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Pt
Platinum

PLATINUM
DIVERSE DRIVERS OF DEMAND

Platinum is one of the **rarest metals in the world** with unique physical and catalytic properties making it highly valued across a number of **diverse demand segments.**

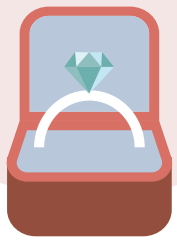
THE DRIVERS OF DEMAND

There are four core segments of platinum demand:

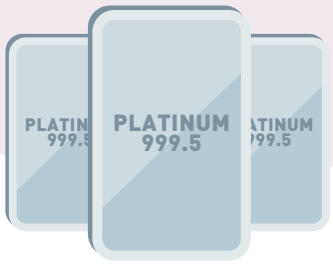
AUTOMOTIVE
31–43%*

INDUSTRIAL
22–27%*

JEWELLERY
24–32%*



INVESTMENT
0–20%*



* Minimum and maximum ranges over period 2015 - 2019

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AUTOMOTIVE

Platinum demand from auto catalysts has equated to between

31–43%

of total demand in the last 5 years

Platinum is central to **reducing vehicle emissions** both now and in the long term

Platinum in **spark plugs** and **O_2 sensors** supports more efficient engines

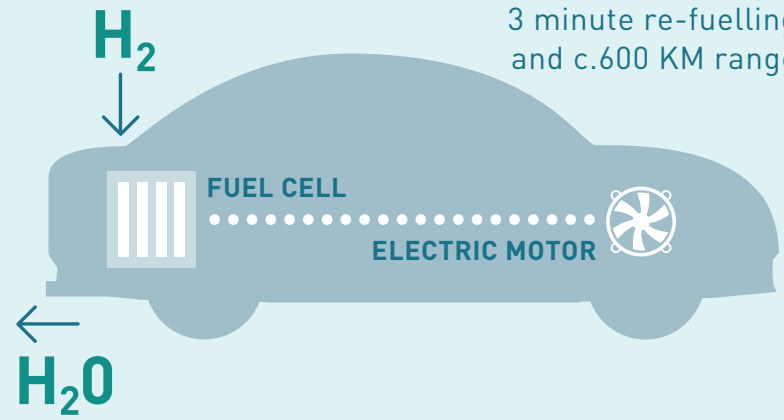
Platinum supports **diesel** cars which are on average **20% more CO_2 efficient** than an average gasoline car

20%
MORE EFFICIENT

Euro 6d (RDE) and China 6 compliant catalysts use more platinum per car to achieve the lower emissions requirements

Platinum use in gasoline (substitution for palladium) is a material demand growth driver

Platinum's superior catalytic and conductive properties in fuel cells turn **hydrogen and air into water** producing electricity to power **electric cars with zero emissions**



Fuel cell electric vehicles (FCEV) use more than **twice the amount of platinum** in internal combustion engine vehicles. **Early adopters** with commercially available cars include Toyota, Hyundai and Honda

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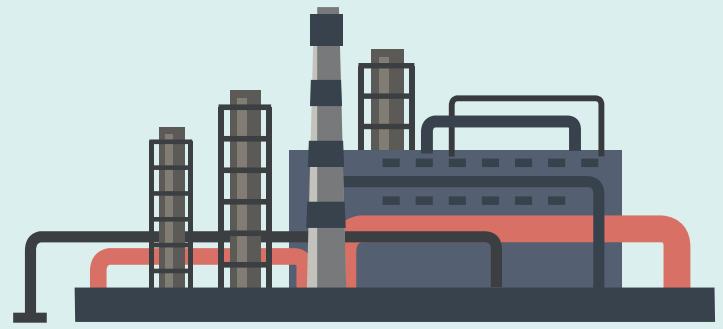
INDUSTRIAL

Platinum's diverse other industrial uses account for between

22–27%

of total demand in the last 5 years

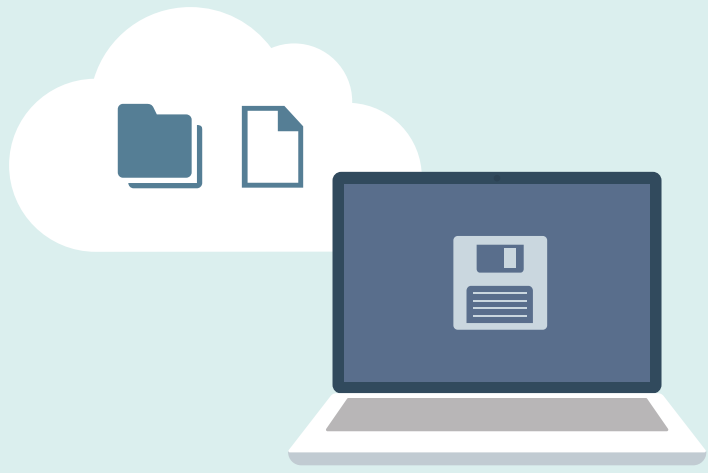
Platinum catalysts **increase yields** in chemical processes, an example being more high octane fuel per barrel of oil

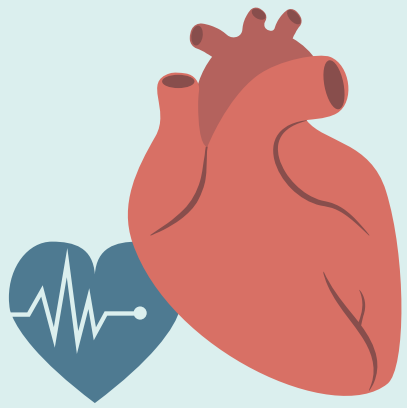


Platinum improves chemical process efficiency and increases media storage capacity globally

Platinum is necessary for vessels that **hold and form molten glass** for liquid crystal displays, optical and ophthalmic, glass fibre and other applications

Platinum increases storage density on hard discs for laptops and **servers supporting cloud storage**. Platinum also supports numerous electronic applications





Platinum is biocompatible and remains in the body **connecting pacemakers** and makes instruments visible during **keyhole surgery.** Platinum-based therapies have been at the **forefront of cancer treatment** for more than forty years.

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JEWELLERY

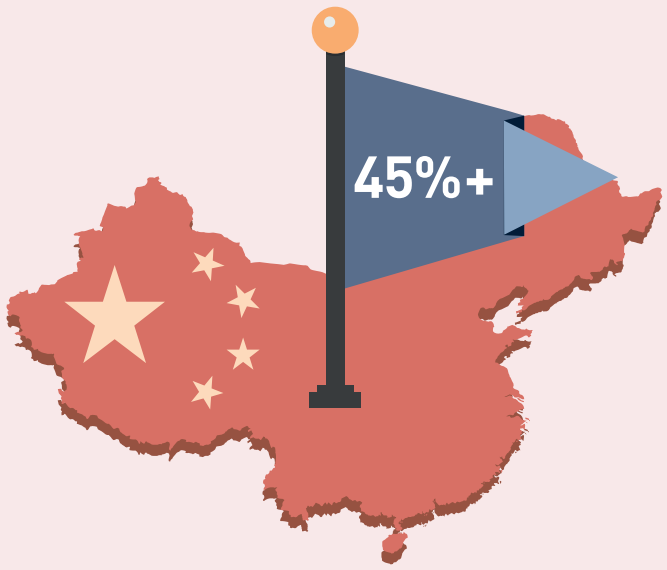
Global annual jewellery demand has been between

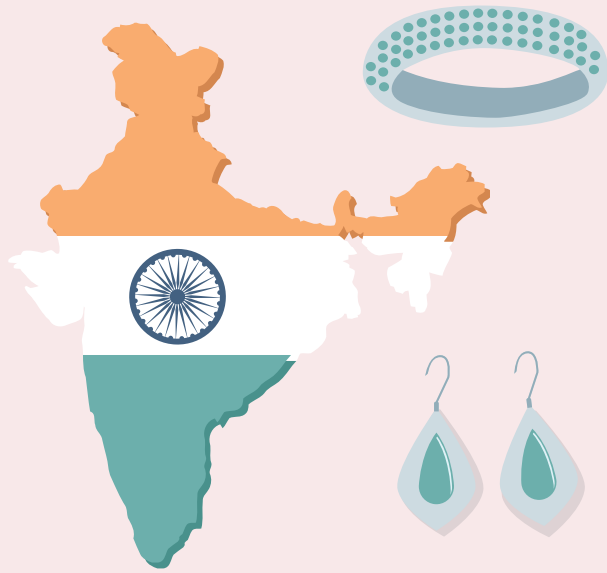
24–32%

of total platinum demand over the last 5 years

Platinum jewellery has achieved **global premier status** and **strong association with love.** Market developed by Platinum Guild International since 1975

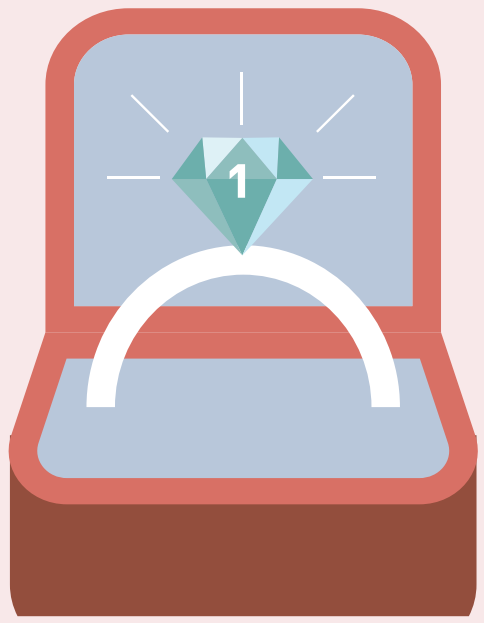
China is the world's largest market for platinum jewellery





India is a **driver of growth** including a rising men's jewellery market

In the US, platinum is a **preferred** choice for engagement rings, while in Japan it is the favoured choice for **generations** of brides and grooms



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INVESTMENT

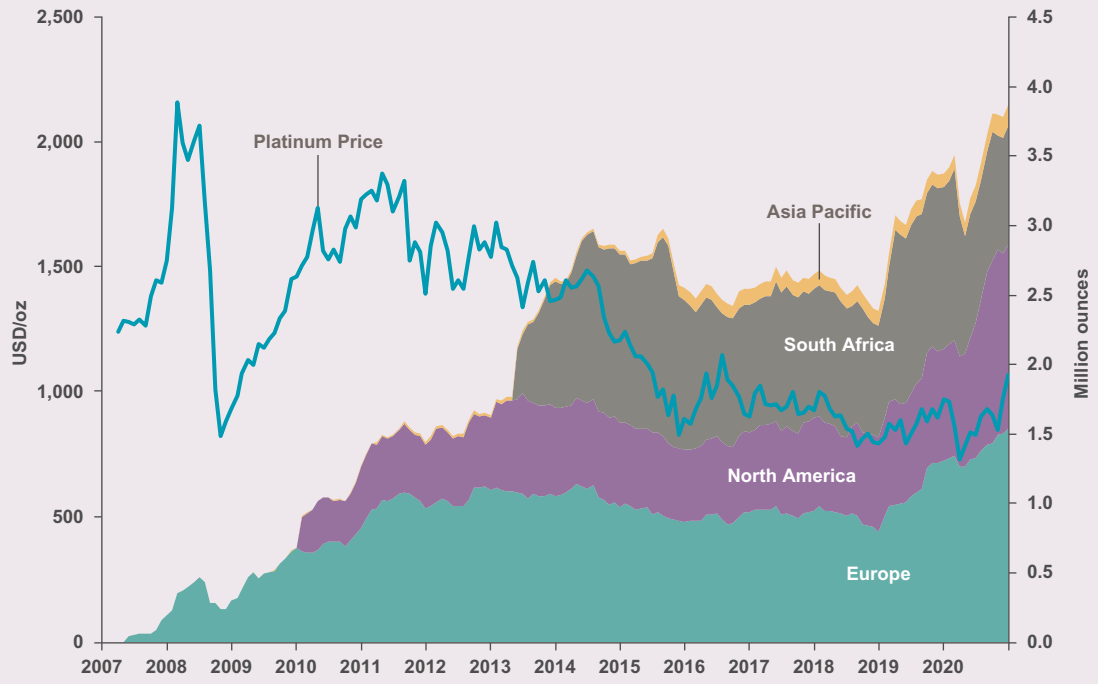
Investment is the most variable factor over the past five years, ranging between

0–20%

of total demand (net investment, excluding increases or decreases in above ground stocks)

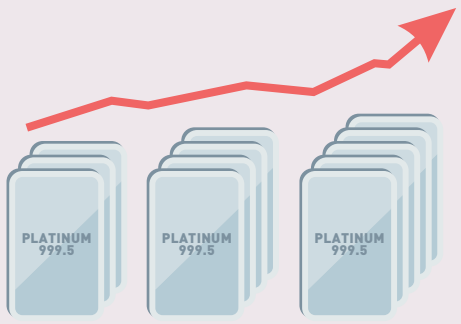
Created in late 2014, the World Platinum Investment Council (WPIC) exists to **stimulate investment demand** for platinum

Physical platinum exchange traded funds (ETFs) have become firmly established in several regions. Investors added circa 1.5 million ounces in ETFs over 2019 and 2020

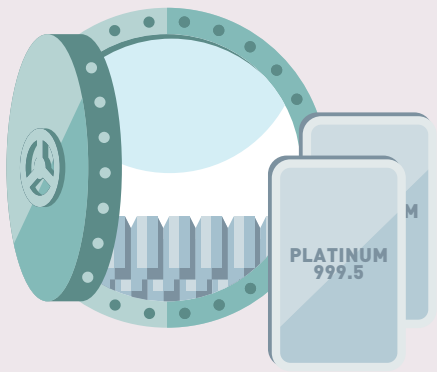


Examples of investment products in different geographies

Private individuals in Japan have been able to invest in platinum **accumulation plans** since the 1980s

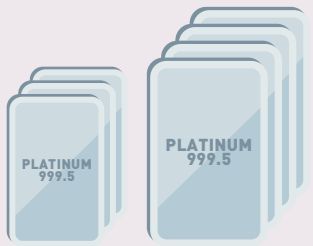


High-net worth and institutional investment in **vaulted bars**



North American individuals investing **platinum bullion coins and bars** into their retirement savings plans

Chinese citizens can access a growing range of **platinum bullion products**



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