, and in 2004 it returned to account for more than half of worldwide allocations after four consecutive years of attracting less than 50% of the overall total. Despite the sharp rebound in gold budgets since 2002, the gold-related total is still 40% less than the peak in 1997, when gold attracted almost \$3 billion in allocations and represented 65% of overall spending.

- Base metals allocations have also recovered well over the past two years led by a sharp rise in copper budgets and to a lesser extent nickel, although the dollar amount devoted to base metals exploration in 2004 was still 23% below the peak of \$1.2 billion in 1997.

- Diamond exploration has remained relatively stable over the period, supported by strong early-stage exploration in northern Canada, and began its recovery in 2002, a year earlier than the worldwide trend. Substantial increases in dollar terms over the past two years have lifted global diamond exploration to its highest level since we initiated this series of studies.

- Although we began to split PGM exploration out of our other targets category in 2001, the combined PGM and other targets budget, which primarily includes silver, mineral sands, cobalt, and industrial minerals, has been slowly increasing since 1999 mostly due to increased PGM spending and, to a lesser extent, silver over the past two years.

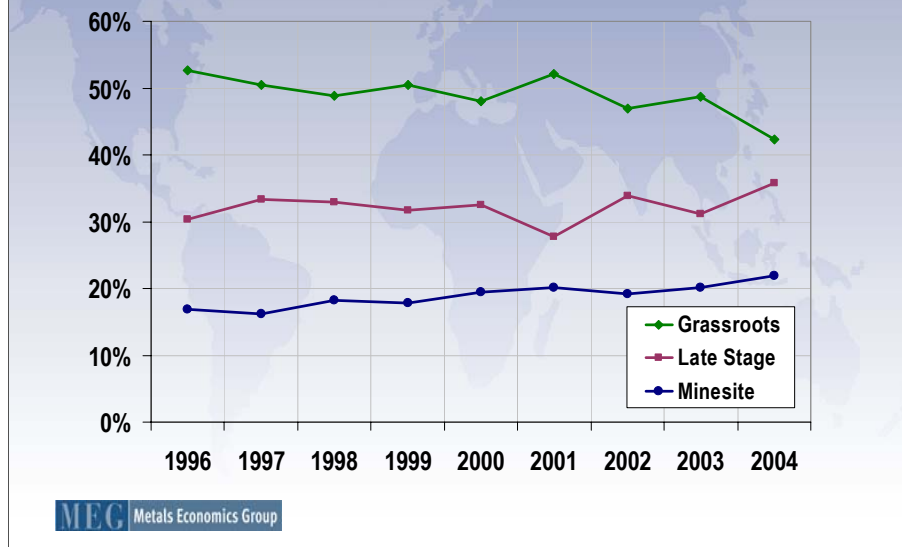
Exploration by Stage 1996 - 2004



•When we look at the break down of budgets by stage of development we see that allocations for all three stages over the past decade have also generally tracked the overall worldwide trend in dollars term, and, as would be expected on the upward leg of an exploration cycle, allocations for all three stages continued to rise in 2004.

•What is surprising, however, is that the 41% year-on-year increase in grassroots budgets in 2004 did not kept pace with the 86% and 81% increases seen in late-stage and minesite allocations, respectively. While we did anticipate significant increases in late-stage and minesite work last year, the scale at which these budgets increased relative to grassroots work was unexpected.

Exploration by Stage 1996 - 2004



- When we look at allocations for each stage of development as a percentage of the worldwide total for each year, the proportion of exploration funds devoted to each stage appears to have remained fairly stable over the period.

- Looking a little more closely we see that allocations for minesite work have slowly crept up, from a low of about 16% in 1997 to a recent high of almost 22% last year, while grassroots and late-stage allocations have inversely vacillated over the same time frame, with grassroots currently at a recent proportional low and late stage at a high.

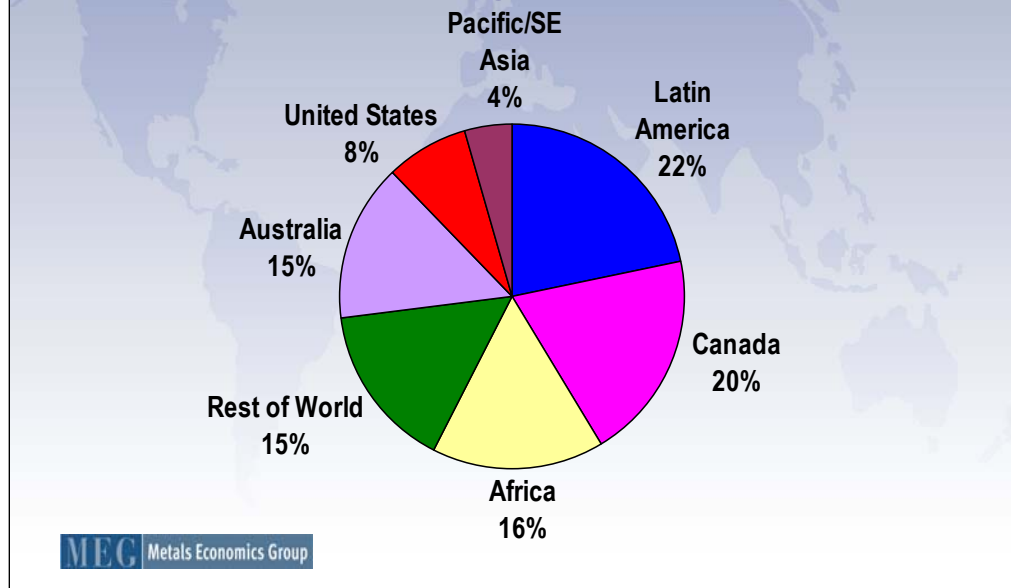
- The increased focus on minesite exploration is largely attributable to many of the major companies spending more on near-mine exploration in an effort to replace and increase reserves, and to develop new reserves more quickly and cheaply by using existing infrastructure in an effort to support and increase production rates.

- Companies at all levels of the industry, however, are focusing on their existing later-stage projects, encouraged by strong metals prices and other global factors.

- In addition, a number of known, previously uneconomic late-stage projects that had been dormant during the bottom of the commodities price cycle are now being reevaluated in the light of today's higher price environment with the hopes of achieving near-term development. Many of these projects were originally abandoned because of high development and production costs, often due to a combination of low grades, complicated metallurgy, and other technical obstacles. The danger is that if these projects are developed based solely on strong metals prices, they will likely be at the high end of the cost curve and remain vulnerable to the eventual downside of the price cycle.

- The lesser recovery in grassroots exploration comes on the heels of deep cuts from 1998 through 2002, which has significantly contributed to the generally acknowledged decline in discovery rates. While a lack of major new discoveries entering the pipeline is unlikely to affect global production in the short term, the discovery and development of new projects in the near future are essential for the long-term health of the industry. In addition, without a string of significant new exploration successes, it may become increasingly difficult for companies to convince investors to continue to finance grassroots spending.

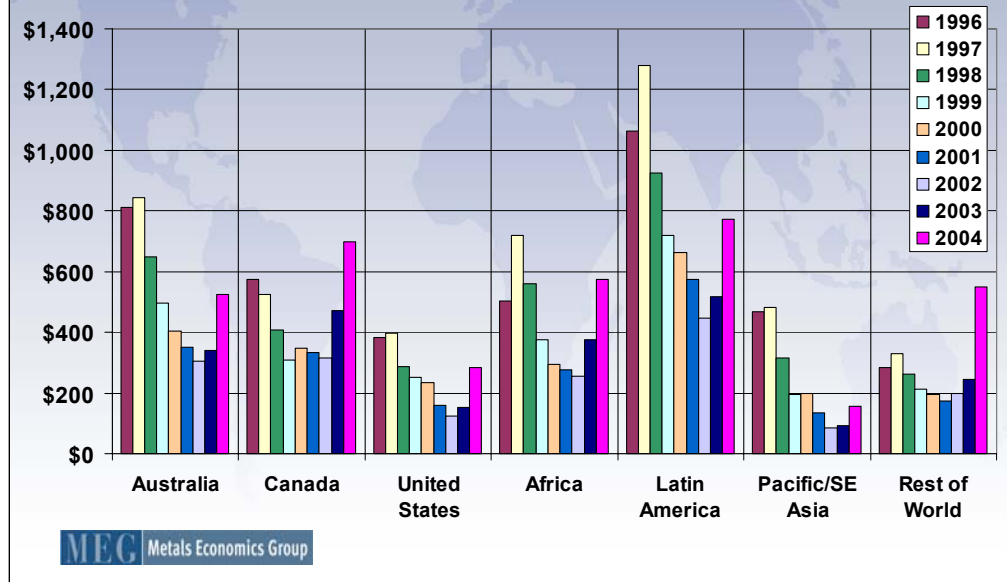
2004 Worldwide Exploration by Region



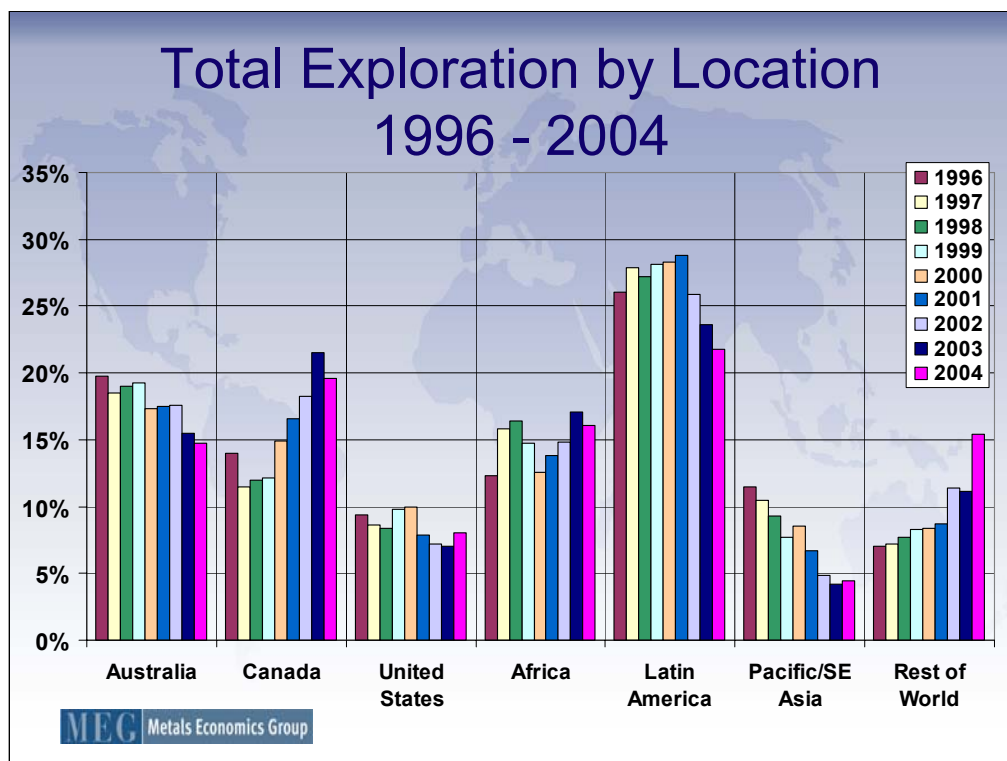
•Turning now to where the money is being budgeted, this slide shows the regional distribution of 2004 exploration budgets.

•Latin America continues to be the most popular destination for exploration, increasing its lead over second-place Canada to \$76 million last year from the \$47 million margin in 2003. Africa remains in third place by region, having surpassed Australia for the first time in 2003. A substantial increase in allocations in our rest-of-world region, led by sharp increases in Russia, Mongolia, and China, have outstripped a more moderate recovery in Australian spending, moving it to fourth place by region with Australia slipping to fifth. Before beginning its gradual slide in recent years, Australia had firmly held second place by region from 1994 to 2001, when Canada displaced it for the first time. The United States and the Pacific/Southeast Asia region remain in sixth and seventh place, respectively, positions they have held since 2001.

Total Exploration by Region 1996 – 2004 (US\$ Millions)



- Although this slide is a little difficult to look at it shows the amount budgeted in each region since 1996, and what we see is that each of our regions has essentially followed the worldwide trend to differing extents over the period in dollar terms.



- But if we look at the percent allocated to each region for each year, we can see where the focus has shifted over the period.

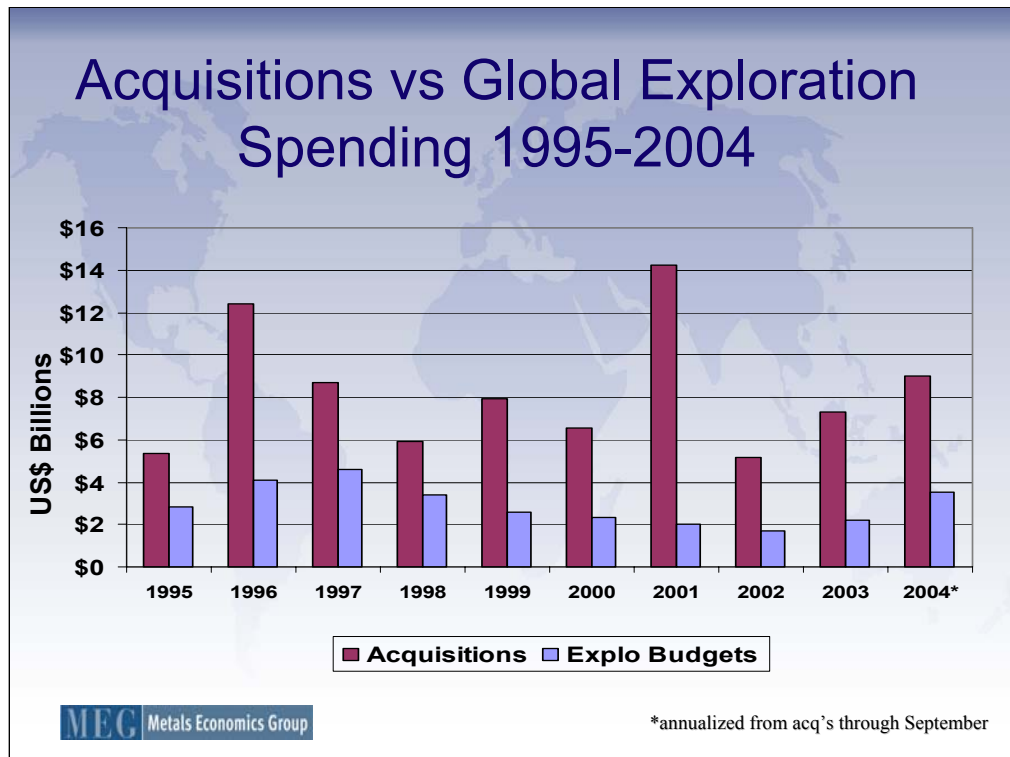
- The most notable changes over this period are the decline in Australian exploration, largely due to stalled domestic spending by Australian companies, and the sharp decline in the Pacific/Southeast Asia region as companies continue to be wary of getting involved in the political and social unrest, anti-mining violence, and uncertainty of tenure that has plagued the region.

- We have also seen a fairly dramatic shift in focus to exploration in Canada, aided by increased diamond, gold, and PGM exploration by both domestic and overseas companies and of course accelerated by the introduction of the “super flow-through” share program. As well, strong growth in our rest-of-world region reflects interest in new underexplored areas that are opening up, such as the Former Soviet Union and Asia.



- To give you a further sense of where things currently stand, this slide shows the distribution of exploration budgets for the top ten countries in 2004, which together have a combined budget of more than \$2.5 billion and account for 72% of last year’s overall budget total, well within the 70%-73% range seen in previous years.

- The traditional big three—Canada, Australia, and the United States—head the list, with Canada continuing to widen the gap, followed by Peru, which moved ahead of South Africa into fourth place last year. Mexico and Russia both jumped ahead of Brazil into the sixth and seventh slots, and Chile dropped back to ninth place. Mongolia joined the top ten for the first time in 2004, bumping Argentina from the list for the first time in a decade. Also worth noting is a surge in the number of surveyed companies active in China last year, resulting in a 350% increase in allocations from \$19 million in 2003 to about \$86 million in 2004, giving it the 11th-place ranking.



- Now, looking back at acquisitions vs exploration, this graph shows annual worldwide exploration budget totals compared with annual totals for significant gold and base metals acquisitions from 1995-2004. The acquisition figures are compiled using information from MEG's *Gold and Base Metals Acquisitions Services*, which cover the larger company and project deals announced in each year.

- During the period of declining exploration spending from 1997 to 2002, the value of substantial gold and base metals acquisitions averaged about \$8 billion annually, rising to a record high of more than \$14 billion in 2001 before cooling to about \$5 billion in 2002. Since that time, the value of acquisitions has increased for two straight years, in step with increasing exploration.

- Although acquisition activity in general has risen from the 2002 low, major company consolidations have remained muted since the 2001 peak. While the acquisitions totals in 2000 and 2001 were largely driven by the growth strategies of senior companies, a large portion of the activity in the years since the peak is the result of other factors, such as fulfilling South African black-empowerment ownership, substantial divestments by senior companies, and government-owned projects coming to tender.

Effects of Consolidation on Exploration

- Acquired companies' budgets effectively disappear in following year
- 1998: 7 companies with budgets=\$110 million
- 1999: 6 companies with budgets=\$75 million
- 2000: 6 companies with budgets=\$83 million
- 2001: 8 companies with budgets=\$166 million
- 2002: 4 companies with budgets=\$36 million
- 2003: 2 companies with budgets=\$31 million

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- If we look at the effects of industry consolidation on exploration spending over the past few years, we see that large portions of the acquired companies' budgets effectively disappeared in the years following the acquisition, as the surviving companies' budgets either remained the same as before the acquisition or were reduced further, despite incorporating an expanded exploration portfolio.
- The figures shown here represent the number of substantial companies acquired in each year and their cumulative budget for the year they were acquired.
- While high-level acquisitions have had a negative effect on subsequent exploration in each of the years shown, acquisition at the peak of consolidation activity in 2000 and 2001 together account for more than 40% of the overall decrease in exploration in the following years.

Exploration vs Acquisitions

- A real choice for a company; *a false choice for the industry*
- As more companies acquire, the pool declines and valuations of assets rise
- Corporate mergers bring down exploration spending while raising the hurdles for acceptable projects
- *Somebody* has to be exploring



- Despite the fact that acquisition strategies tend to have a negative affect on overall exploration, it remains a real choice of growth for an individual company. The problem is that as more companies adopt the strategy, the available pool of quality acquisitions declines and valuations tend to rise making it hard to find value in the market. In addition, as companies get larger, the size hurdles for acceptable projects also increase.
- Acquisition strategies presuppose exploration by other companies to create the pool of new assets to acquire. Without them prices will increase and eventually draw down the pipeline of dormant deposits.

What's Ahead?

Exploration will continue to increase in 2005

- Strong junior financing,
- Strong metals prices,
- Majors responding to better cash flows and pipeline needs, and
- New under explored areas opening up



•Jumping now to the question of what's ahead:

•We expect exploration to continue to increase at least through 2005, although at a more modest rate than seen last year, led by growing spending by the juniors.

•Although the juniors spent a substantial portion of the money they've raised over the past 12-18 months on last year's exploration programs, many have already replenished their coffers to fund programs that will run into this year and, despite the fact that many analysts are predicting increased volatility in metals prices, the consensus seems to be that they will remain at attractive levels for the near future which should provide adequate support for the juniors to continue to raise money in the near term.

•We also expect the major companies to keep their exploration budgets at least at their current levels as they continue to respond to better cashflows and their pipeline needs.

•In addition, we expect the interest in new underexplored areas that are opening up such as the Former Soviet Union, China, India, and parts of the Middle East to continue to boost exploration in 2005.

The Role of Metals Prices

- Affect both budgets and project viability
- Prices didn't support exploration or development during the low
- Lots of projects viable at \$400 gold and \$1 copper
- Are current prices sustainable?

•Metals prices are the main driver of exploration and affect both exploration budgets and potential project viability. Prior to the recent recovery, metals prices didn't support exploration or development.

•At current prices, a lot of projects out there are theoretically viable, and many of these projects that have sat deep in the pipeline or were dormant are now being revisited. But whether these projects can sustain the industry in the long term will depend on your notion of prices - if you feel that prices are now at a new sustainable level (which is what we hear at the top of every cycle), then that will change your view of what's out there in the pipeline.

How Much Exploration is Enough?

- More exploration done as prices go up, when more known assets become economic
- Size of new discoveries are going down
- Size hurdles for new projects are going up
- Exploration is up, but will it find the larger deposits?
 - Efficiency a question
 - Potential explo technology breakthroughs
- Discoveries are necessary to bring forward in the down part of the cycle

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Now to conclude, I'd like to pose the question we're often asked: "How Much Exploration is Enough?"

- As we've seen, through a typical exploration cycle more exploration is done as prices go up, but this is also when more known, previously uneconomic assets begin to look viable and are reactivated.

- At the same time, as the larger producers continue to grow we are seeing increased hurdle rates for project development, coupled with declining discovery rates and decreasing size of new discoveries.

- Exploration is going up, but will it yield satisfying results?

- There are questions as to how efficiently some companies are spending their exploration dollars, especially those that are revisiting older projects that look viable at current prices but are unlikely to survive the next downturn.

- And of course potential advances in exploration technology could have a positive effect on discovery rates.

- It remains to be seen how successful the current exploration boom will be since it usually takes several years to define a new significant deposit. Although technological advances and improved economics may fill the near-term void, the discovery of new low-cost projects that will survive the ups and downs of the industry's cycles are essential for the long-term growth of the industry.