



# Agenda

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- Demand
- Supply
- Cost curves
- Financial Flows
- Investment outlook

# Disclaimer

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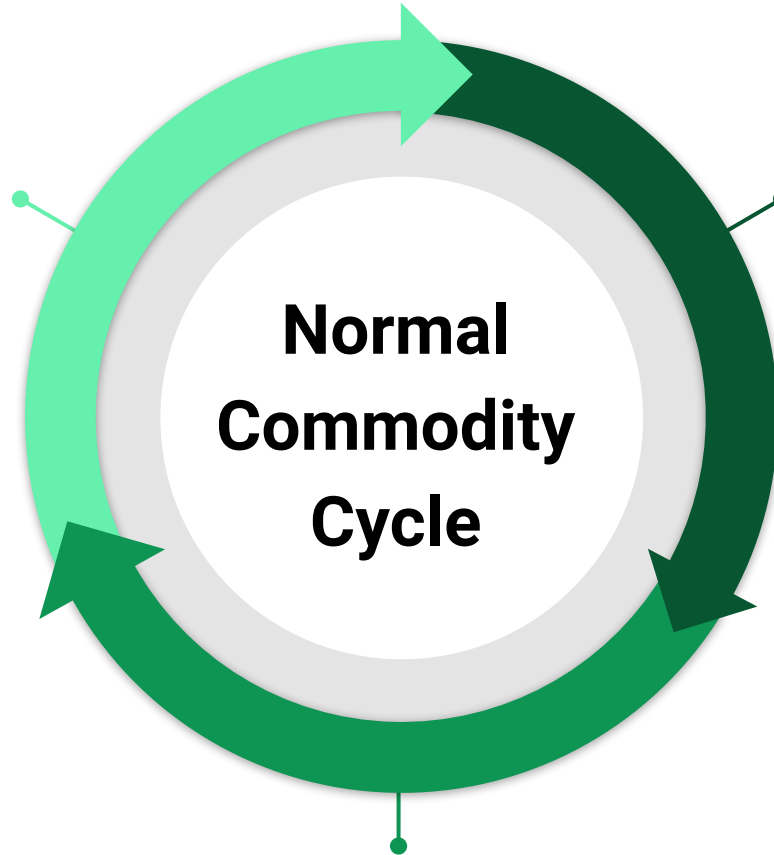
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# What is a cycle:

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Lack of Supply= Prices rise  
as supply declines and demand  
increases. New mines planned  
but delay before building  
**Demand > Supply**

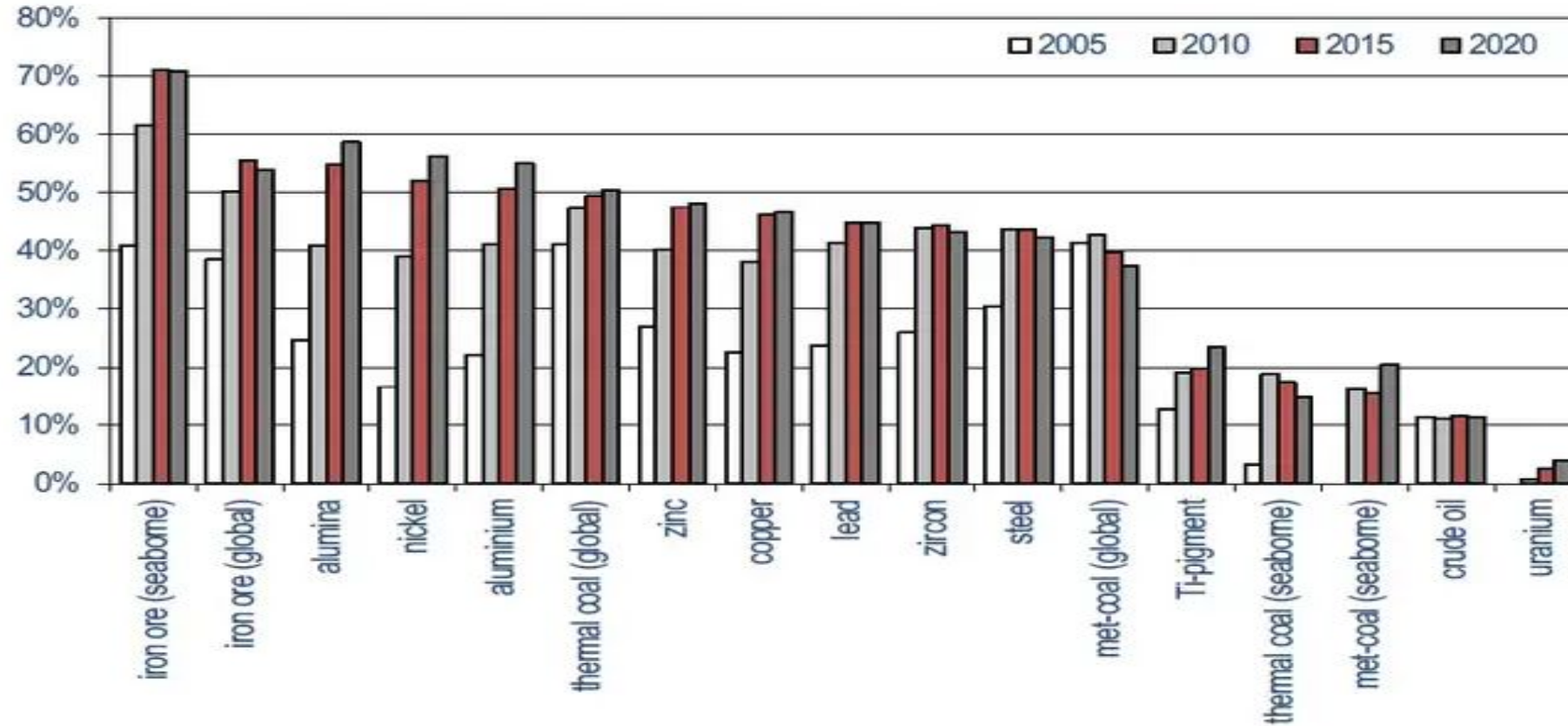


Prices fall as production  
commences in new mines  
**Supply > Demand**

Prices bottom as high cost mines close  
and no new mines are built  
**Supply = Demand**

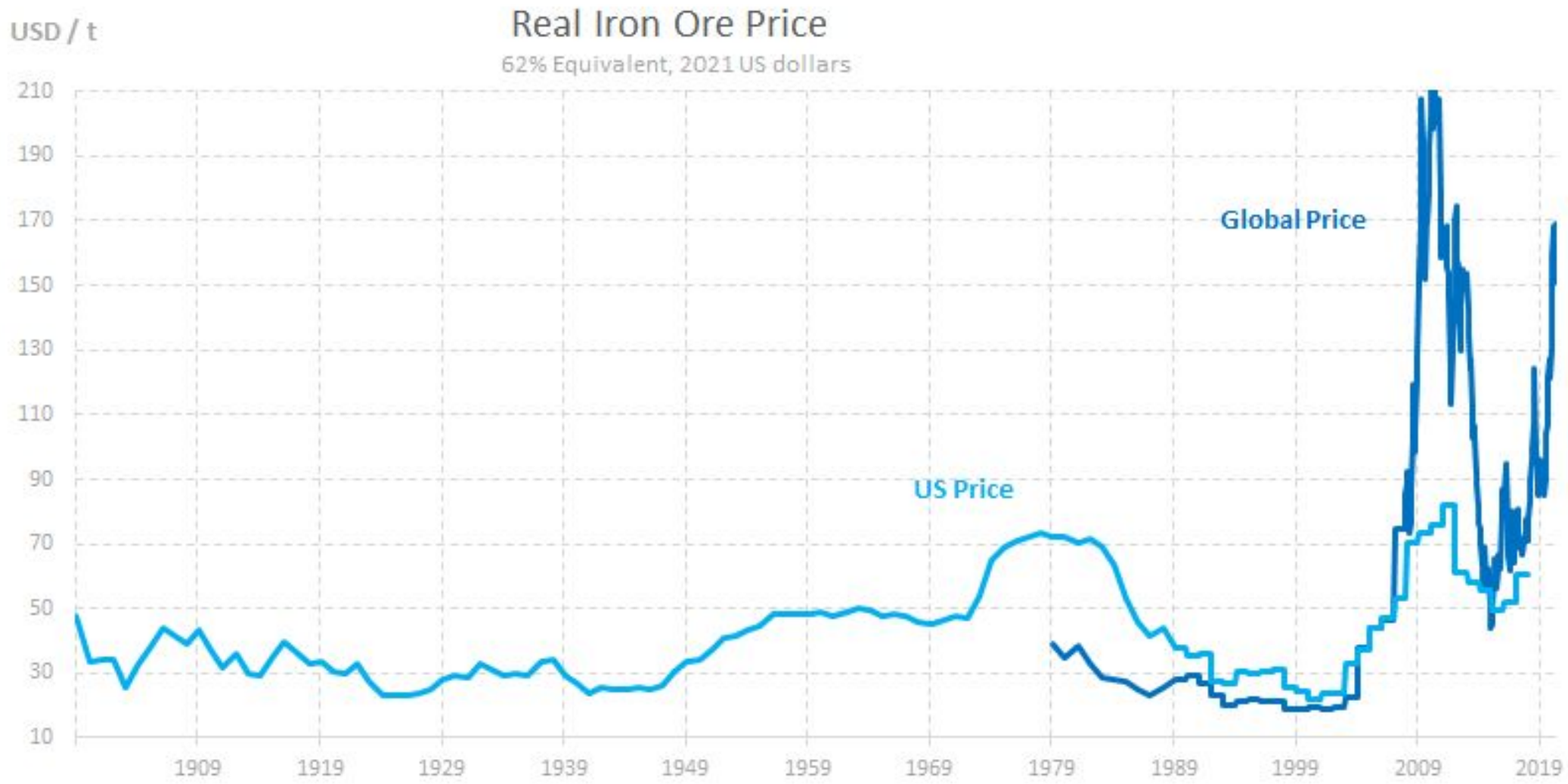
# When do you get a super cycle?: China

**Exhibit 2:** China's %-share of global commodities' demand



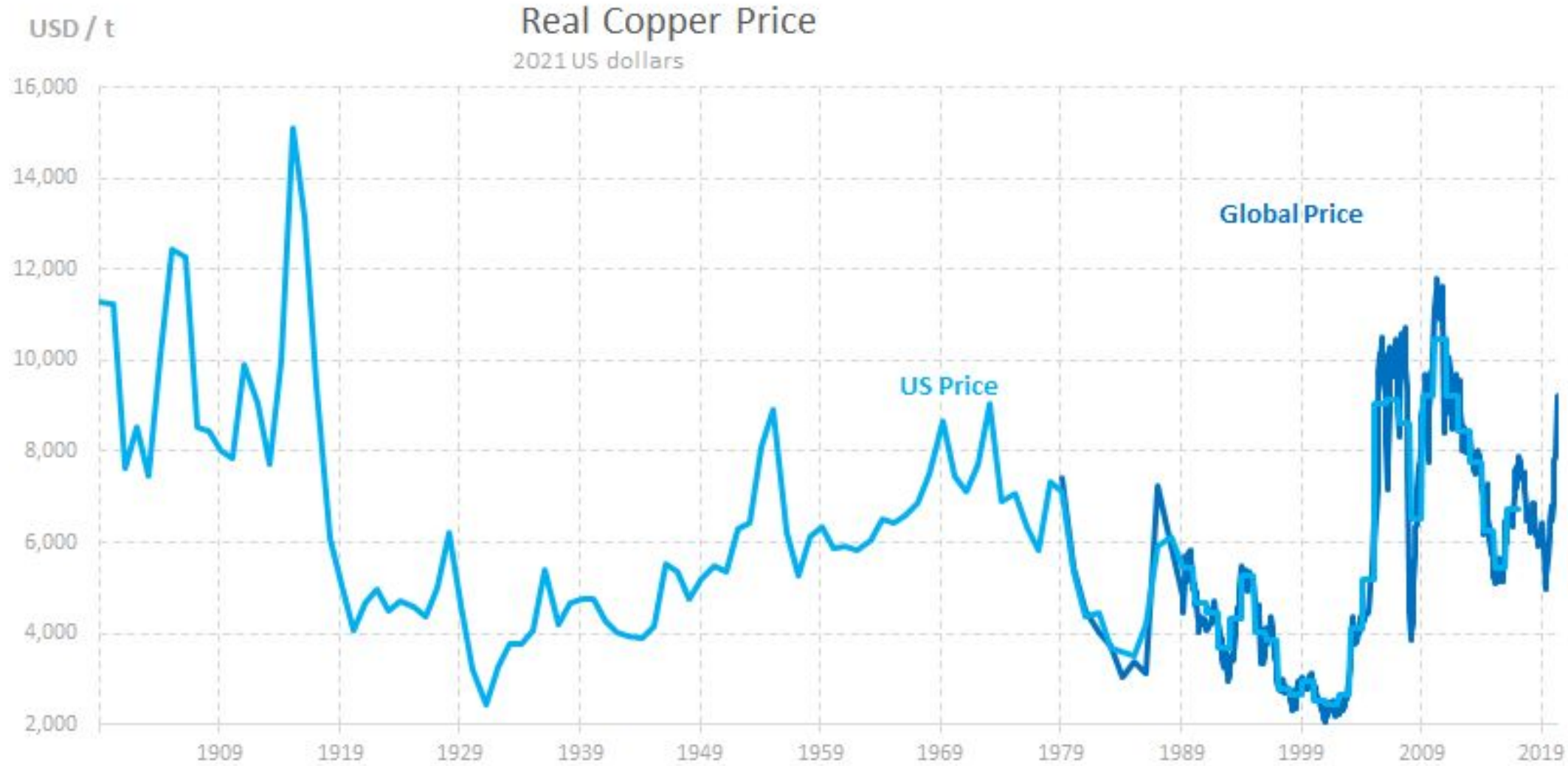
Source: WM, WBMS, IHS, Platts, Bloomberg, Morgan Stanley Research; sorted on 2015 data

# Supercycle Prices: Iron Ore



Source: USGS, IMF, Comex, Nucleus Wealth

# Supercycle Prices: Copper



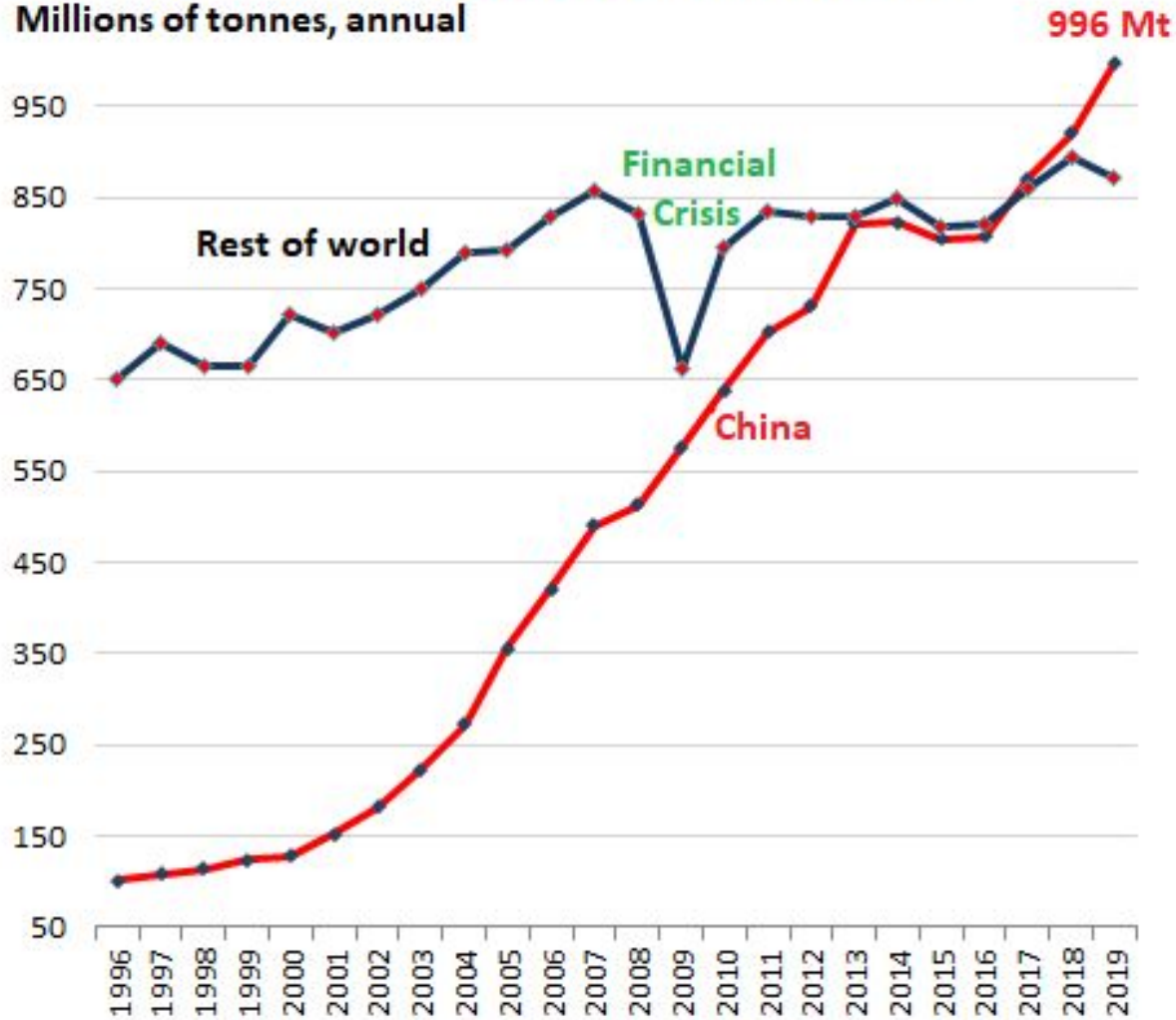
Source: USGS, IMF, Comex, Nucleus Wealth



# Demand: Iron Ore

## Crude Steel Production: China v. Rest of World

Millions of tonnes, annual

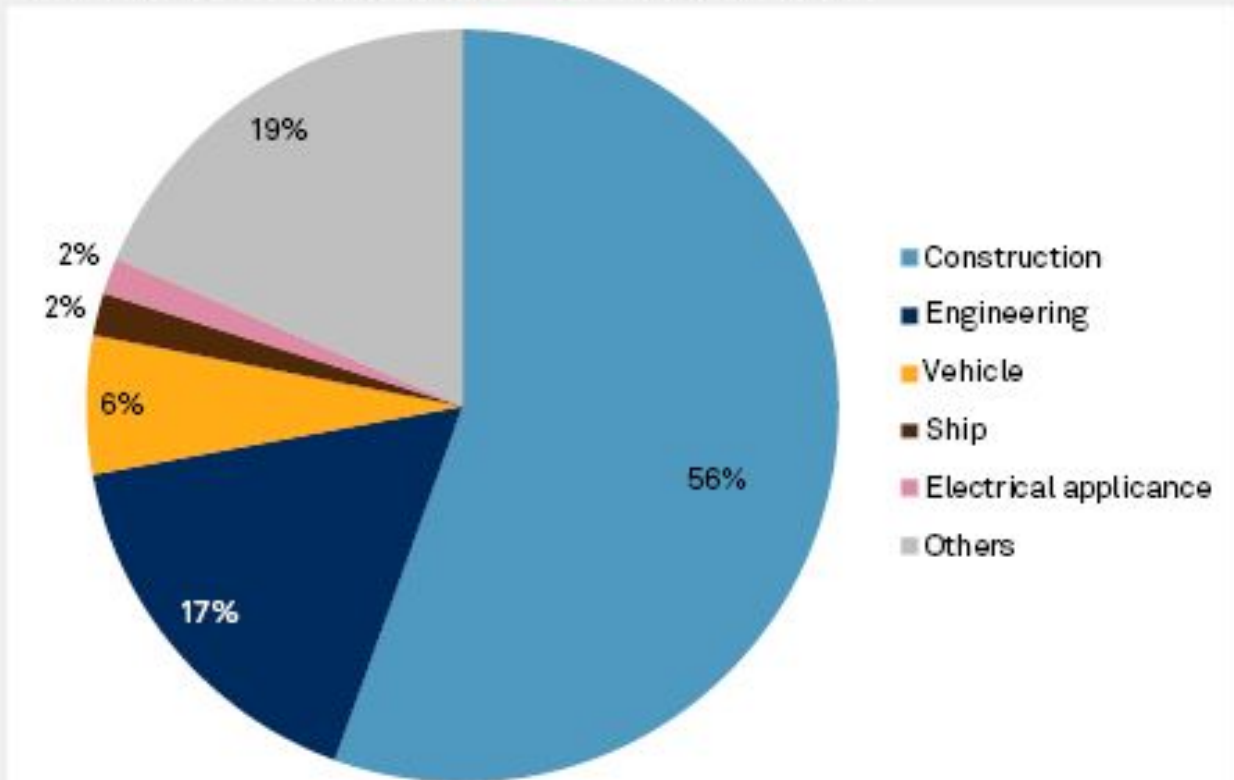


Source: wordsteel

WOLFSTREET.com

## Construction sector accounts for most of Chinese steel end-use demand (%)

2019 Chinese steel demand = 875 million tonnes



Data as of March 2, 2020.

Numbers estimated by China Iron and Steel Industry Association.

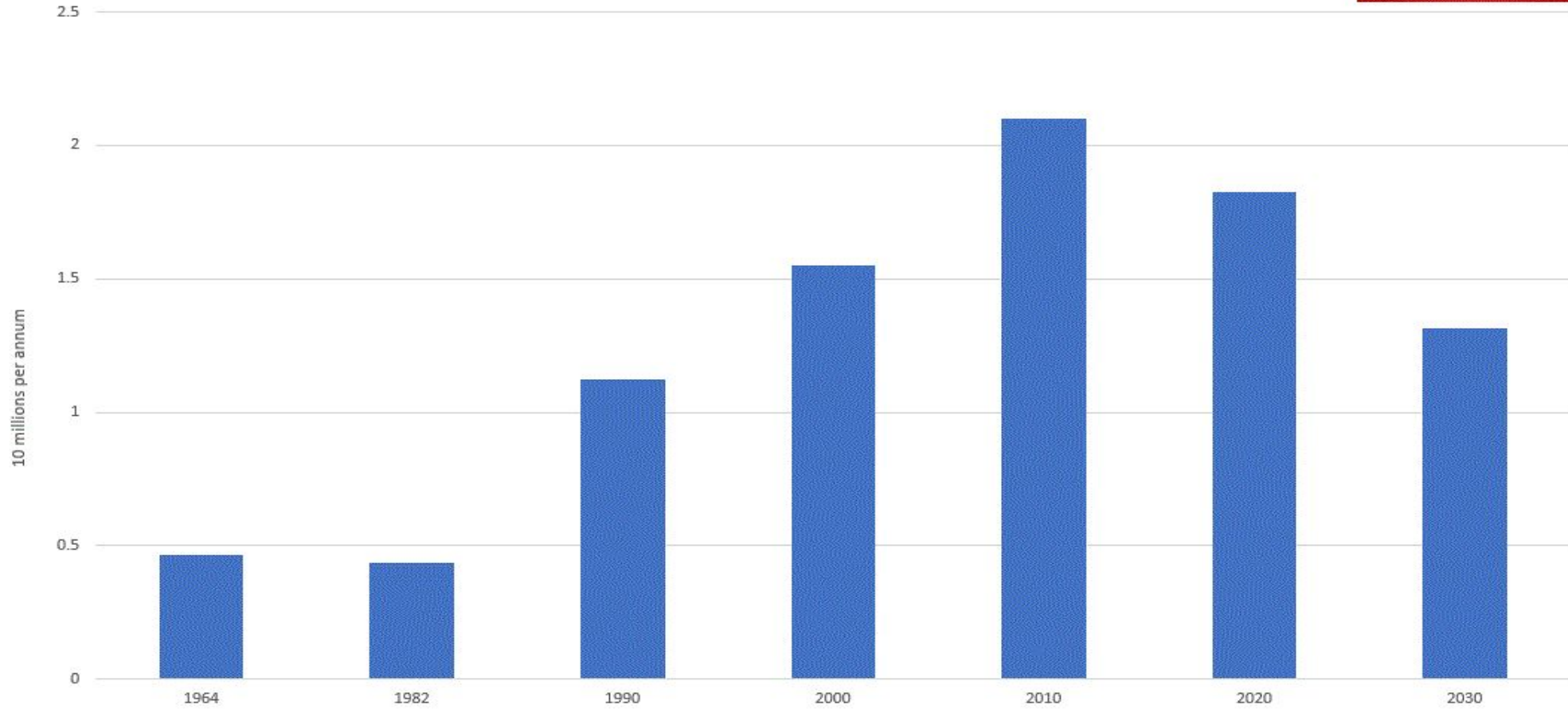
Sources: S&P Global Market Intelligence; China Iron and Steel Industry Association



# Demand: China

Number of people China urbanises per annum

MACRO  
BUSINESS

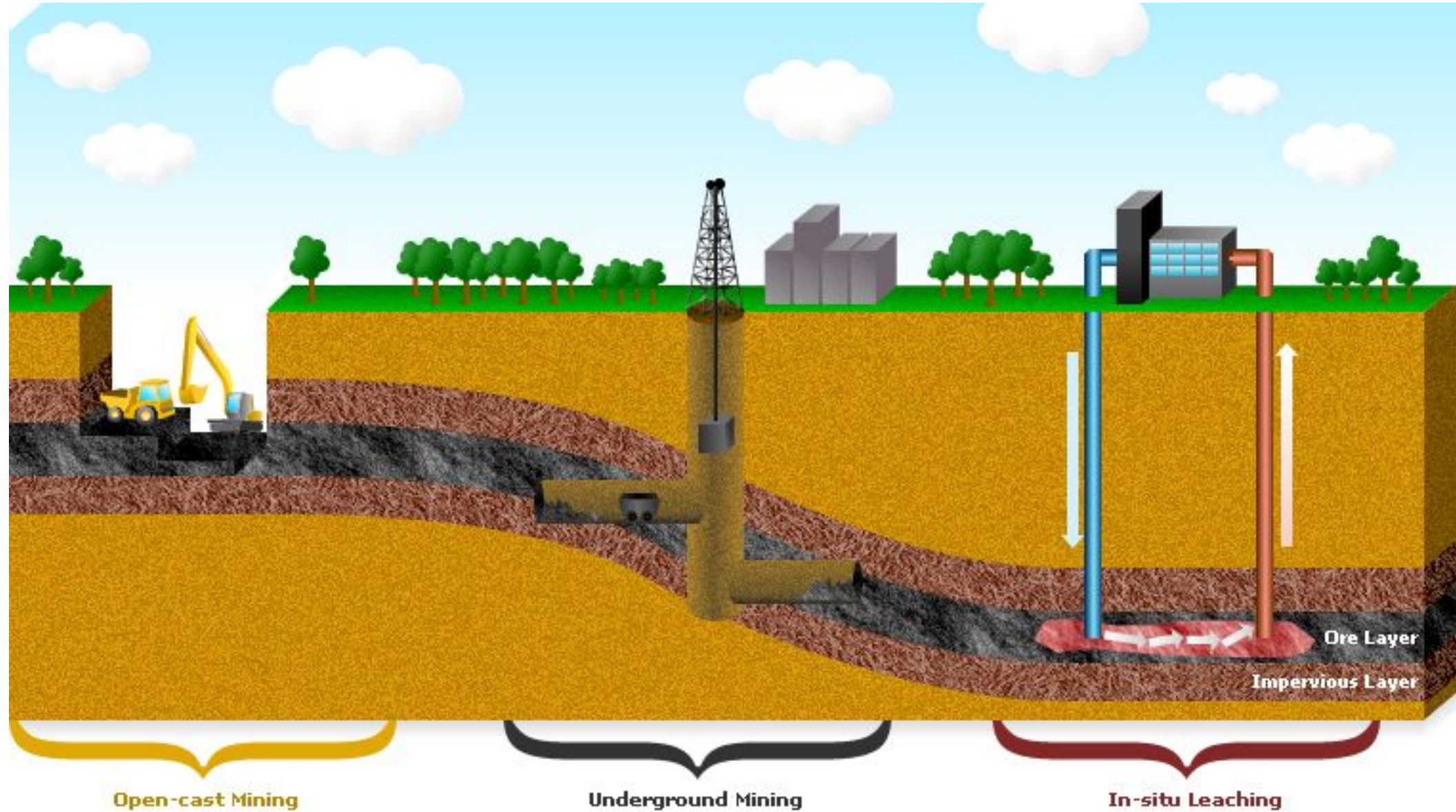


## Demand: EVs

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- Internal Combustion Car: 20kg
- Battery EV: 50-60kg
- (2br Apartment: 125-150kg 3br House: 200-250kg)
- ~100m cars per year
- $100 \times 35 / 1000 = 3.5\text{m tons per year extra demand}$
- World mining 20m + Recycling 10m = 30m tons /year
- i.e. 12% more copper needed

# Cost curves: Mining Costs



## Cost curves: Mining Costs

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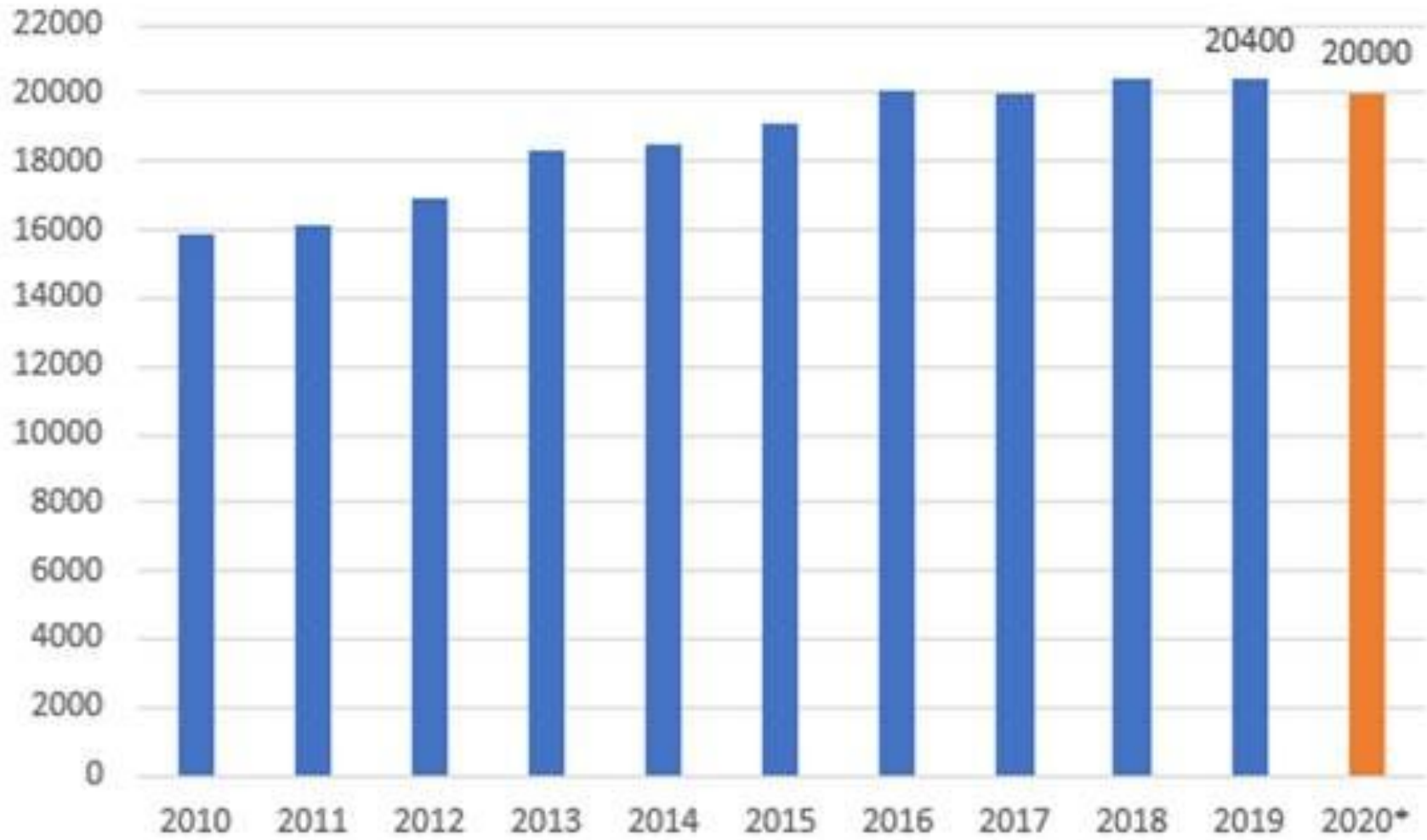
- Open Pit: \$1.5 - \$2.5 per ton moved (note stripping)
- Underground:
  - Bulk: \$15-25 per ton of ore
  - Stoping: \$30-50 per ton of ore
  - Cut and Fill: \$40-60 per ton of ore
  - High Cost: \$100-200+ per ton of ore

## Cost curves: Other Costs

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- Processing: varies widely, say \$15 / ton of ore of typical metal, much lower for iron ore or coal, higher for gold
- Transport: \$1-2 to transfer modes
- Rail Transport: \$20 / 1000 km / ton (larger operations)
- Ship Transport: \$4-8 / ton (Aust/Brazil/SA to China)

# Supply: Copper

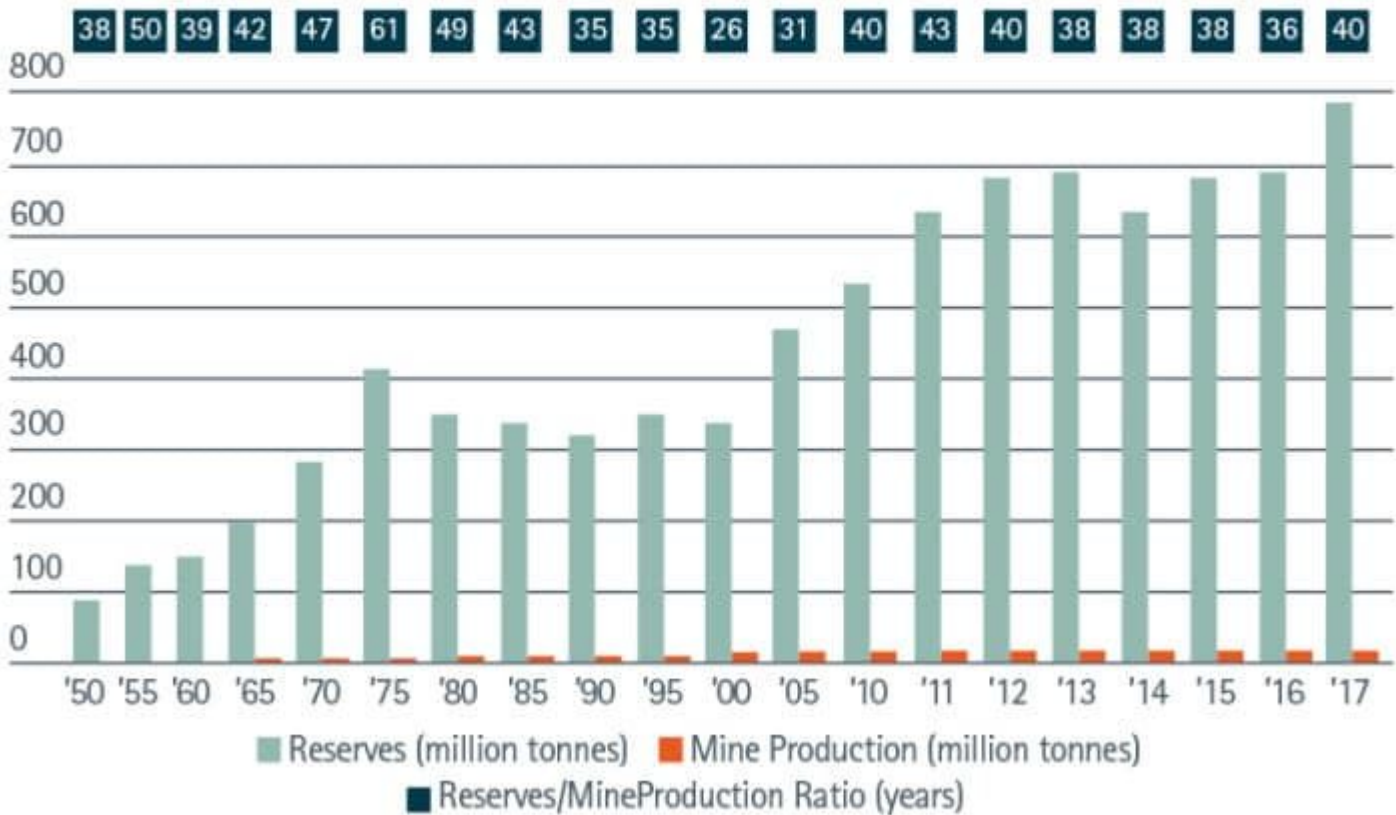




# Supply: Copper

## HISTORICAL COPPER RESERVES VS. COPPER ANNUAL PRODUCTION

in million tonnes (USGS, 2018)





# Financial Flows:

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- Speculative buying
- Chimerica / US Dollar
- Inflation

# Investment Outlook

## Structural downturn lurking, acute or chronic?

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### Key positive factors

- Government stimulus
- Low probability of US tax hikes
- Earnings very good
- Inequality to increase

### Other positive factors

- Bankruptcies limited
- Evictions limited
- Mortgage repayment holidays
- Wage growth very low
- Capital efficiency
- Low oil prices
- Vaccine hope
- Policy certainty
- Structural change in industries leading to cost efficiencies

### Key negative factors

- Virus in Northern Hemisphere
- Valuation
- Latent bankruptcies
- Low genuine credit growth

### Other negative factors

- Short term gap in US economic conditions
- Inequality longer-term effects
- Effects gradually rolling off
- Structural change in industries leading to weak demand
- Cycle
- Demand weak
- Australian stimulus badly targeted

## Viewer question of the week

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**What is the biggest risk to a bull market in 2021?**

**Drop your answers in the comments**

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