



GOLD FIELDS

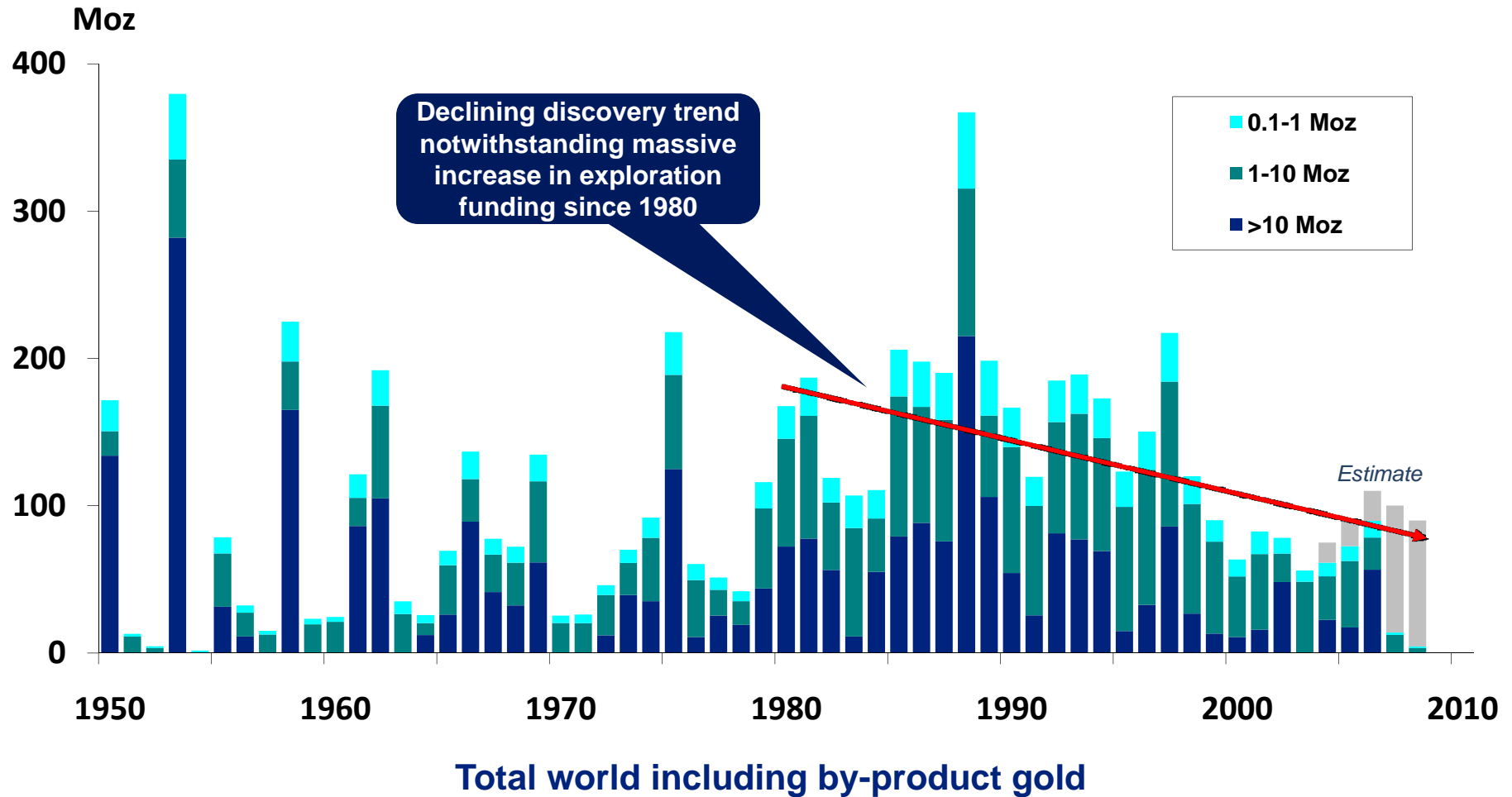
Exploration

“A Gold Industry Perspective”

World Mining Investment Congress

June 2009 - London

Tommy McKeith



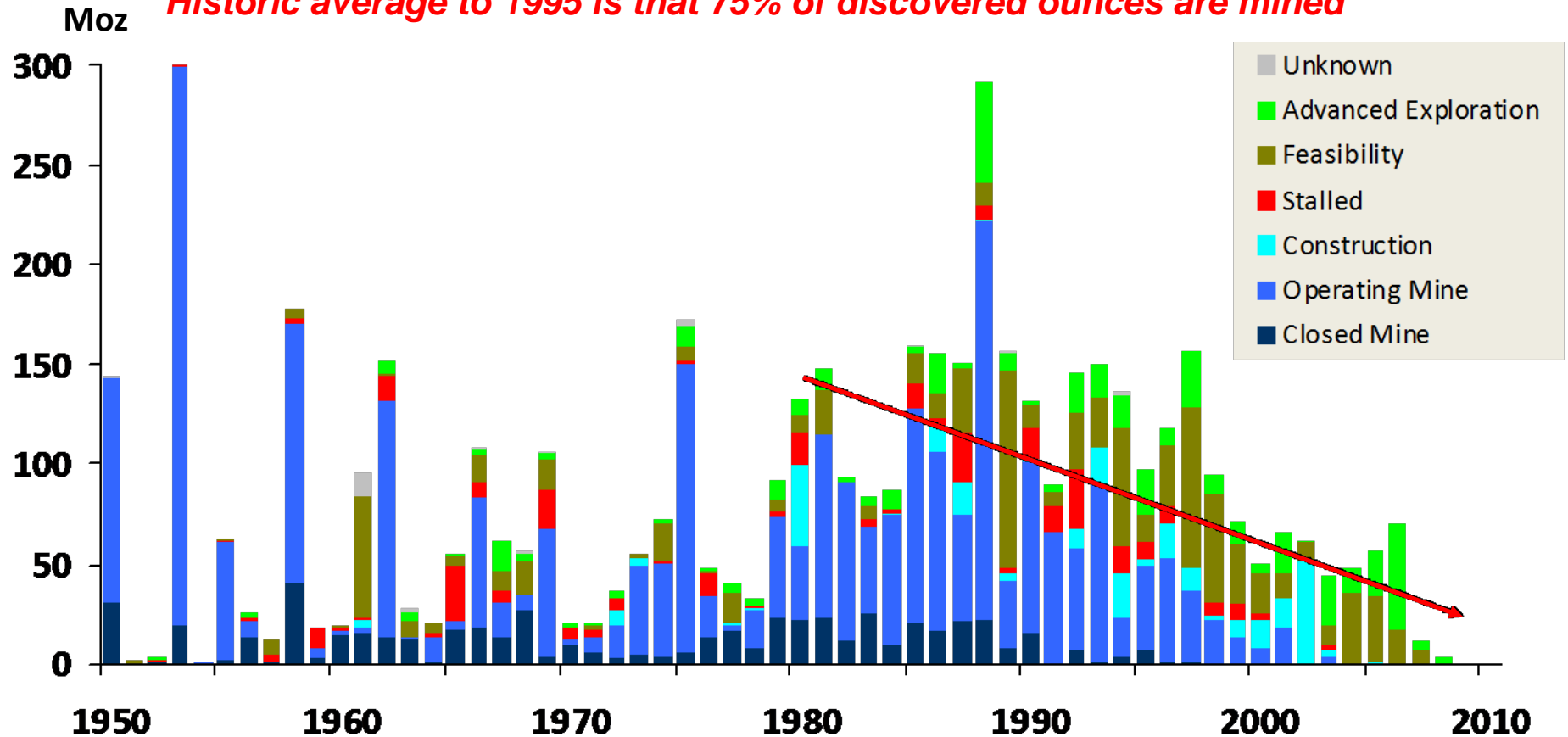
Note: Figures increased by 27% to reflect deposits not in the database or those deposits with no reported discovery date

Source: GFL/MinEx Consulting

Is this enough to replace production?



Historic average to 1995 is that 75% of discovered ounces are mined



Industry is being sustained by maturing mines discovered many years ago

Primary gold deposits >0.1 Moz found in World

Source: GFL & MinEx Consulting

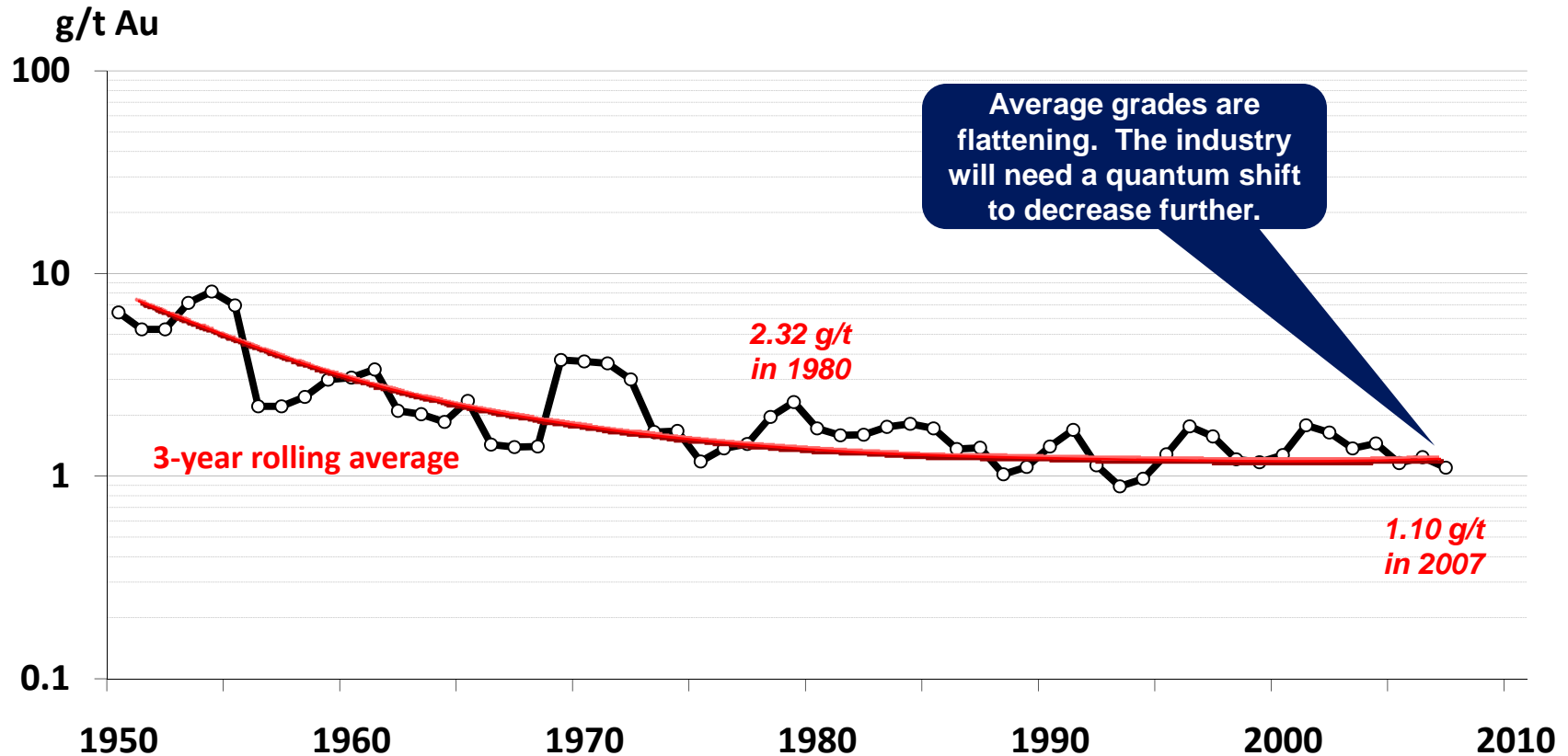
Current gold mine production is about 75Mozpa

- Review of the gold industry's discovery performance
 - Discovery trends
 - Exploration funding effectiveness is declining
- Key issues
 - The traditional search space is depleting
 - Junior sector performance
- Strategic responses
 - Need to increase greenfields exploration
 - Majors to provide alternative funding source to the junior sector

Steady decline in resources being discovered



Average resource grade for all primary gold discoveries >1Moz in the world



Driven by technological improvements (economies of scale, CIL, heap leaching)

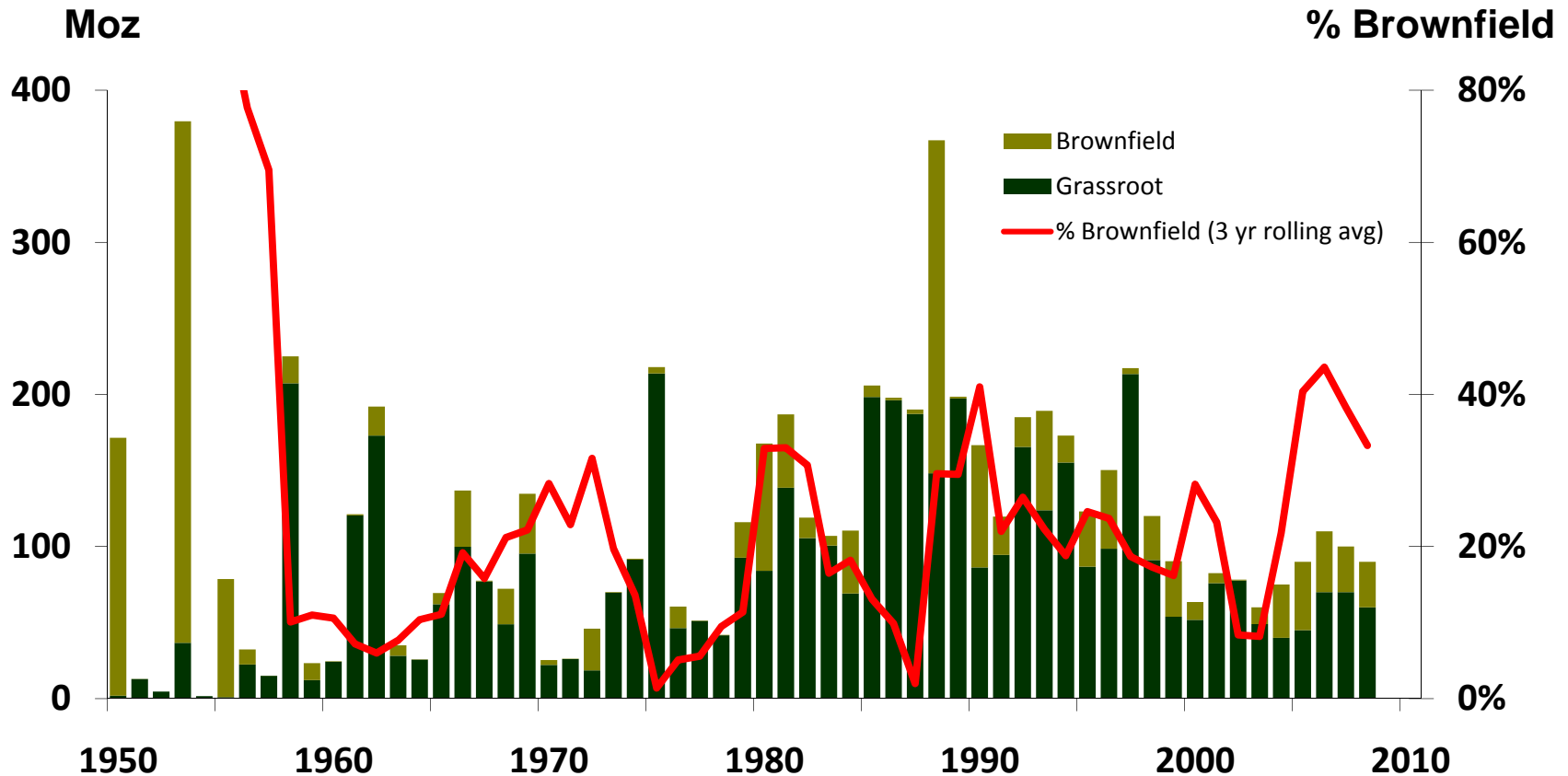
Note: Excludes deposits where gold is a by-product (<50% of mine revenue)

Source: GFL/MinEx Consulting

Are these grades sustainable in an energy constrained world?



27% of all gold found since 1950 comes from brownfields discoveries



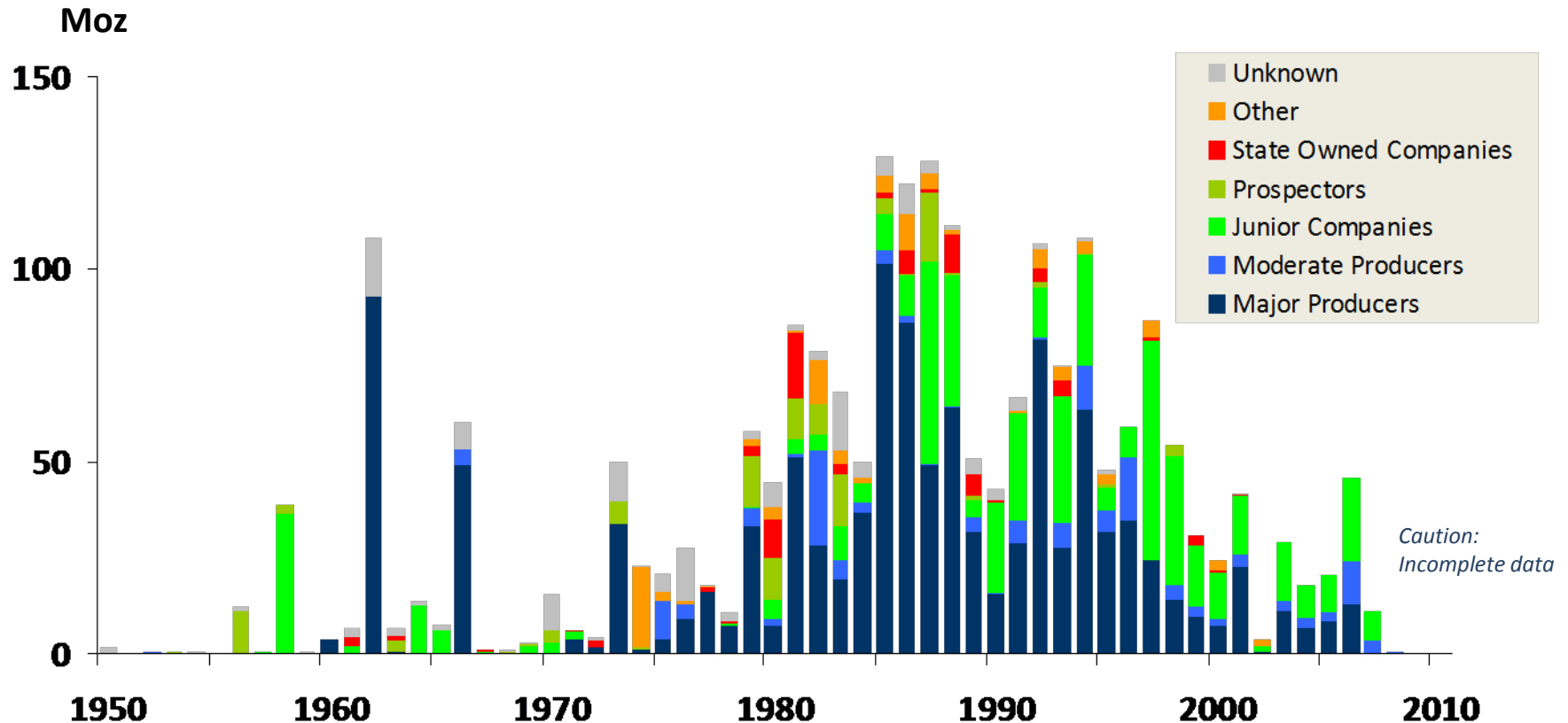
Note: By-product gold is mainly associated with copper and other base-metal deposits

Source: GFL/MinEx Consulting

Is the industry doing enough greenfields exploration?



Primary gold deposits >0.1 Moz found in Western World from greenfields exploration



Note: Have pro-rated shared discoveries

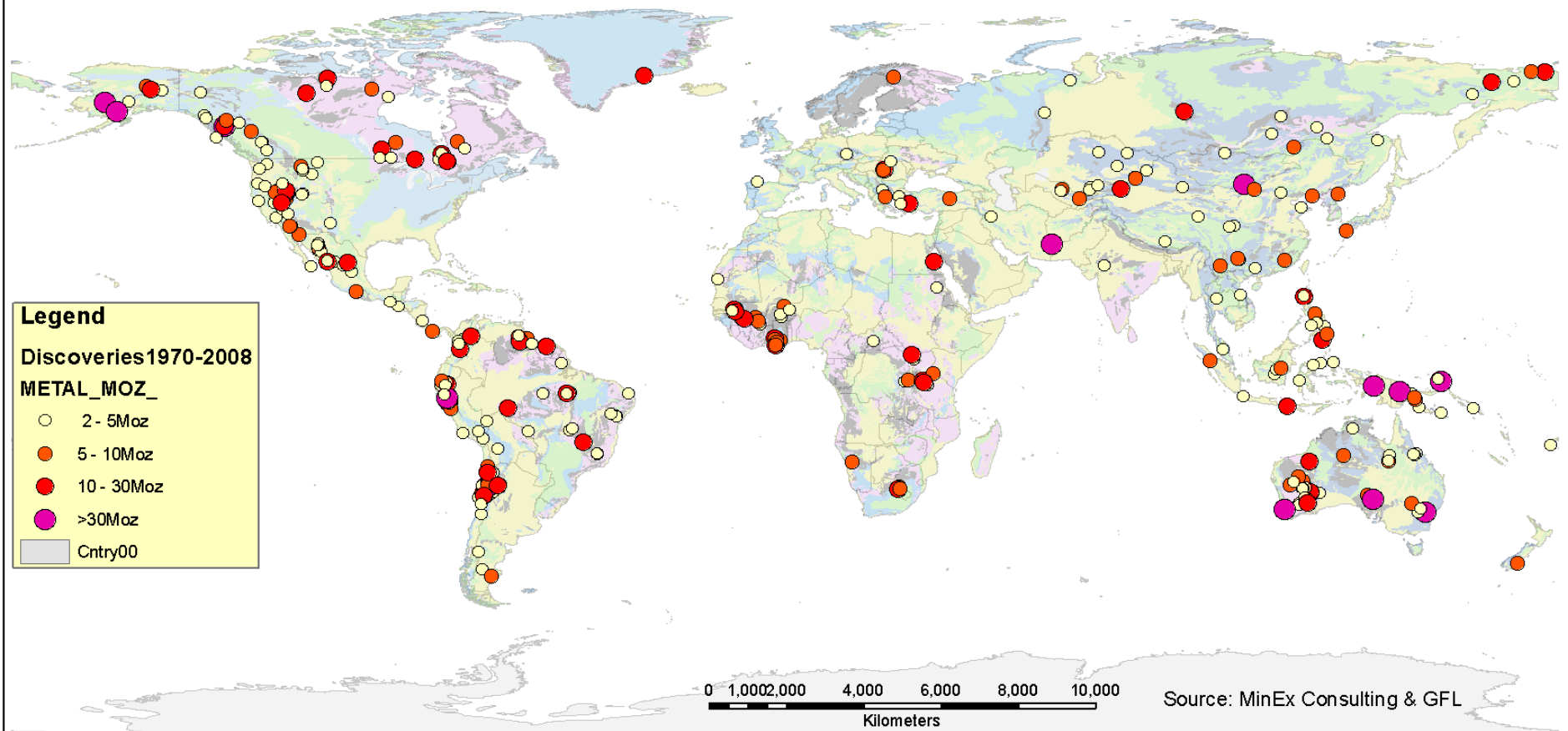
Caution: Chart excludes deposits with unknown discovery date, or deposits not captured in the database

Source: GFL/MinEx Consulting

In 2007 and 2008 juniors funded about 60% gold exploration



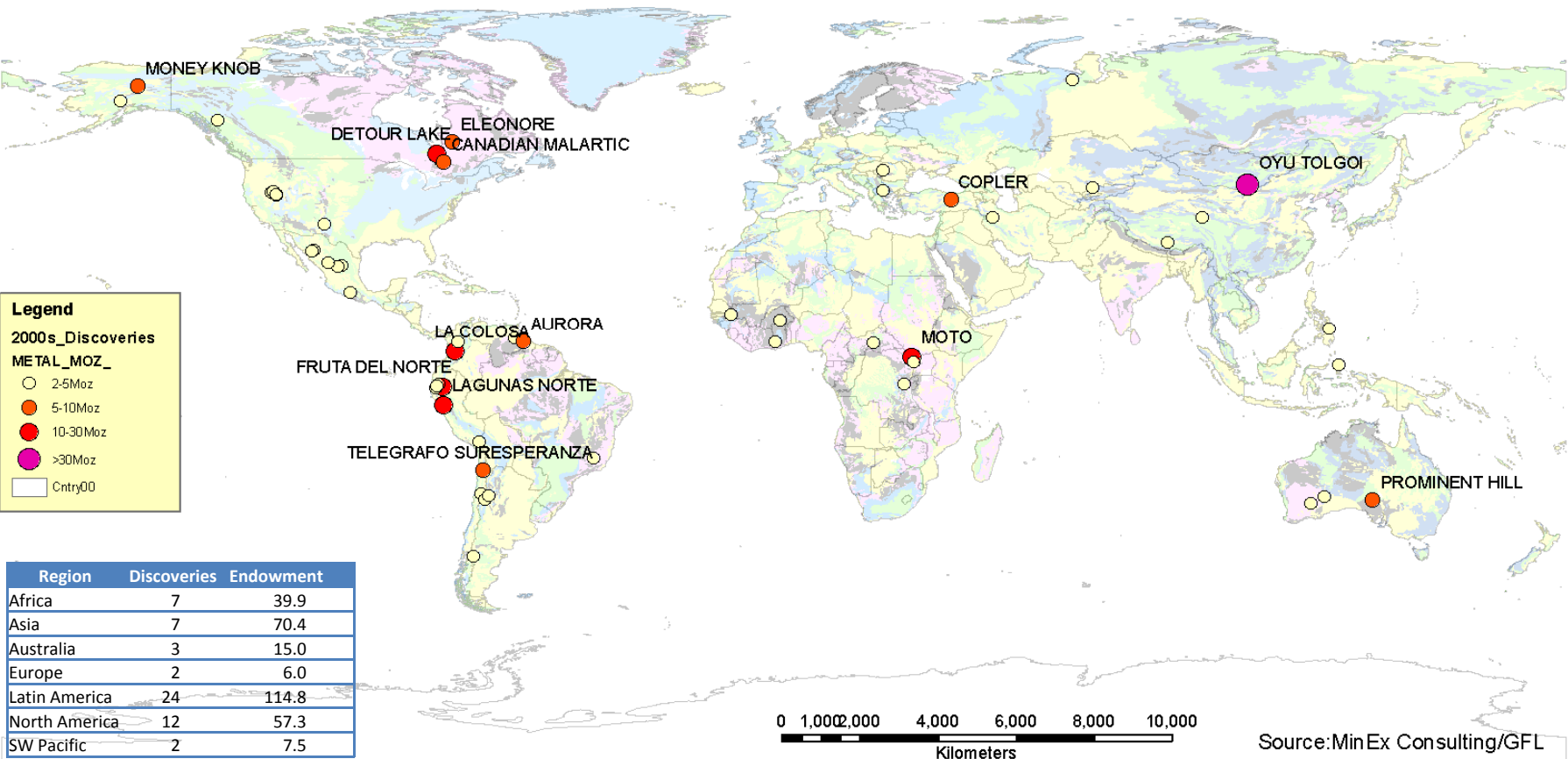
Gold discoveries by size for the period 1970 to 2008



Maps the known gold belts – but



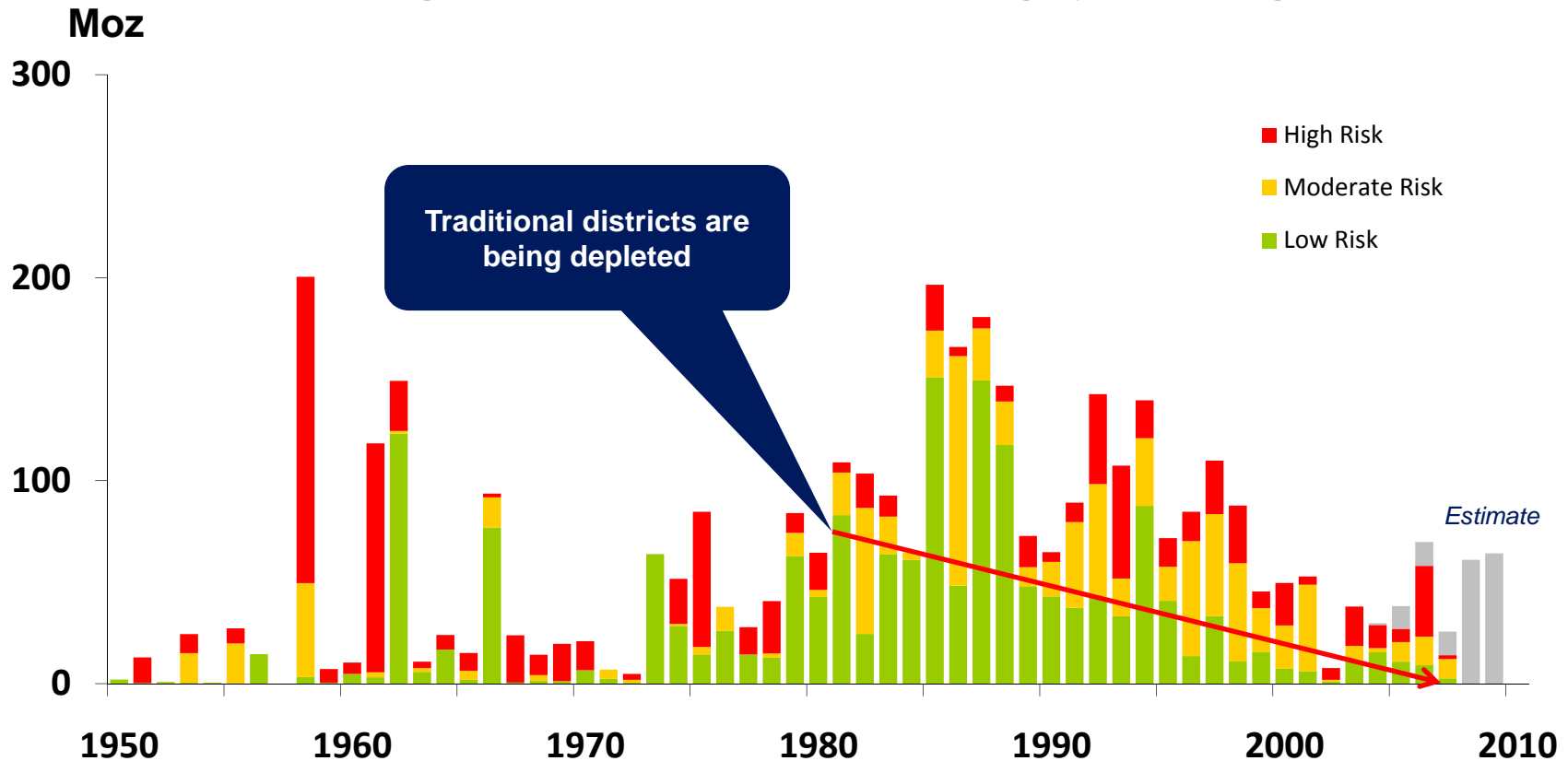
Gold discoveries by size for the period 2000 to 2008



Traditional developed areas poorly represented



Total world greenfields discoveries including by-product gold



Note: Excludes brownfields discoveries

Internal political and operating risk ranking

Source: GFL/MinEx Consulting

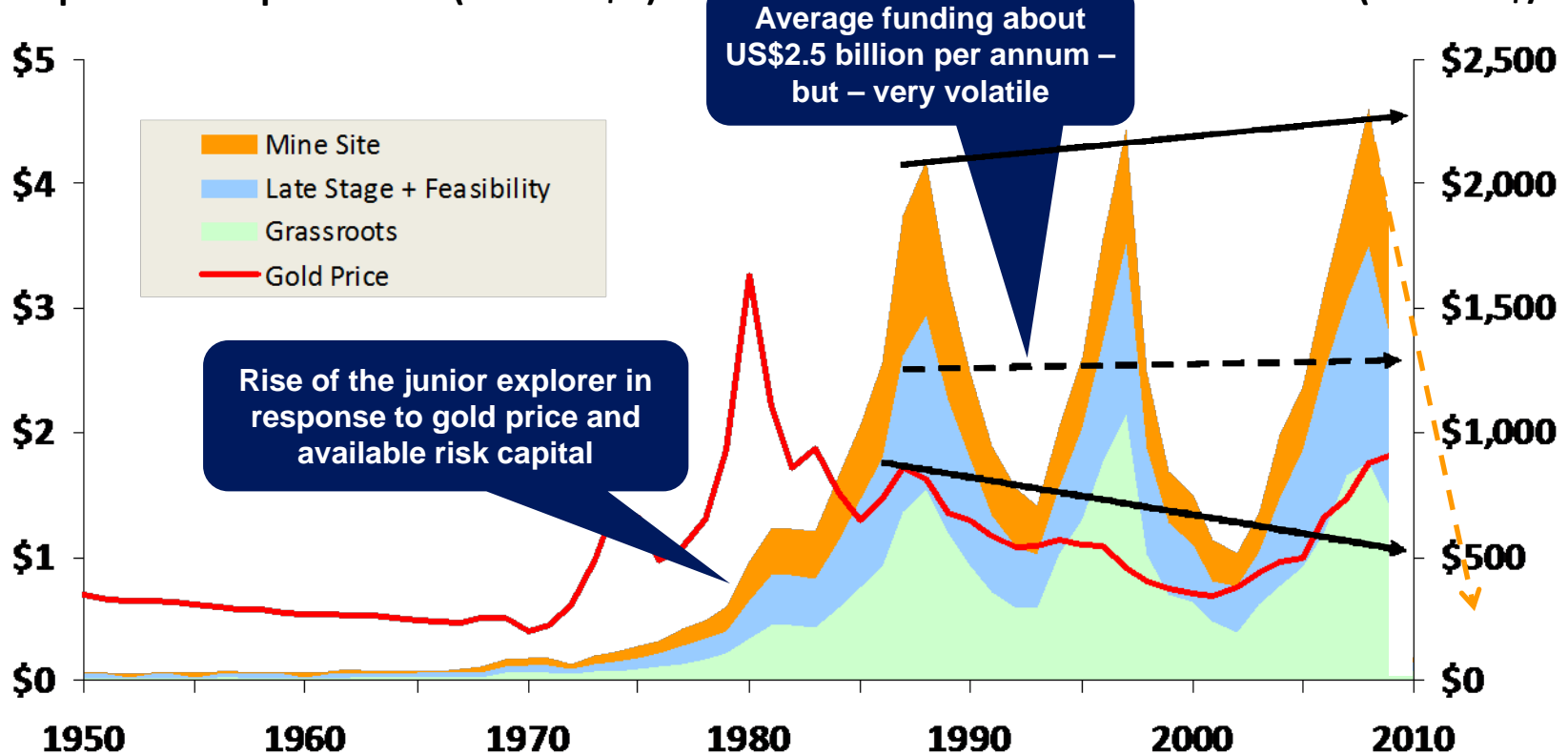
Over 70% of the ounces discovered over the last 10 years in riskier areas



Western World

Exploration Expenditures (2008 US\$B)

Gold Price (2008 US\$/oz)

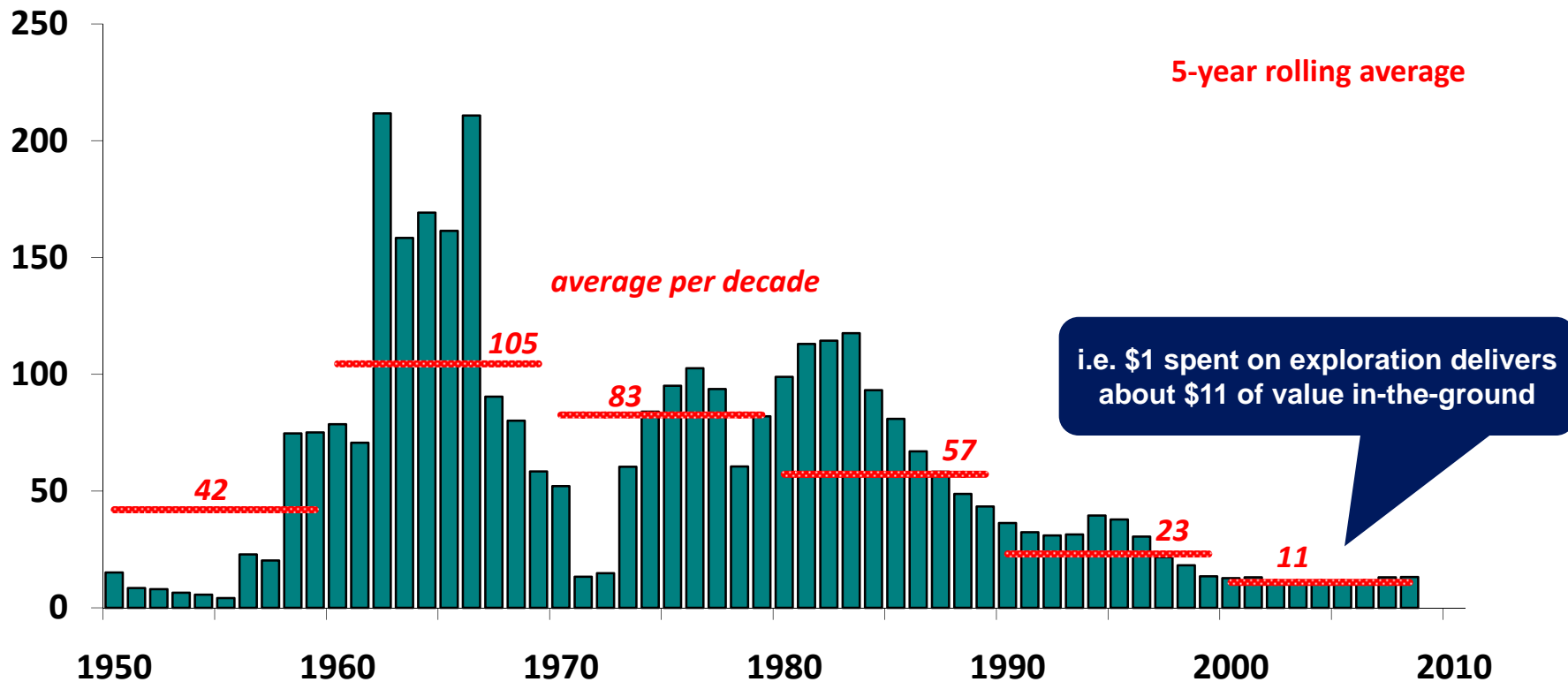


Sources: MinEx Consulting + MEG (from 1992 onwards)

Majors spend about \$500 million to \$1 billion p.a.



Ratio of in-situ value of gold found
per exploration dollar spent



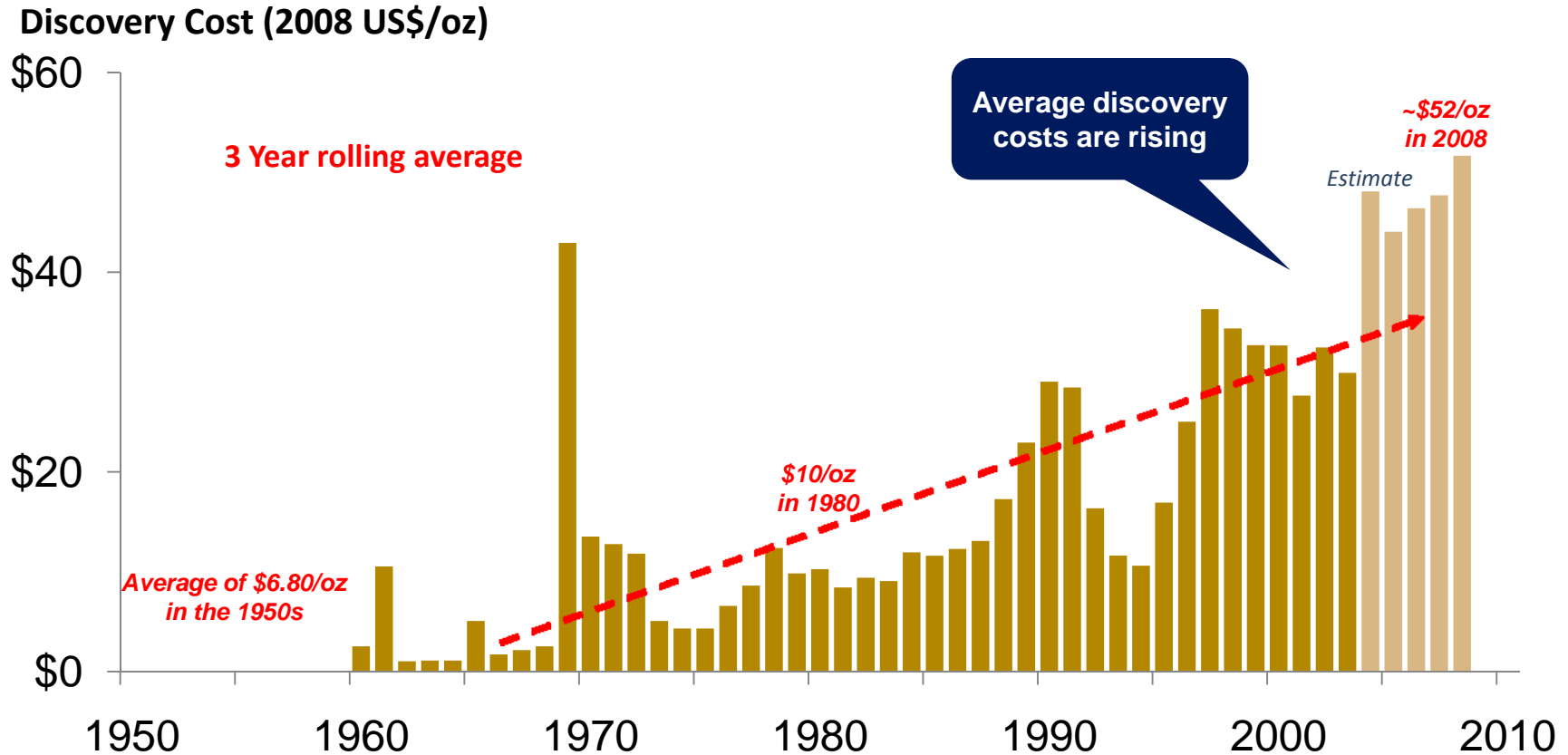
Note: Based on primary gold deposits found in the western world versus associated expenditures on grassroots and late stage exploration

Source: GFL/MinEx Consulting

Decline in spite of a real gold price increase from ~\$400/oz to ~\$900/oz



Primary gold added to resource base (Western World)

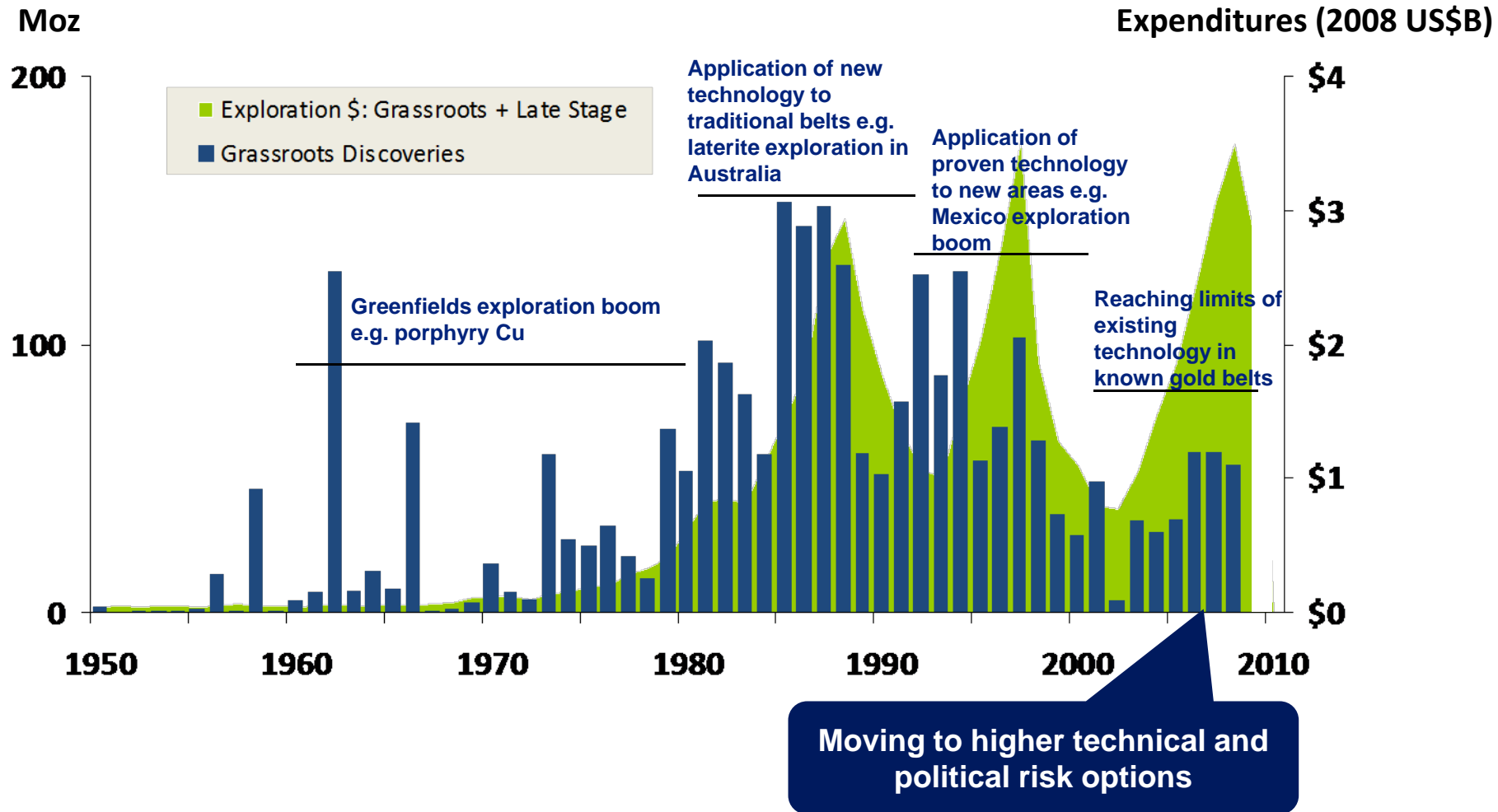


Note: Based on all deposits >0.1 Moz.

Includes adjustment for deposits with no reported discovery year

Source: GFL/MinEx Consulting/MEG

Cost per ounce resource discovered is increasing



Require new technologies to open new search space

**Primary gold discoveries from greenfields exploration - World: 1992-2008**

	Majors + Intermediates	Juniors + Prospectors
Greenfields and late stage exploration funding	40%	59%
Number of deposits found >0.1Moz	49%	44%
Ounces found	59%	36%
Average size of discovery	3.2Moz	2.2Moz
Cost per discovery (2008 US\$M)	\$104M	\$174M
Cost per ounce (US\$2008/oz)	\$33/oz	\$80/oz

Note: Have pro-rated the "unknown" deposits across both groups

Source: GFL/MinEx Consulting/MEG

This is a structural issue



- Uncertain and cyclical funding creates inefficient exploration
 - Focus on brownfields revitalisation rather than new greenfields
 - Loss of exploration momentum during funding lows
- The equity markets reward growth in in-ground resources
 - Again imperative for greenfields exploration low
 - Quality of resource often not the focus
- Will the recent credit crisis have lasting implications?
 - Due to its severity investors likely to remain risk-averse for longer
 - Banking sector less willing to provide debt to riskier ventures

Greenfields exploration likely to decrease further ...

- Industry is not sustaining itself longer term
 - Discovery deficit - gradual depletion of traditional areas
 - Declining quality of resource inventory
 - Increasing cost of replacing resources/reserves
- Need to discover and develop the next generation of gold projects and provinces – through greenfields exploration
 - Requires investment in research and development
 - Requires government support
- Successful greenfields exploration requires a sustained commitment

The industry needs to leverage the talent of the junior sector

- Major companies need to invest more available cashflow into greenfields exploration
 - Gold Fields has maintained and strengthened its greenfields budget
 - Peers are also showing commitment
- Major - junior partnerships
 - Leverage the junior sector's skills into greenfields exploration
 - Provide a consistent source of greenfields exploration funding
 - Junior companies focused and often more effective in riskier countries
 - Majors have more capacity to develop large discoveries and provide flexible funding options for juniors

The industry will need to play catch-up to recover



GOLD FIELDS



**A discovery is said to be an accident
meeting a prepared mind**