



PRESENTATION ON FERROUS & NON-FERROUS METALS



ITI Investor Services Limited

Investing redefined



INTRODUCTION – BASE METALS

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- ✓ Also known as Non-Ferrous complex.
- ✓ Extensive industrial applications and usage.
- ✓ Availability is region specific while the usage is worldwide. Hence, price discovery is global.
- ✓ This complex has attracted the attention of the investment community giving different dimension to their importance.

COPPER

INTRODUCTION

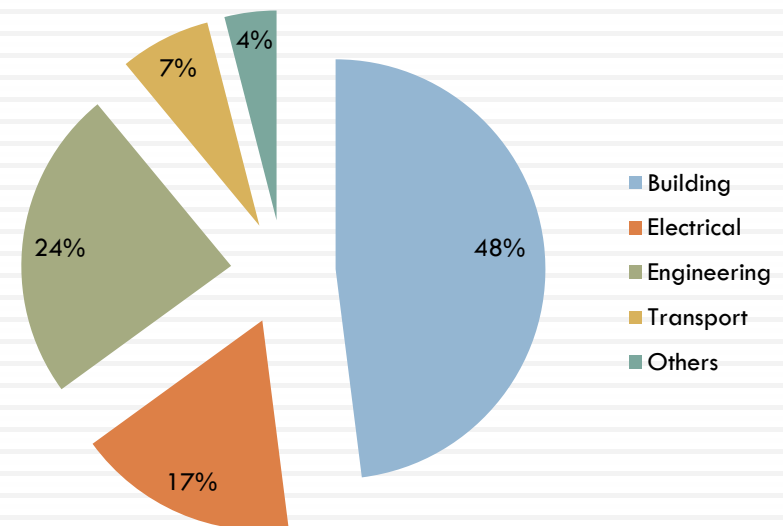
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CHARACTERISTICS

- Copper ranks third in world metal consumption after steel and aluminum. It is a product whose fortunes directly reflect the state of the world's economy.
- Copper is the best non-precious metal conductor of electricity.
- The metal's exceptional strength, ductility, and resistance to creeping and corrosion, makes it the preferred and safest conductor for building wiring.
- Copper is also used in power cables, either insulated or uninsulated, for high, medium and low voltage applications. Copper is an essential component of energy efficient motors and transformers and automobiles.

APPLICATIONS

Copper Sectoral Consumption



PRICE INFLUENCING FACTORS

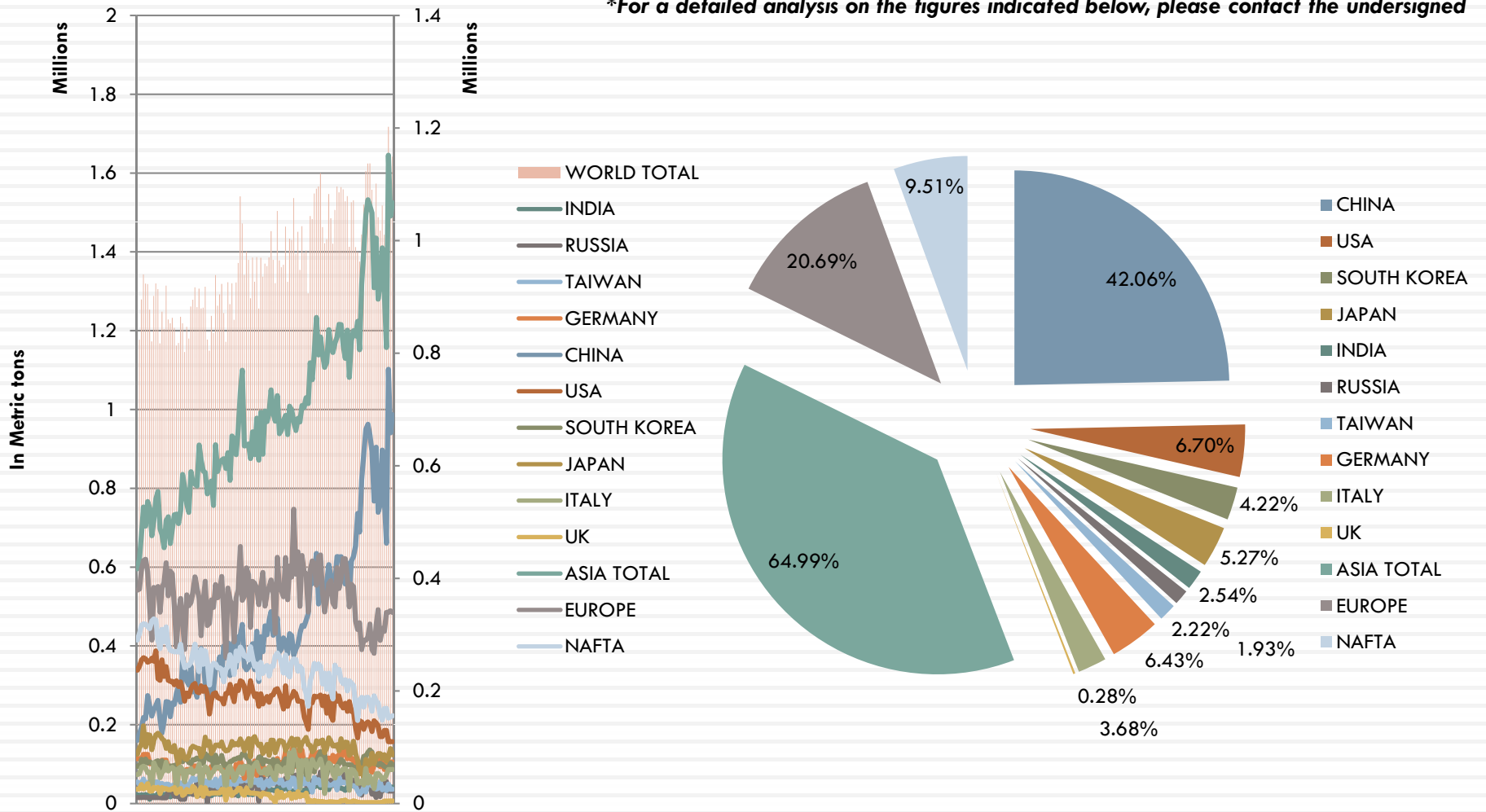
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- Copper prices in India are fixed on the basis of the rates that rule on LME the preceding day.
- World copper mine production through exploration of new mine and expansion of existing mine.
- Economic growth of the major consuming countries such as China, Japan, Germany etc.
- Growth and development in the Building, electronics and electrical industry.

CONSUMPTION – COUNTRY WISE

*Period 10 years (2000-2010)

**For a detailed analysis on the figures indicated below, please contact the undersigned*

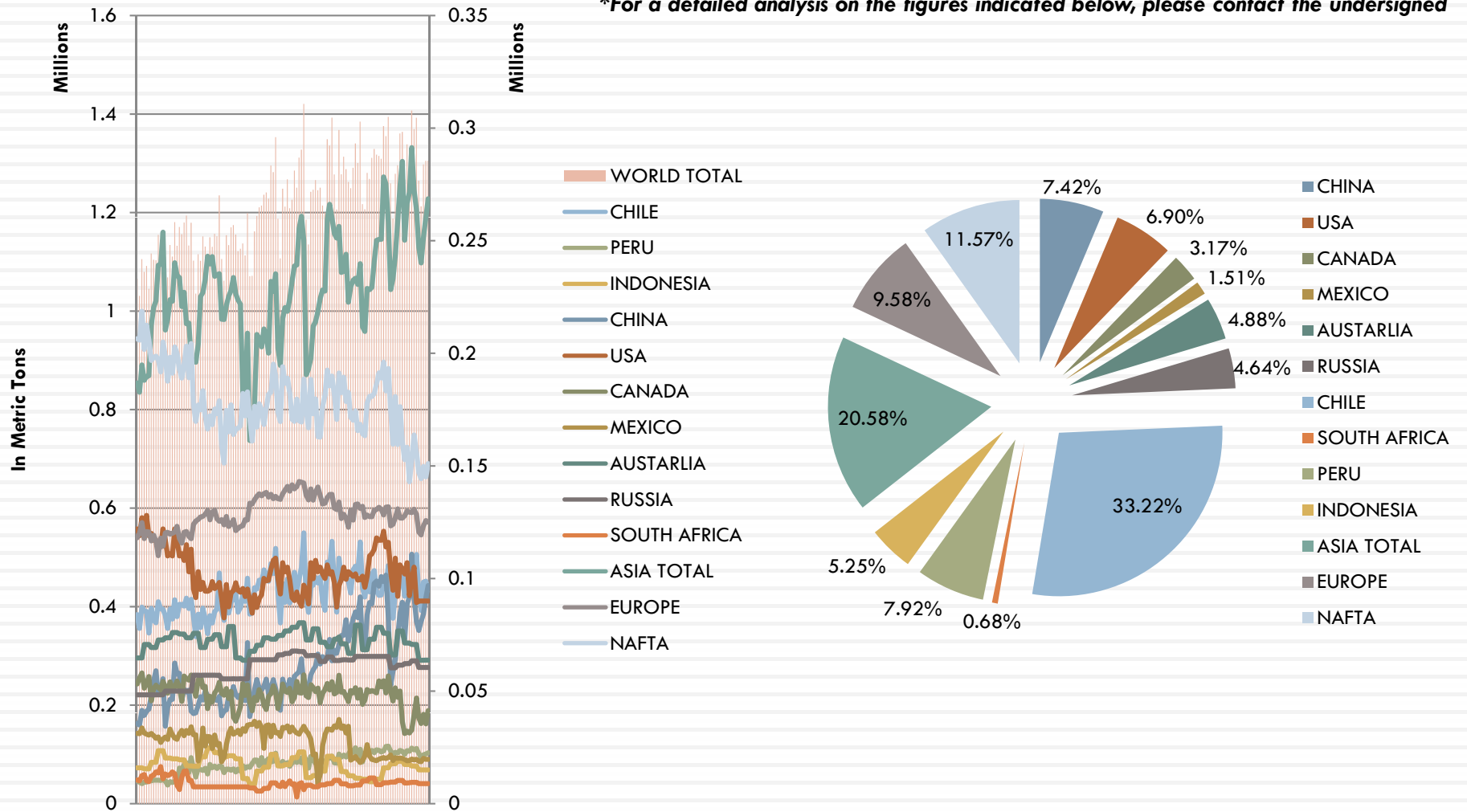


*Source – Bloomberg, ITI Research & WBMA

PRODUCTION – COUNTRY WISE

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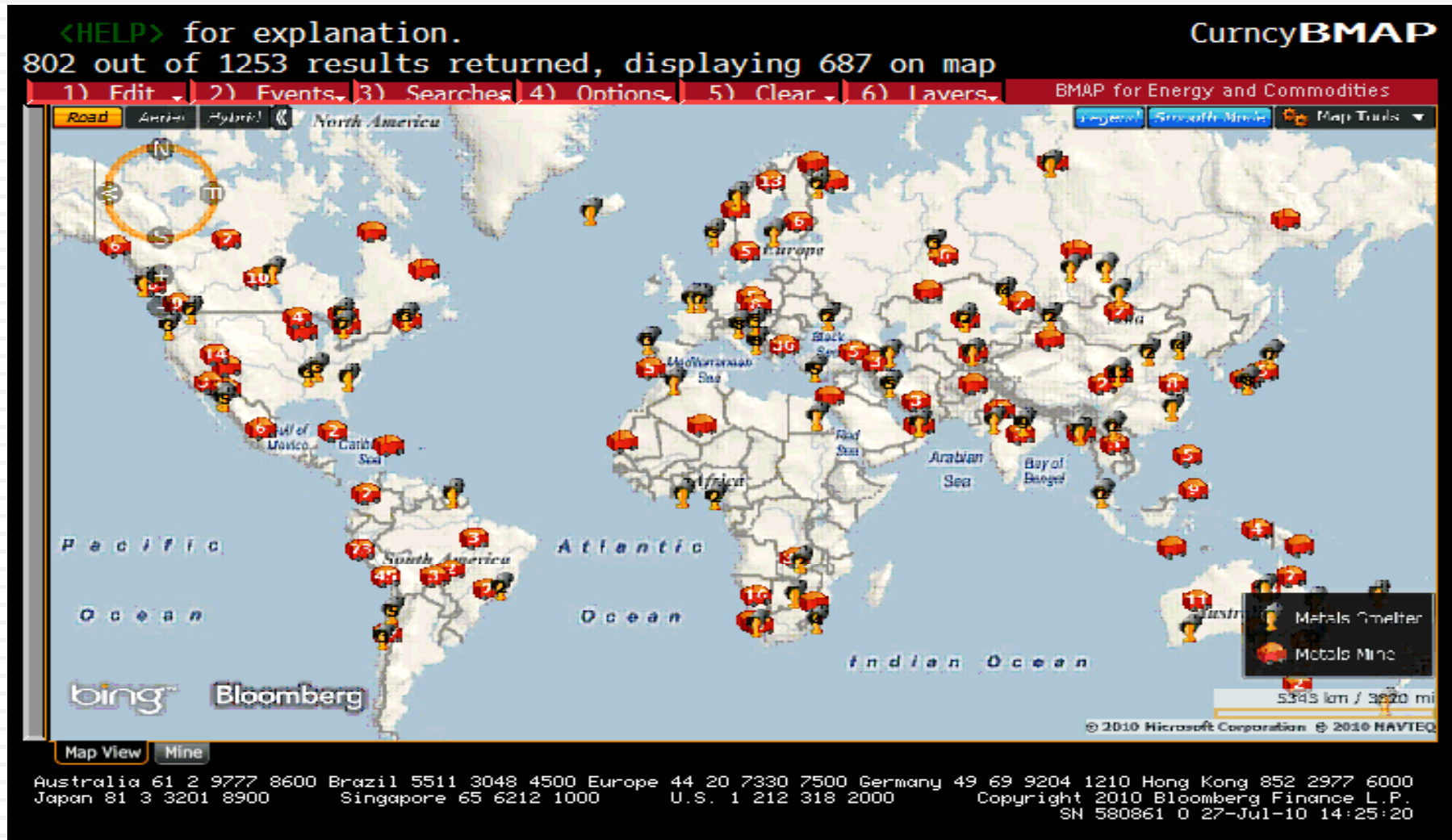


*Source – Bloomberg, ITI Research & WBMA

COPPER MINES & SMELTERS – WORLD MAP

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(location, capacity, etc), please contact the undersigned

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*Source – Bloomberg, ITI Research & WBMA

ALUMINUM

INTRODUCTION

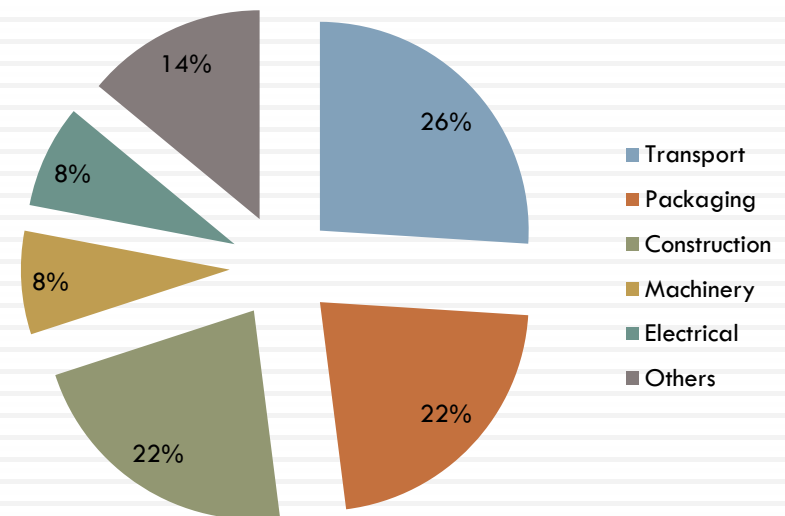
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CHARACTERISTICS

- Aluminum is the third most abundant element in the Earth's crust. In nature however it only exists in very stable combinations with other materials (particularly as silicates and oxides).
- Aluminum is light. Its density is only one third that of steel. Aluminum is resistant to weather, common atmospheric gases and a wide range of liquids.
- Aluminum has a high reflectivity, and therefore finds more decorative uses. It has high elasticity, which is an advantage in structures under shock loads.
- Aluminum keeps its toughness down to very low temperatures, without becoming brittle like carbon steels. It is easily worked and formed. It conducts electricity and heat nearly as well as copper.

APPLICATIONS

Aluminum Sectoral Consumption



PRICE INFLUENCING FACTORS

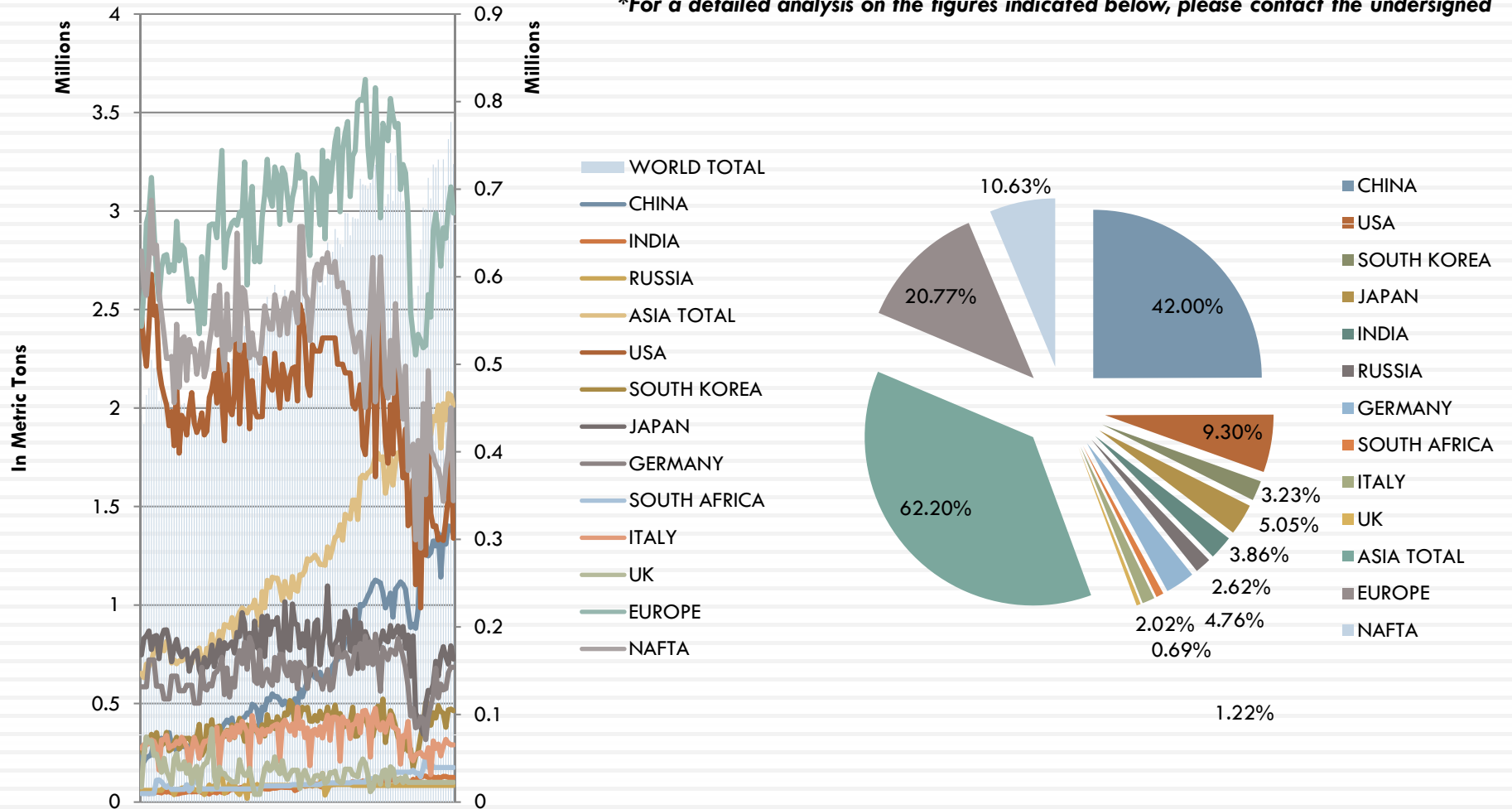
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- Changes in inventory level at LME warehouses
- Economic growth rate of major consuming countries
- Global growth and demand in major consuming industries
- Prices of the alternative metal(s)
- Participation of funds

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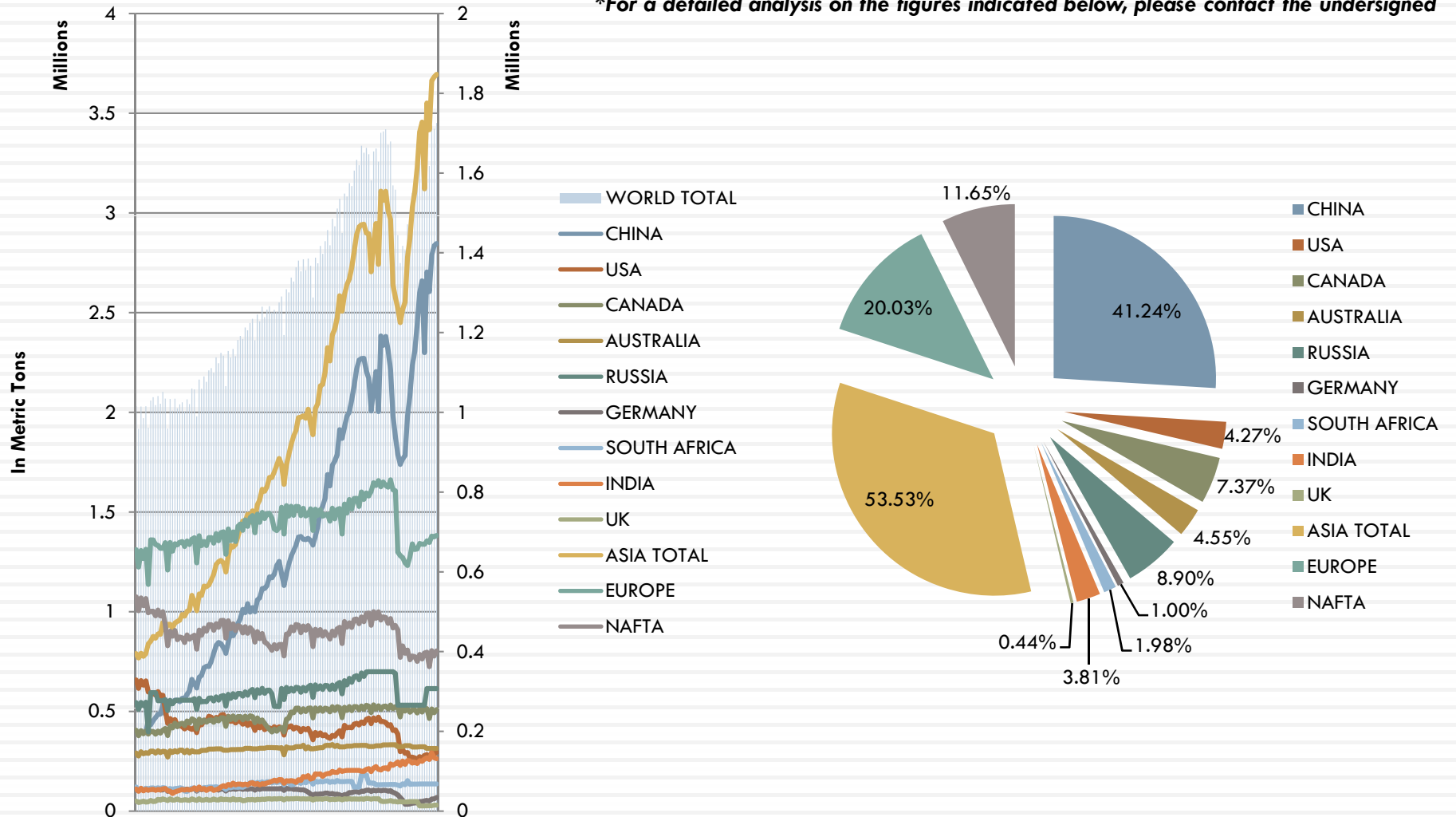


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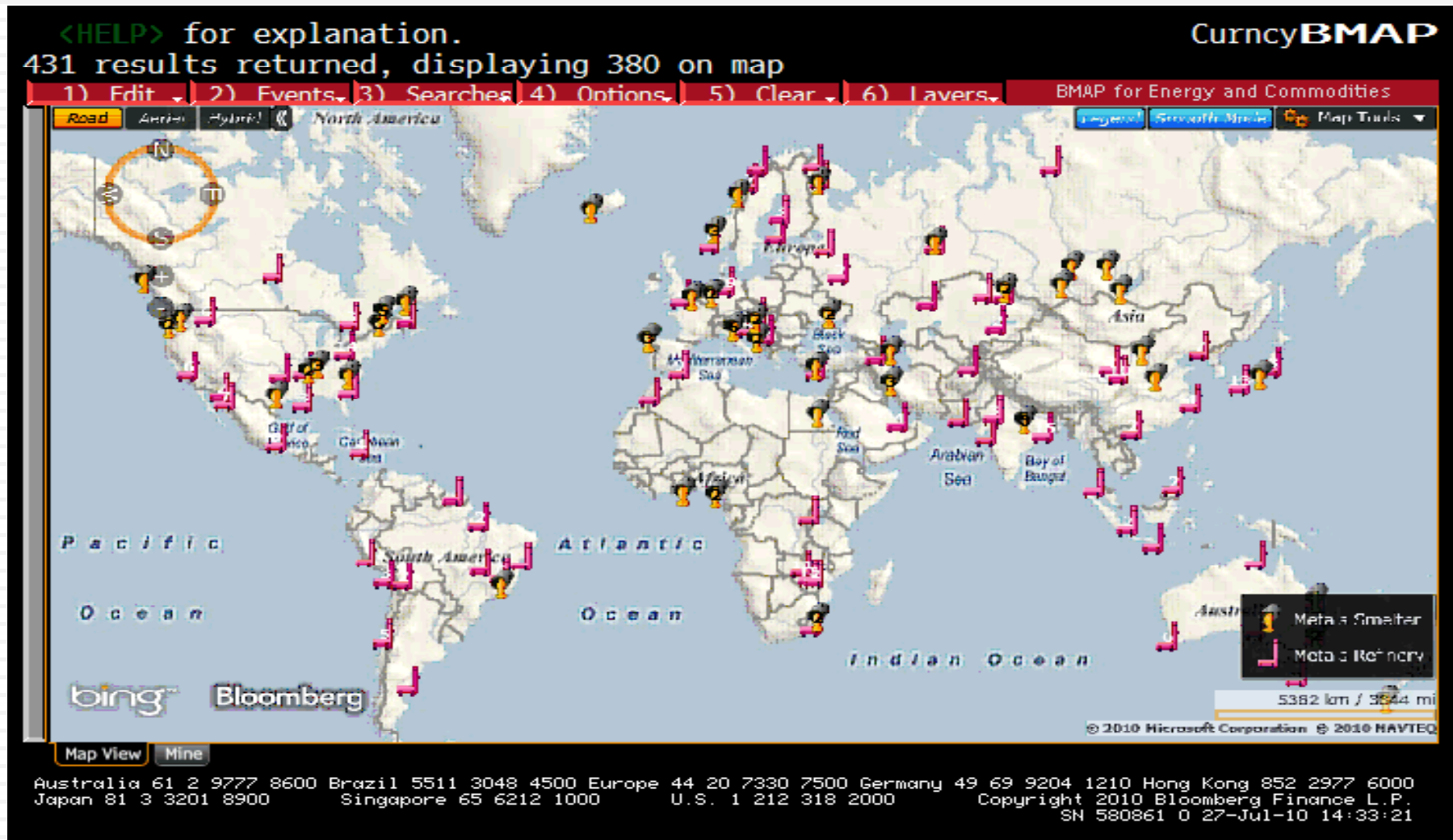


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ALUMINUM MINES & SMELTERS – WORLD MAP

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ZINC

INTRODUCTION

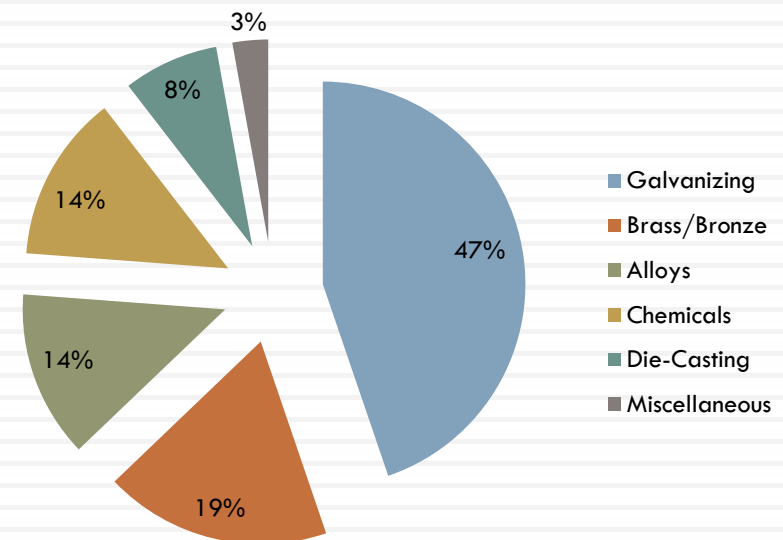
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CHARACTERISTICS

- Zinc is the fourth most widely used metal after steel, aluminum and copper in the world.
- Zinc is used for alloys; electroplating; metal spraying; electrical fuses; batteries; rubber; paint; glue and matches.
- The average indoor concentration of zinc is normally slightly higher than the outdoor level. Zinc occurs naturally in the earth's crust.

APPLICATIONS

Zinc Sectoral Consumption



PRICE INFLUENCING FACTORS

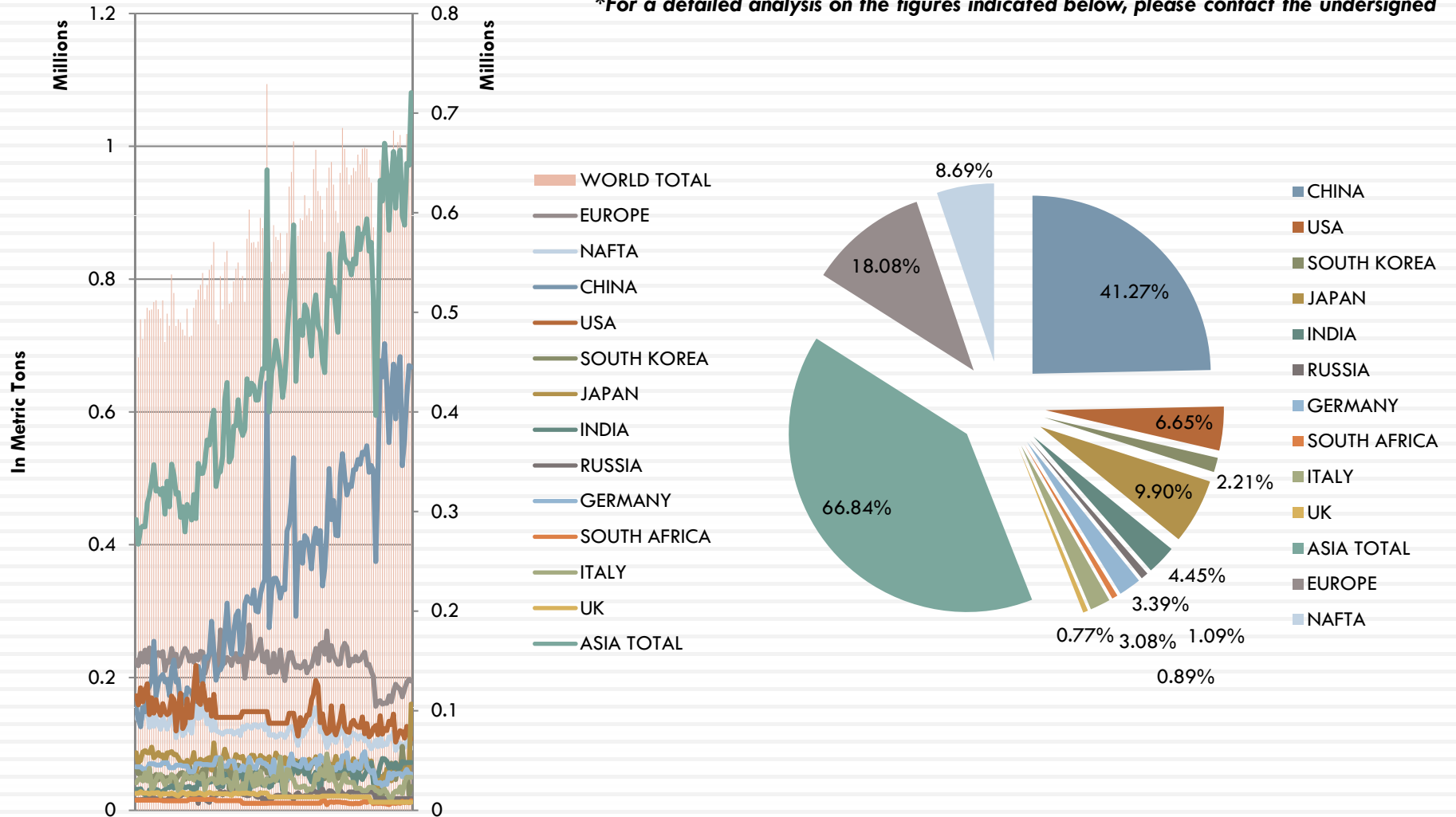
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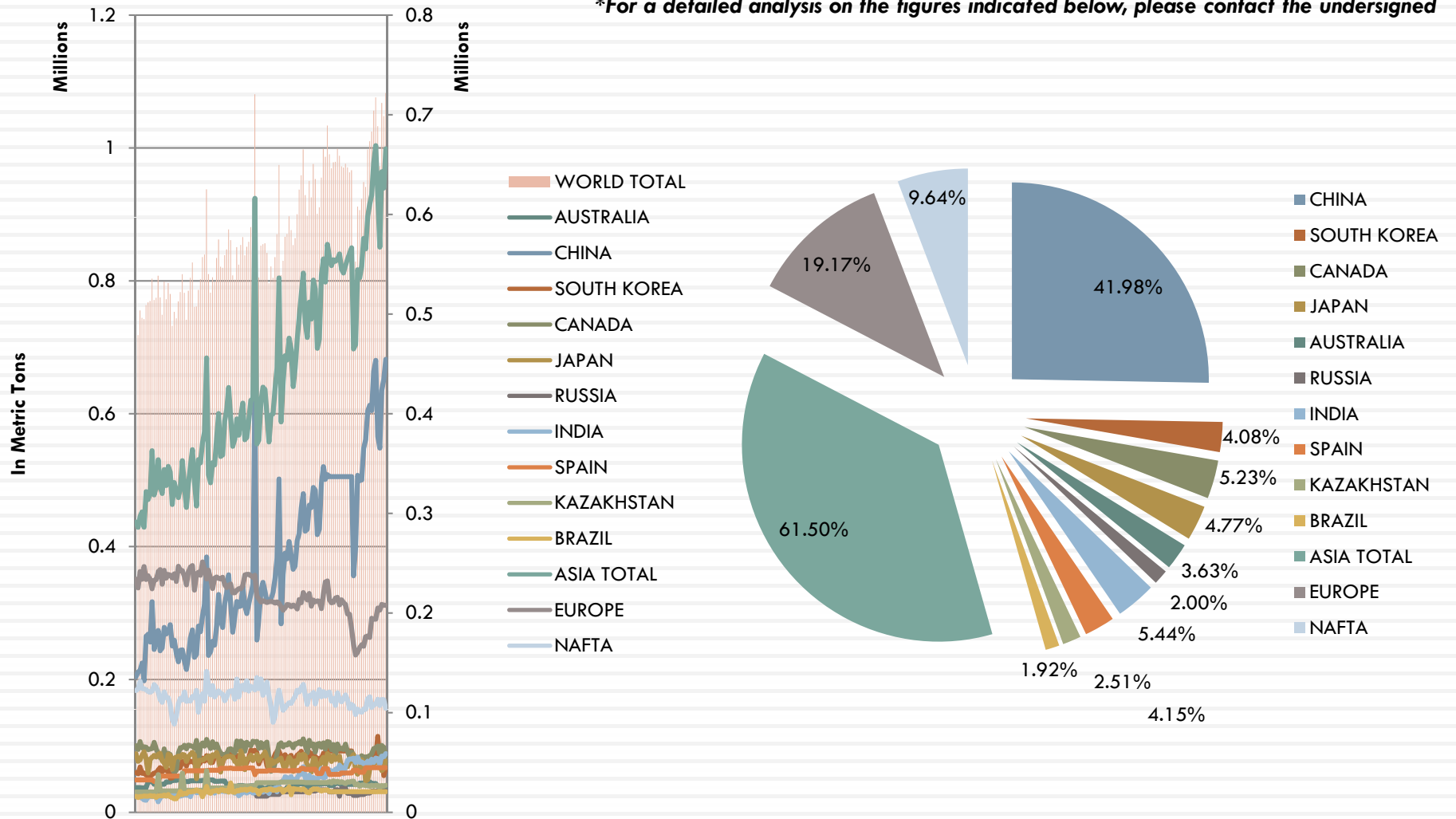


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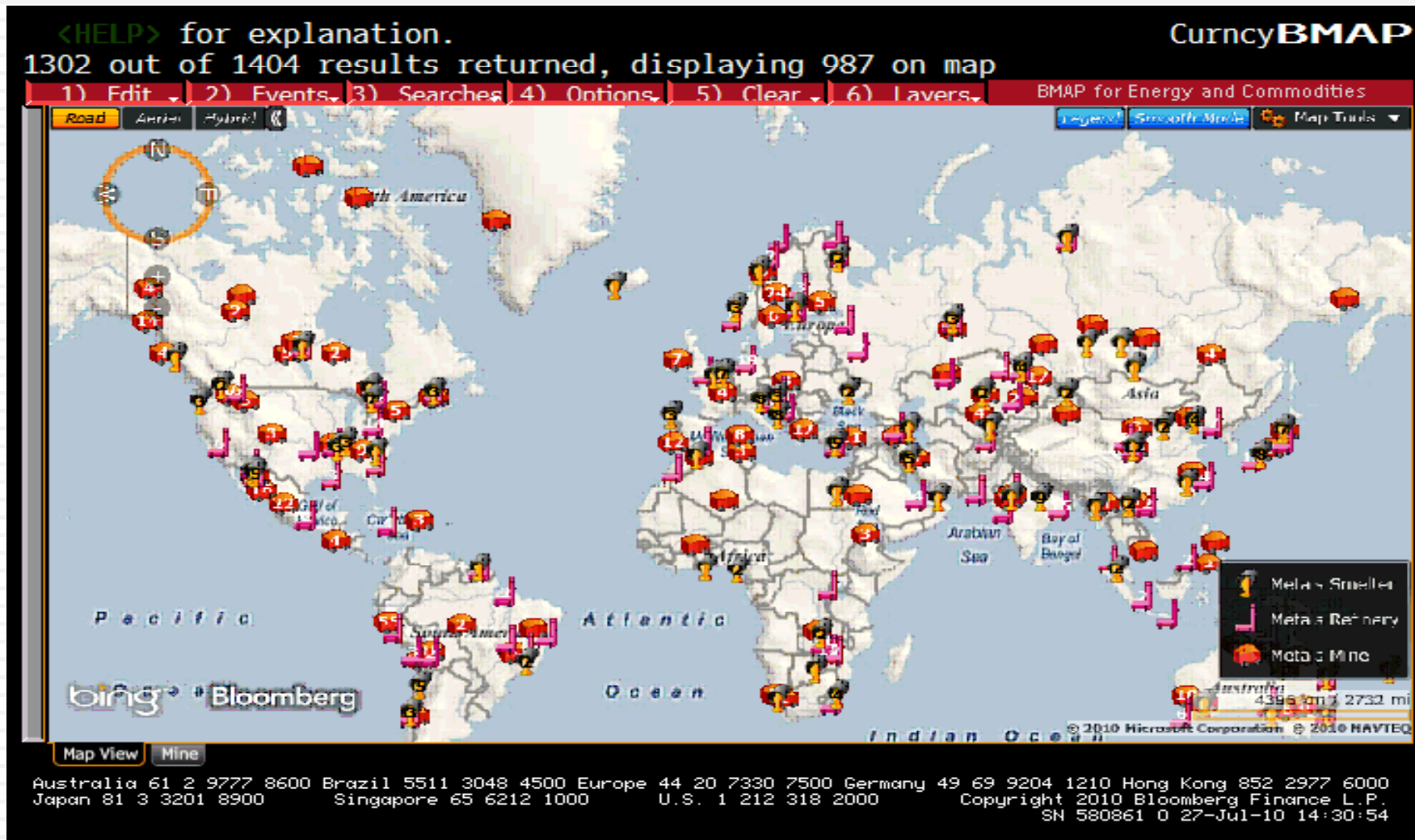


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ZINC MINES & SMELTERS – WORLD MAP

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NICKEL

INTRODUCTION

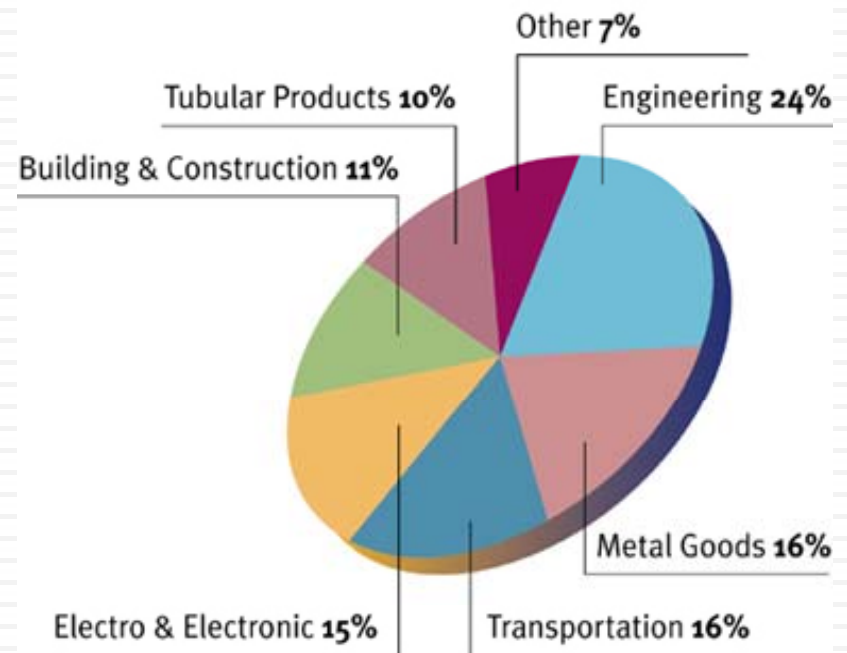
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CHARACTERISTICS

- Nickel finds its usage in various industries such as engineering, electrical and electronics, infrastructure, automobile and automobile components, packaging, Batteries etc.
- Among base metals Nickel is the most volatile owing to its strong demand and tight supply.
- Nickel demand is derived demand based on the growth of different industrial sector thus exhibits high volatility.
- About 65 % of nickel is used in manufacture of stainless steels, and 20 % cent in other steel and non-ferrous including "super" alloys, often for highly specialized industrial, aerospace and military applications.

APPLICATIONS

Who uses nickel alloys and stainless steels?



PRICE INFLUENCING FACTORS

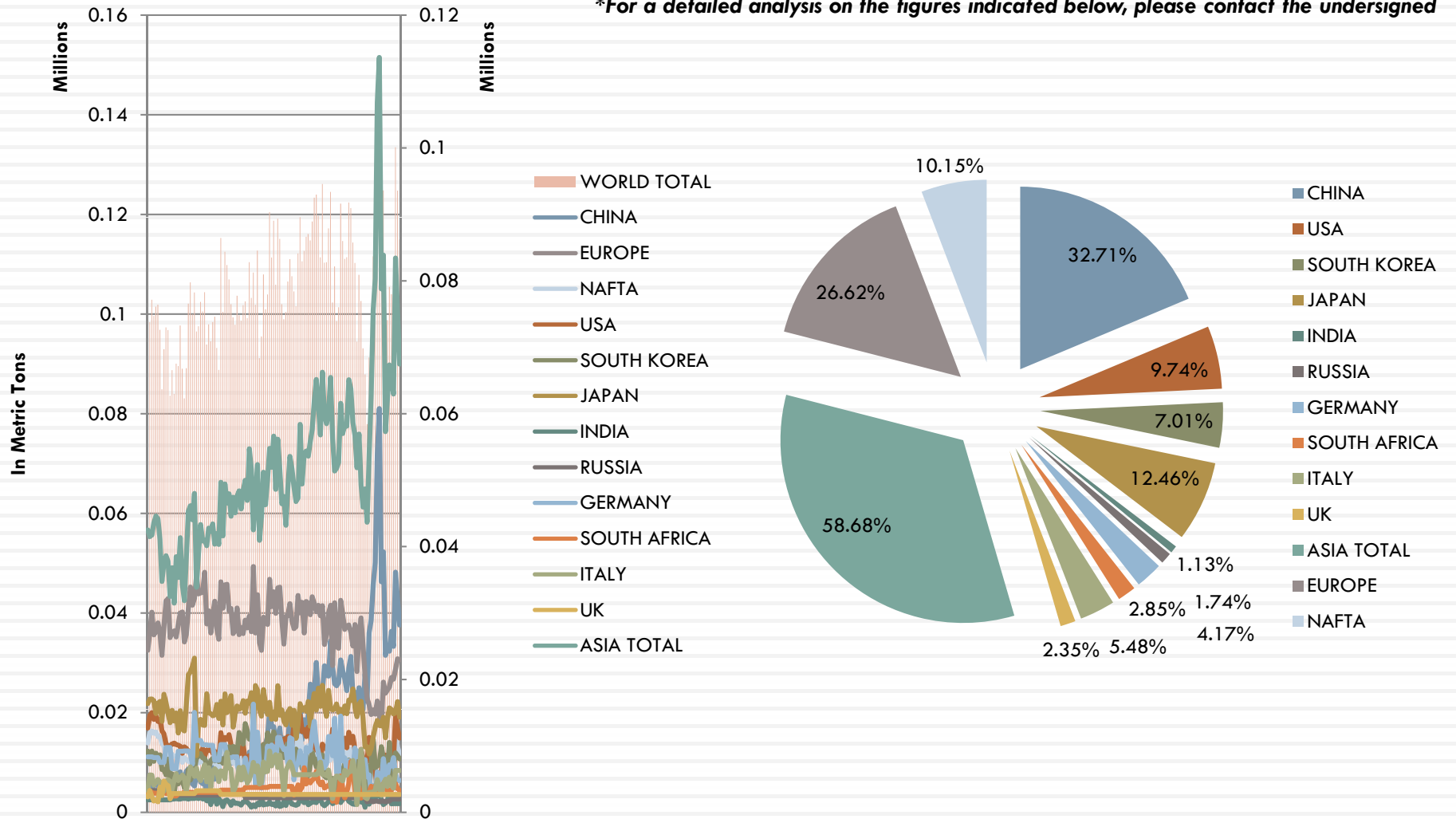
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- Above ground supply from scrap
- New mines discovery
- Nickel demand is derived demand thus the situation in the various industries
- Growth in consumption of Stainless steel

CONSUMPTION – COUNTRY WISE

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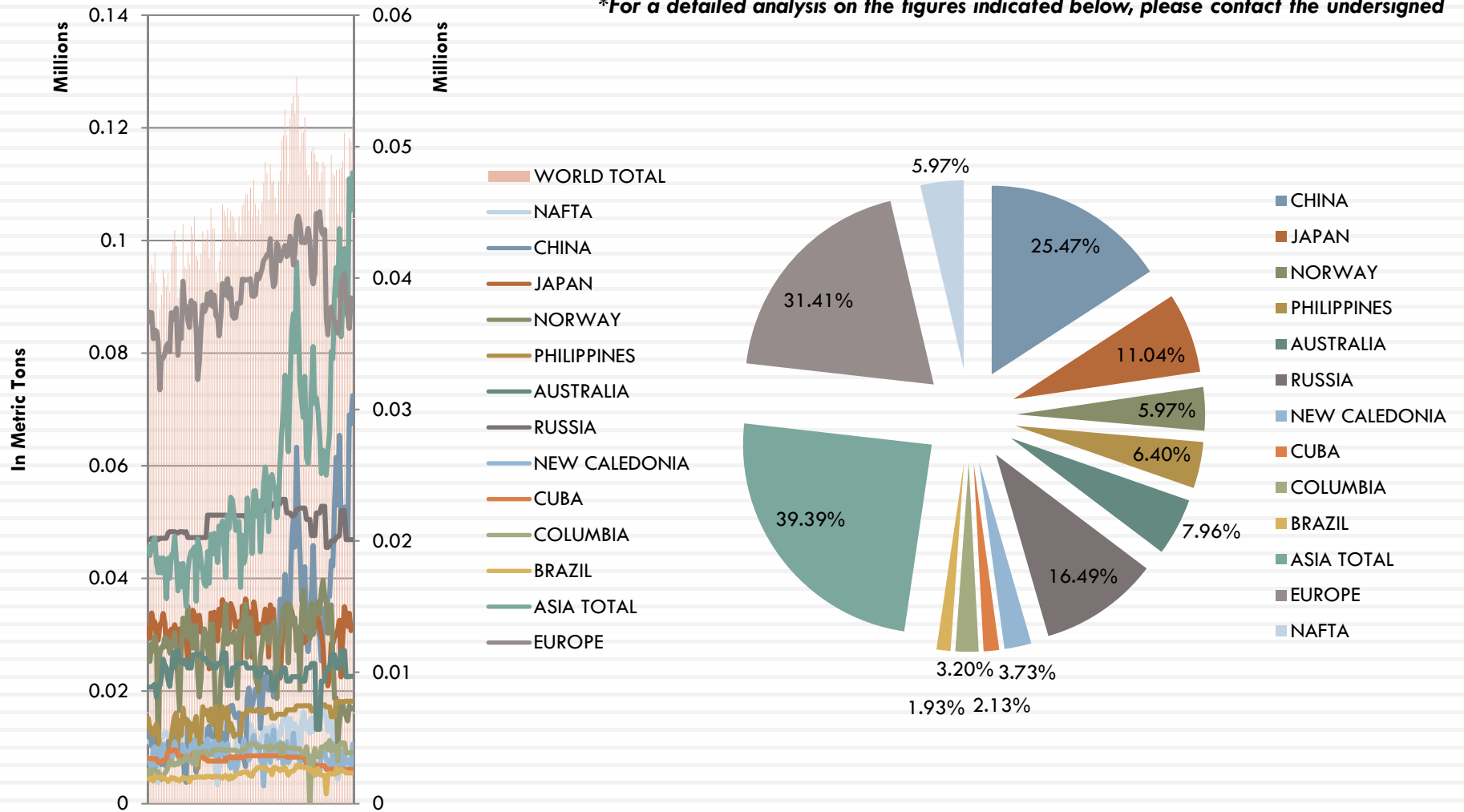
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PRODUCTION – COUNTRY WISE

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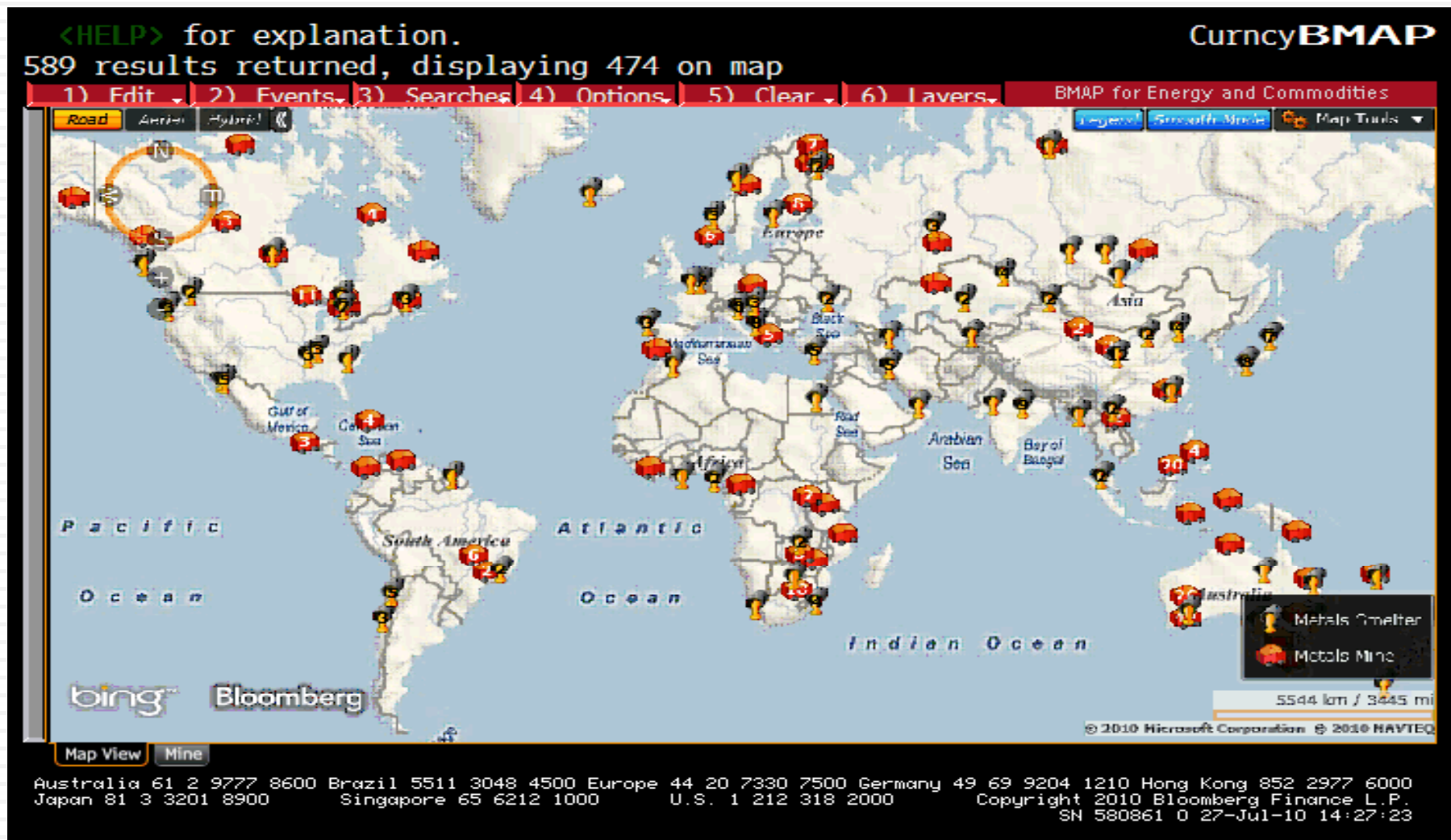


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NICKEL MINES & SMELTERS – WORLD MAP

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LEAD

INTRODUCTION

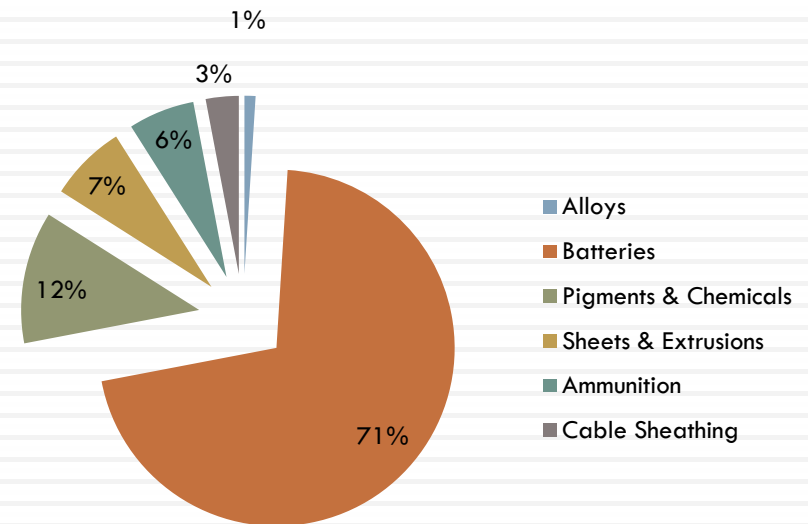
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CHARACTERISTICS

- Lead is a very corrosion-resistant, dense, ductile, and malleable blue-gray metal that has been used for at least 5,000 years.
- Today's major use of lead is in lead-acid storage batteries.
- It is also for soundproofing in office buildings, schools, and hotels.
- It is widely used in hospitals to block X-ray and gamma radiation and is employed to shield against nuclear radiation both in permanent installations and when nuclear material is being transported. .

APPLICATIONS

Lead Sectoral Consumption



PRICE INFLUENCING FACTORS

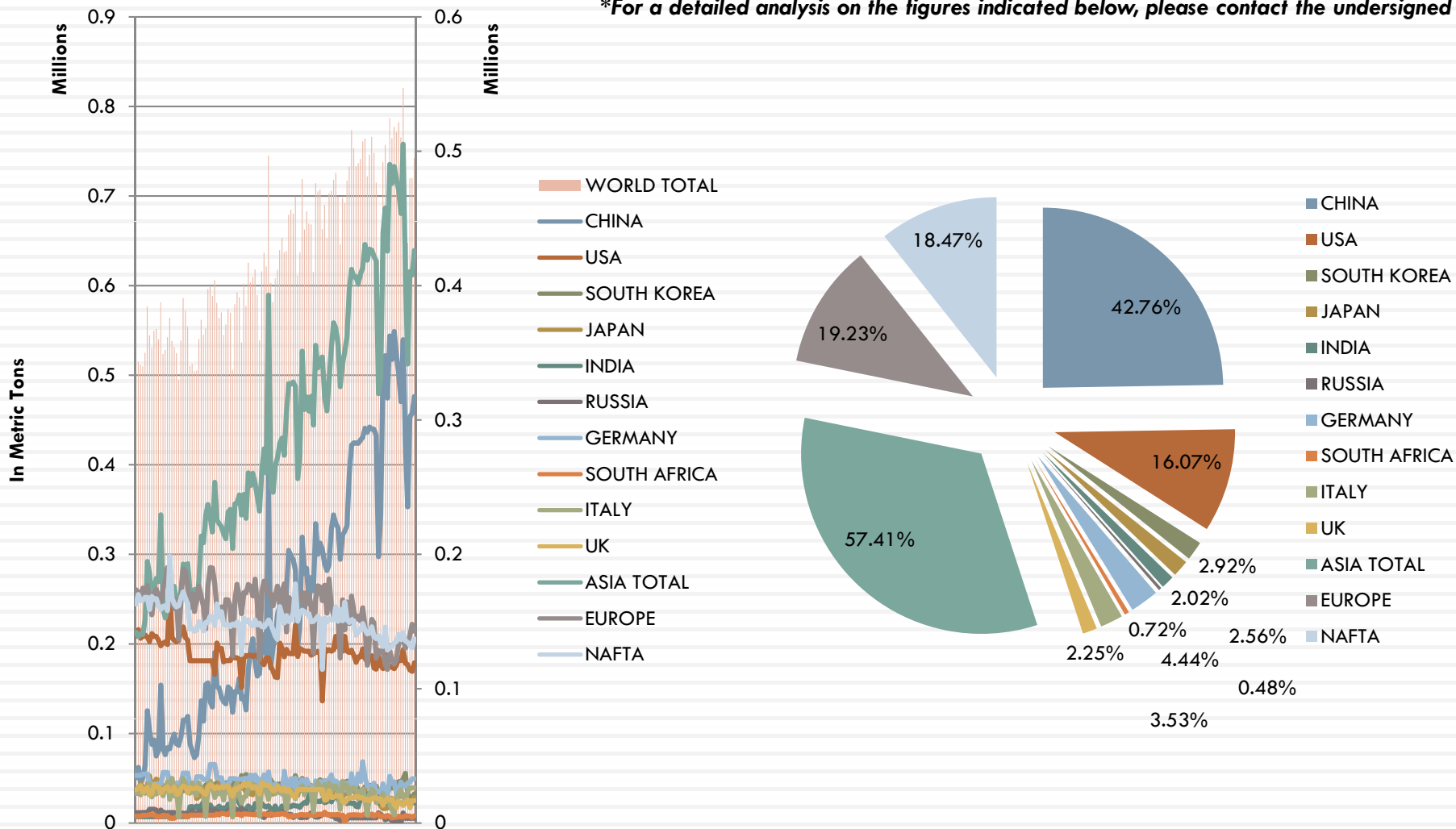
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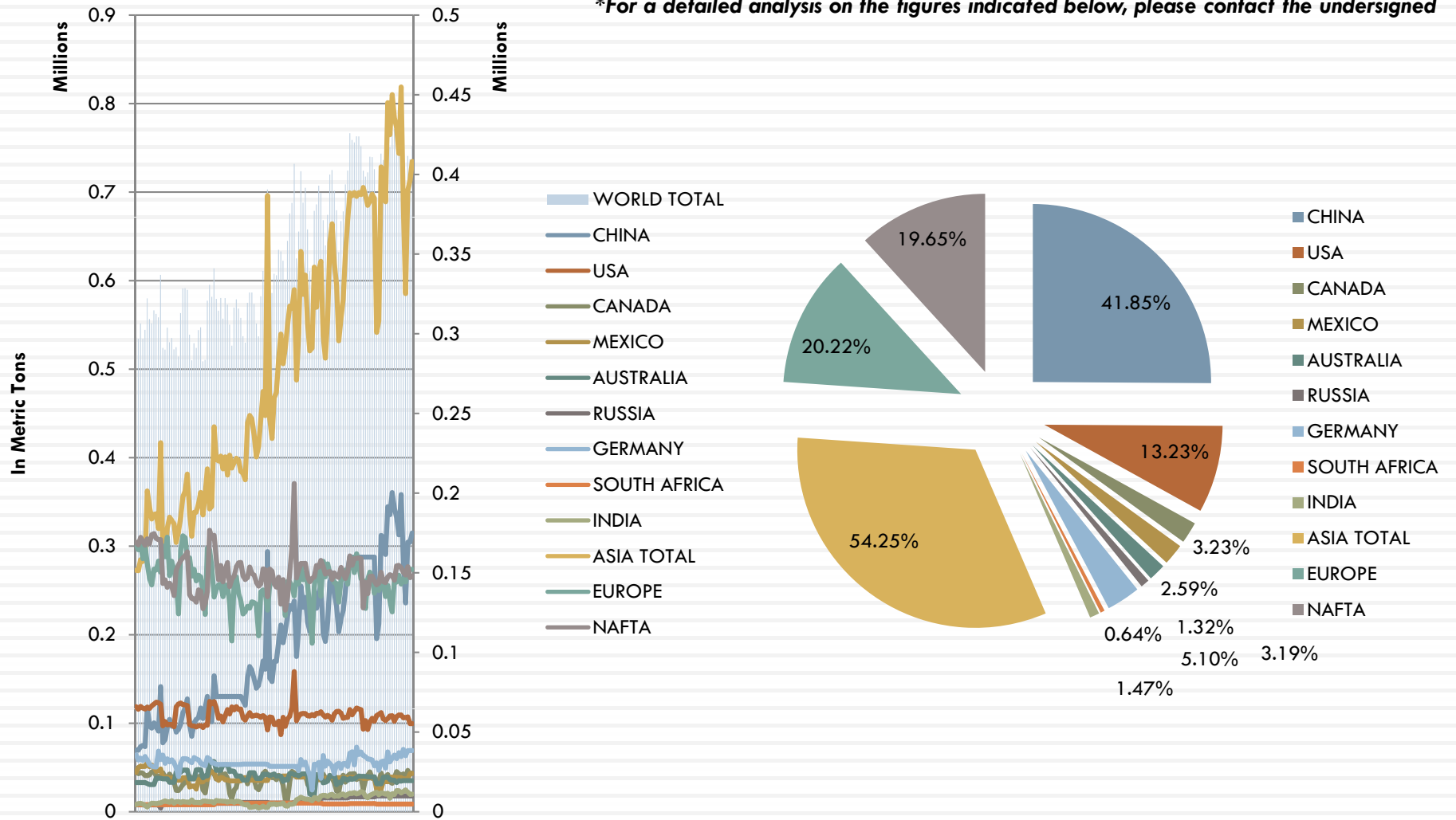


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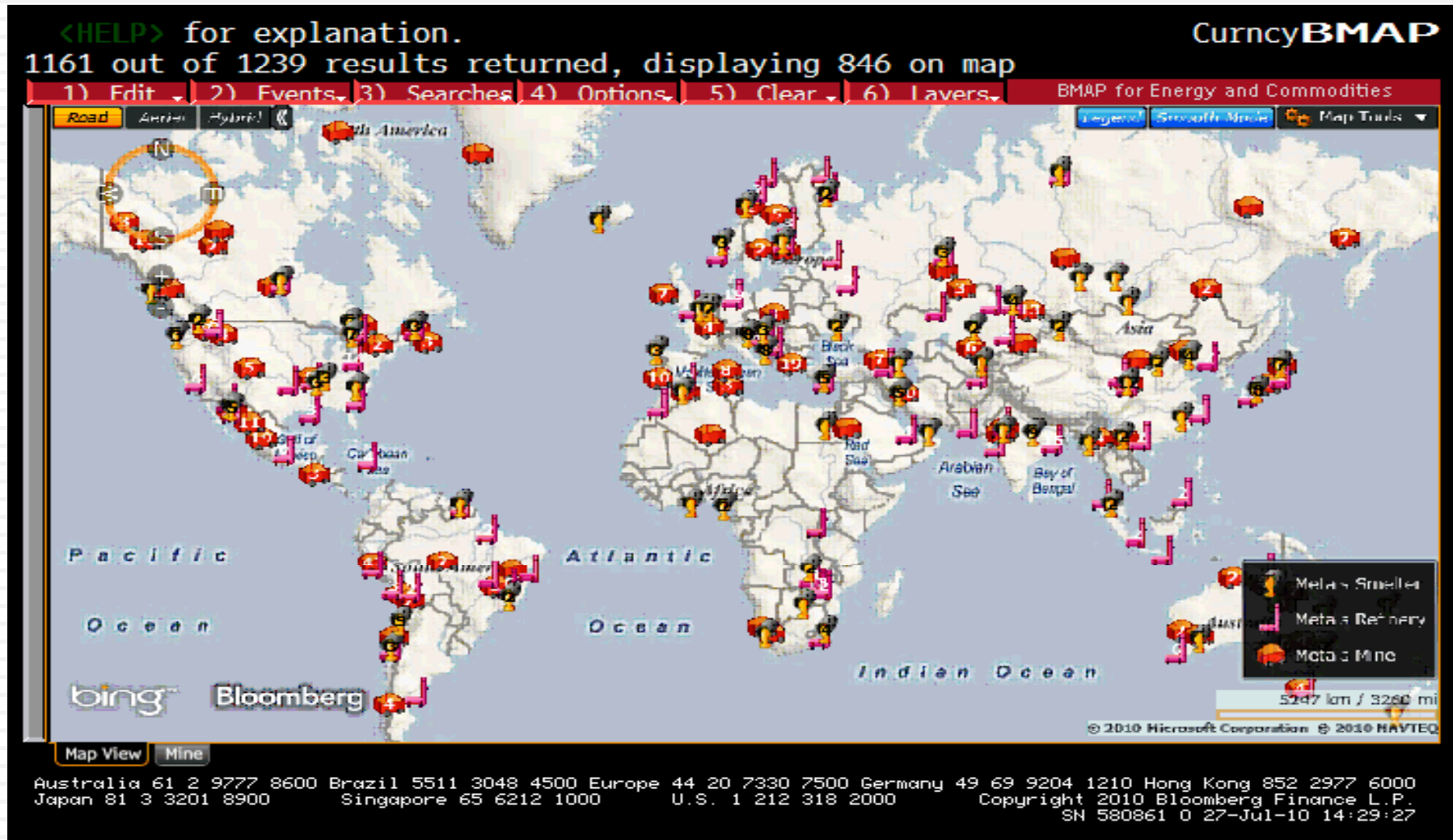


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LEAD MINES & SMELTERS – WORLD MAP

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STEEL

INTRODUCTION

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CHARACTERISTICS

- Steel is an alloy consisting mostly of iron, with varying amounts of other elements like carbon, manganese, chromium, silicon, oxygen etc.
- Different grades of steel are produced by adjusting the chemical composition and by slight variations in the different stages of steel-making process. Currently, there are more than 3000 catalogued grades of steel available.
- Steel market is primarily divided into two categories - flat and long.
 - Flat Steel: Plate or a (hot or cold) rolled strip product. Typical products are plates, HR coils, HR sheets, CR coils, CR sheets, Galvanized plates (GP), Galvanized coils (GC), pipes etc
 - Long Steel: Rod or a bar. Typical rod products are the reinforcing rods made from sponge iron for concrete, ingots, billets, engineering products, gears tools etc.

APPLICATIONS

- Construction
- Shipbuilding
- Pipeline Transport
- Mining
- Offshore construction
- Aerospace
- Heavy equipment
- Railroad tracks
- Wires, etc.

PRICE INFLUENCING FACTORS

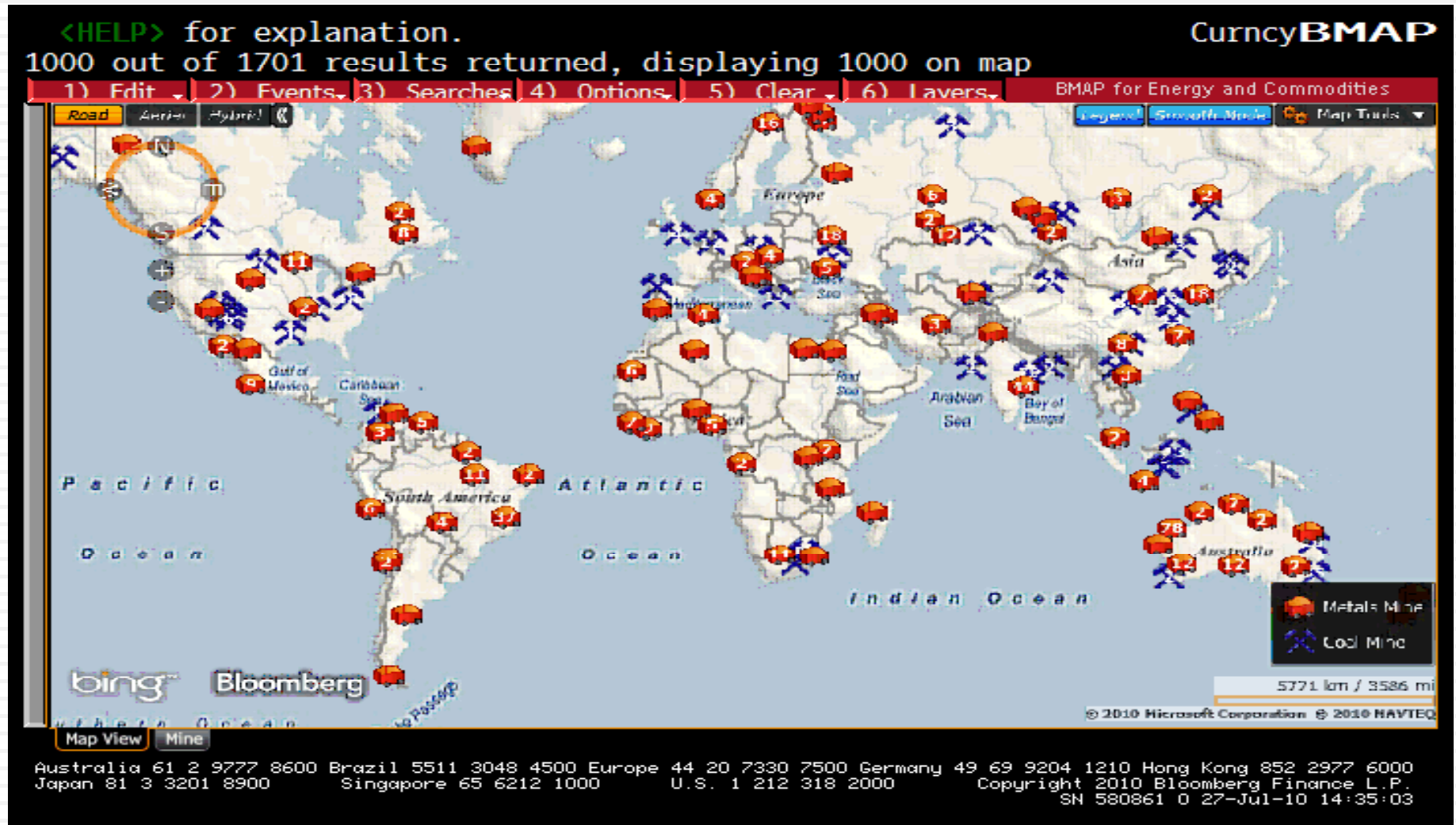
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- Indian steel prices are largely influenced by the domestic demand and supply scenario, with major consumption coming from infrastructural development activities.
- While, the international price trend strongly influences the domestic price trend, the domestic prices do not strictly follow any single global market on a daily basis.
- Changes in duty tariffs, variations in prices of input materials like iron, coal, power, freight which influence the cost of production impact the price of steel.
- Globally, steel production has outstripped consumption in recent years, despite capacity utilization being only around 50% in major developed markets like US, EU and Japan.
- Demand has fallen in developed countries and the demand from emerging economies like China, India and Brazil is the only stabilizing factor in the global steel market currently.
- The steel market is influenced by macro-economic factors like strength of the economy, Government spending on infrastructure, interest rates, currency movements etc as these factors have a profound influence on public, private and individual demand for steel.

IRON ORE & COAL MINES – WORLD MAP

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*Source – Bloomberg, ITI Research & WBMA

Supply-Demand Equilibrium

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- Economic growth led robust global demand (via housing, electrical, gen engineering, transport etc).
- Strong Demand growth from on-going surge in Chinese consumption (this is increasingly getting important)
- Inventories is important part of the trade which impacts the backwardation significantly. As the LME does not own these warehouses, the inventory must be watched in due consideration of the material which is stored but not against the LME position.
- Supply disruption due to labor contract disputes at mines.
- Capacities to accommodate the resumption in the demand. Substitution also plays role in longer term.
- Investment funds have found great value in this complex, and their perception about the global growth would directly impact their interest in this segment.