

PLATINUM QUARTERLY PRESENTATION Q2 2022

London

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AGENDA: PLATINUM QUARTERLY: Q2 2022 AND FULL YEAR 2022

1. Introduction

Paul Wilson, CEO

2. Platinum Quarterly, fundamentals review

Trevor Raymond

3. Current themes

Edward Sterck

4. Questions

Paul Wilson

Trevor Raymond

Edward Sterck



AGENDA: PLATINUM QUARTERLY: Q2 2022 AND FULL YEAR 2022

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- Supply, demand and balance: Q2'22 and full year 2022 estimates

Trevor Raymond, Director of Research

3. Current thematics

Edward Sterck

4. Questions

Paul Wilson

Trevor Raymond

Edward Sterck



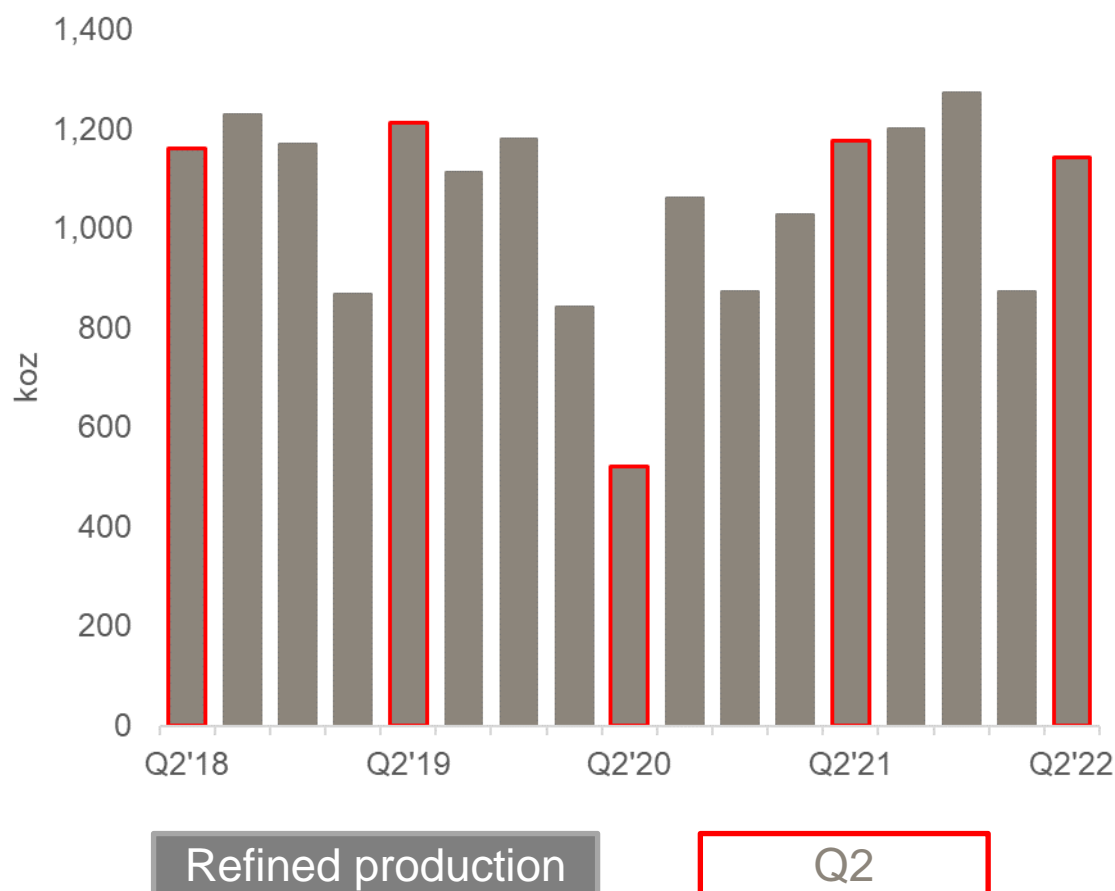
Q2 2022 SUPPLY: TOTAL SUPPLY DOWN 7% ON MINE CHALLENGES AND REDUCED VEHICLE SCRAPPAGE

SUPPLY	Q2 2021	Q1 2022	Q2 2022
Refined Production	1,566	1,269	1,546
South Africa	1,175	873	1,144
Zimbabwe	125	117	124
North America	75	66	65
Russia	137	163	161
Other	53	49	52
Inc(-)/Dec(+) in Producer Inventory	+18	-26	-21
Total Mining Supply	1,584	1,243	1,525
Recycling	523	445	437
Autocatalyst	409	329	327
Jewellery	98	98	92
Industrial	17	17	17
Total Supply	2,106	1,688	1,961

- Refined mine supply down -1% YoY (-20 koz)
- Recycling supply down 16% YoY (-86 koz)
- Total Q2 supply down 7% YoY (-145 koz)

Q2 2022 SOUTH AFRICAN MINE SUPPLY: DOWN 3% YOY ON PRODUCTION CHALLENGES

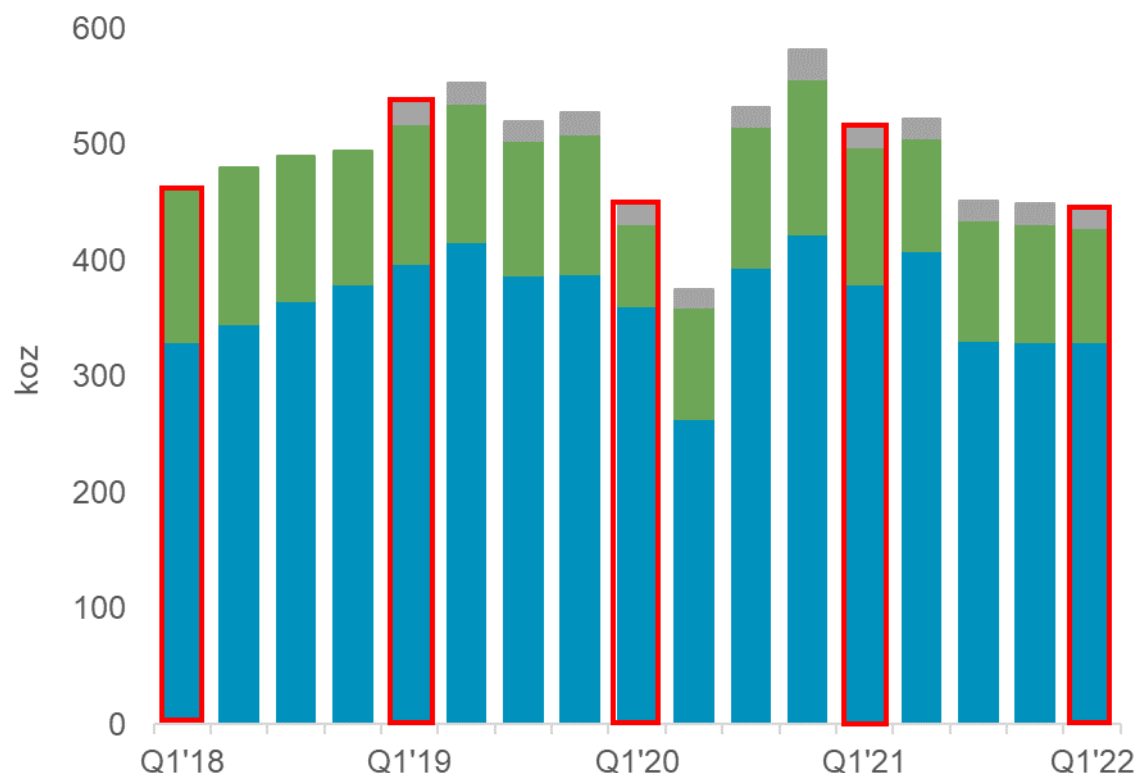
South African refined mine production (koz)



- South Africa refined supply down 3% YoY (-31 koz) due to:
 - COVID disruptions
 - Labour shortages
 - Start of severe power outages

Q2 2022 RECYCLING: DOWN 16% ON REDUCED VEHICLE SCRAPPAGE AND JEWELLERY TRADE-INS

Recycling (koz)



Autocatalyst

Jewellery

Industrial

Q2

- Recycling down 16% YoY (-86 koz) and 2% QoQ
- Autocatalyst recycle down 20% YoY (-82 koz) on postponed scrappage of end of life vehicles
- Jewellery recycle down 5% YoY (-5 koz) on low jewellery sales and related trade-ins

Q2 2022 DEMAND: ROBUST AUTO, JEWELLERY AND INDUSTRIAL OFFSET BY INVESTMENT

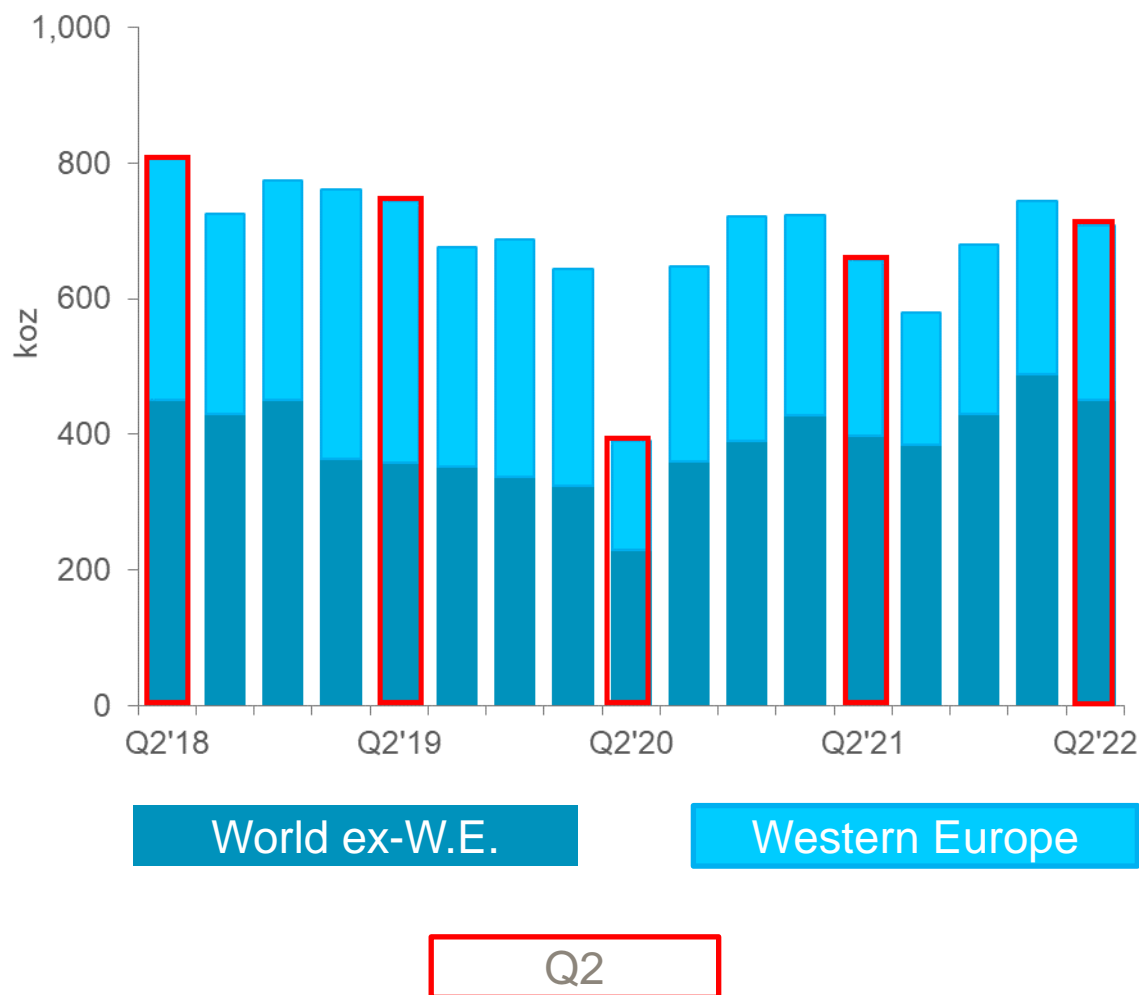
DEMAND	Q2 2021 // Q1 2022	Q2 2022
Automotive	657	744
Autocatalyst	657	744
Non-road	†	†
Jewellery	470	469
Industrial	546	510
Chemical	195	114
Petroleum	39	42
Electrical	35	30
Glass	83	109
Medical & Biomedical	62	68
Other	131	147
Investment	187	-165
Change in Bars, Coins	107	61
Change in ETF Holdings	31	-169
Change in Stocks Held by Exchanges	49	-58
Total Demand	1,860	1,558
Balance	247	130

Q2 demand changes YoY:

- Automotive up 8% (+50 koz)
- Jewellery up 5% (+26 koz)
- Industrial marginally higher (+5 koz)
- Investment lower by -329 koz
 - Bar and coin -37 koz
 - ETF -120 koz
 - Exchange stocks -172 koz
- Market surplus of 349 koz

Q2 2022 AUTOMOTIVE: HIGHER LOADINGS OFFSET LOWER PRODUCTION VOLUMES

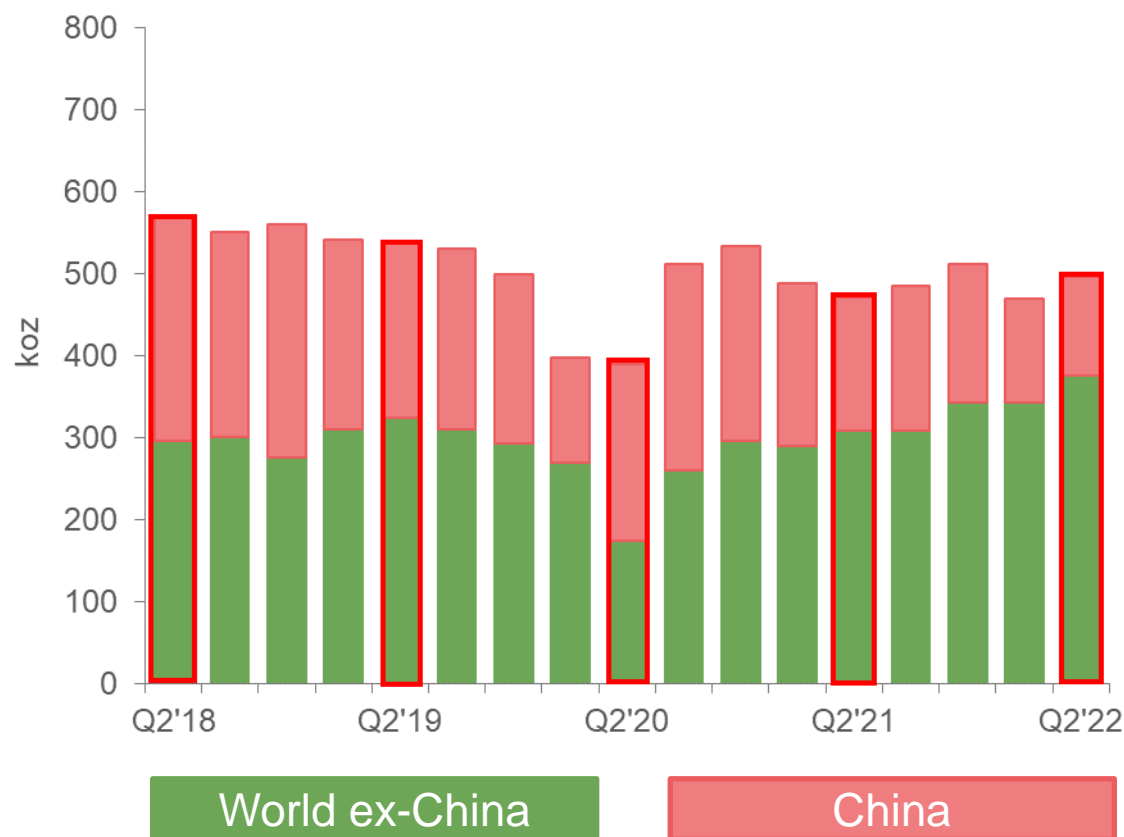
Automotive demand (koz)



- Automotive demand up 8% YoY (+50 koz) at 708 koz
- Platinum demand resilient despite weak automotive production
 - -4% YoY ICE LV production
 - -31% YoY HD production
- Increased loadings from higher share of platinum in HD aftertreatment and platinum for palladium substitution in gasoline LV

Q2 2022 JEWELLERY: UP 5% YOY ON GROWTH IN MOST MARKETS OFFSETTING COVID IMPACTED CHINA

Jewellery demand (koz)

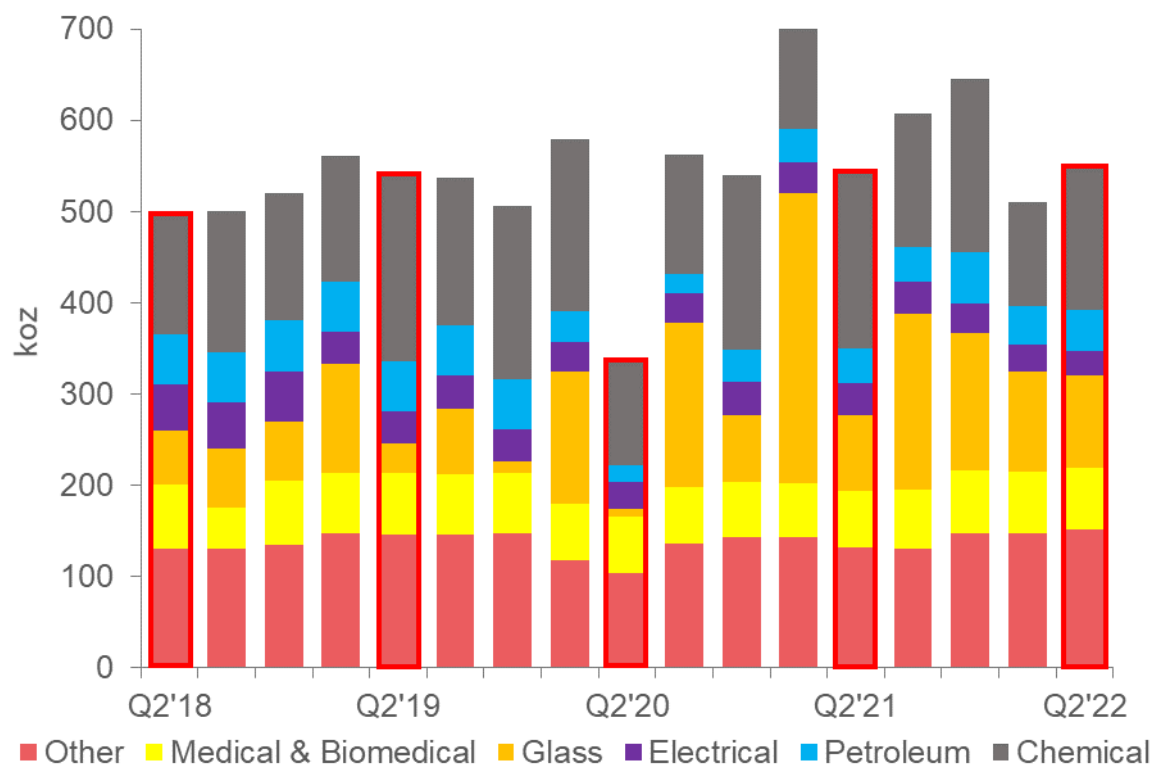


- Jewellery up 5% YoY (+26 koz)
- Growth in most markets ex. China
- China demand impacted by severe COVID related lockdowns
- Healthy gains in US and Japan
- Indian demand +80% YoY – now above pre-COVID levels

Q2

Q2 2022 INDUSTRIAL DEMAND: BROADLY FLAT YEAR ON YEAR AFTER RECORD 2021 CAPACITY ADDITIONS

Industrial demand by category (koz)

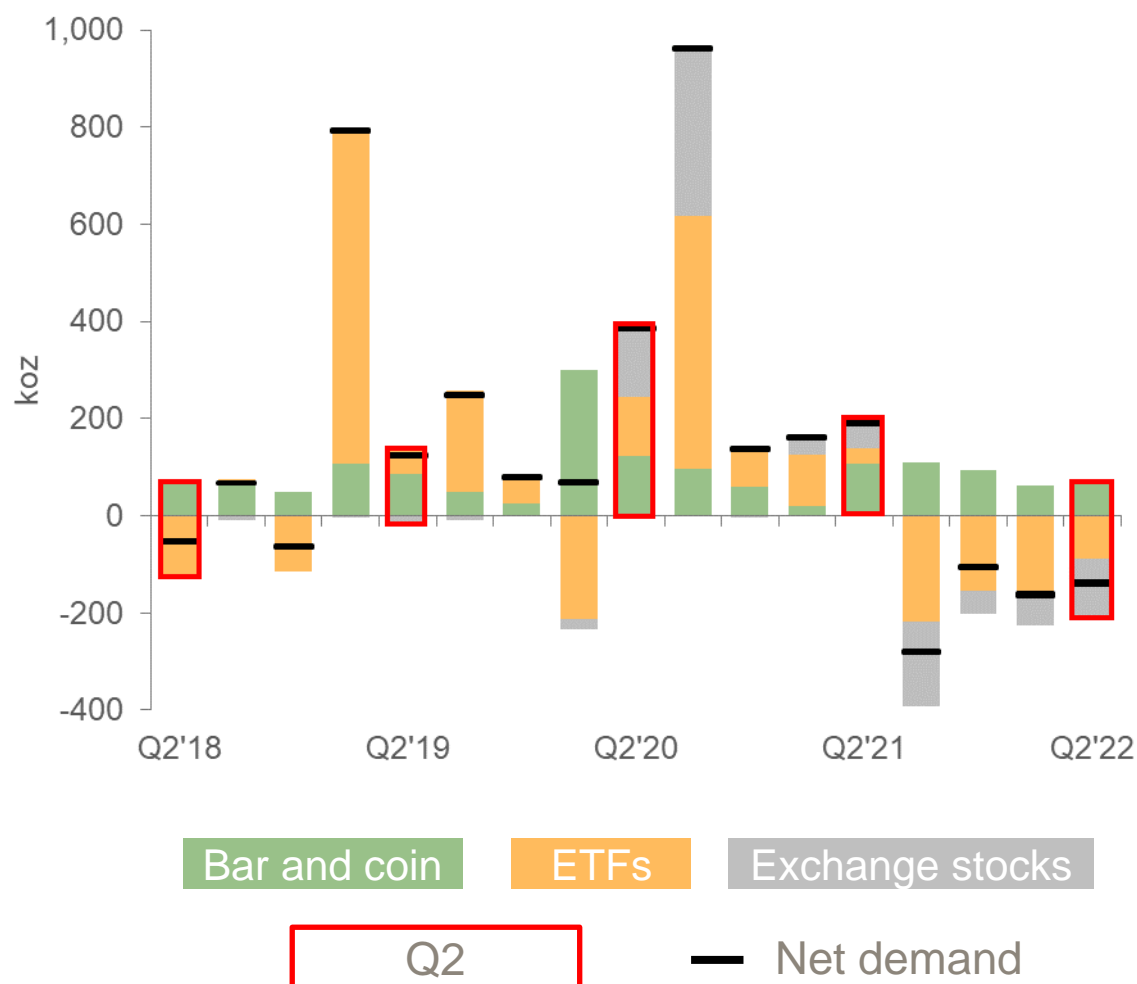


Q2

- Industrial demand of 551 koz broadly flat YoY at +1% (+5 koz)
 - Petroleum demand +17% YoY (+7 koz)
 - Chemical -19% YoY (-37 koz) vs. exceptionally strong Q2'21
 - Glass +21% YoY (+18 koz) vs. quieter Q2'21 on capacity addition timings
 - Other Industrial +16% YoY (+21 koz) to record high in time series
 - Medical +8%, Electrical -23%

Q2 2022 INVESTMENT DEMAND: OUTFLOWS FROM ETF AND EXCHANGE STOCKS BUT FIRMER BAR AND COIN

Investment demand by category (koz)



- Net investment declined 329 koz YoY from +187 koz to -142 koz in Q2'22
- Bar and coin -34% YoY to 70 koz, primarily due to continued sell-backs in Japan and quarterly variability in the US
- ETF disinvestment of -89 koz in Q2, similar to other precious metals, on rising interest rates and weaker commodity prices
- Exchange stock outflows of -123 koz in Q2, due to continued negative EFP rates perpetuated by flow of metal into China

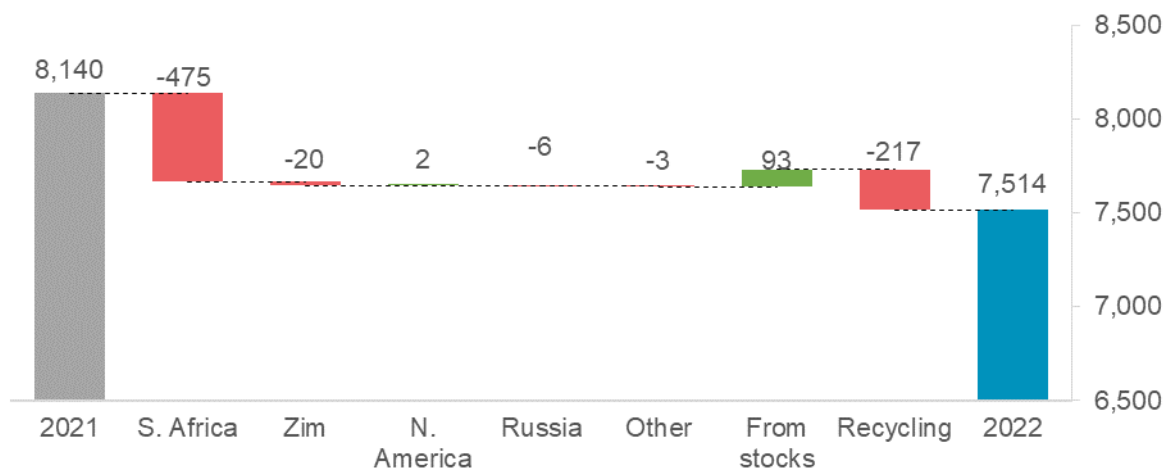
2022 FULL YEAR: INCREASED SURPLUS ON NEGATIVE INVESTMENT DEMAND

SUPPLY	2021	2022f	YoY, oz	YoY, %
Refined Production	6,297	5,794	-502	-8%
South Africa	4,678	4,203	-475	-10%
Zimbabwe	485	465	-20	-4%
North America	273	275	2	1%
Russia	652	646	-6	-1%
Other	208	205	-3	-1%
Inc (-)/Dec (+) in Producer Inventory	-93	+0	93	N/A
Total Mining Supply	6,204	5,794	-409	-7%
Recycling	1,936	1,720	-217	-11%
Autocatalyst	1,448	1,238	-210	-15%
Jewellery	422	412	-10	-2%
Industrial	67	70	3	4%
Total Supply	8,140	7,514	-626	-8%
DEMAND				
Automotive	2,638	3,015	376	14%
Jewellery	1,953	1,959	6	0%
Industrial	2,507	2,132	-375	-15%
Investment	-45	-565	-520	N/A
Total Demand	7,053	6,540	-513	-7%
Balance	1,087	974	-	-10%
Above Ground Stocks	3,638	4,612	974	27%

- Refined production down 8% YoY (-502 koz)
- Recycling down 11% YoY (-217 koz)
- Continued strong growth in automotive demand (+14% YoY, +376 koz)
- Industrial demand -15% YoY (-375 koz)
- Investment demand swing of -520 koz
- Market surplus of 974 koz, up from 627 koz previously and 10% below the 2021 surplus

2022 OUTLOOK: SUPPLY AND DEMAND REDUCED BUT HIGHER SURPLUS

Annual total supply and changes 2021 to 2022f (koz)

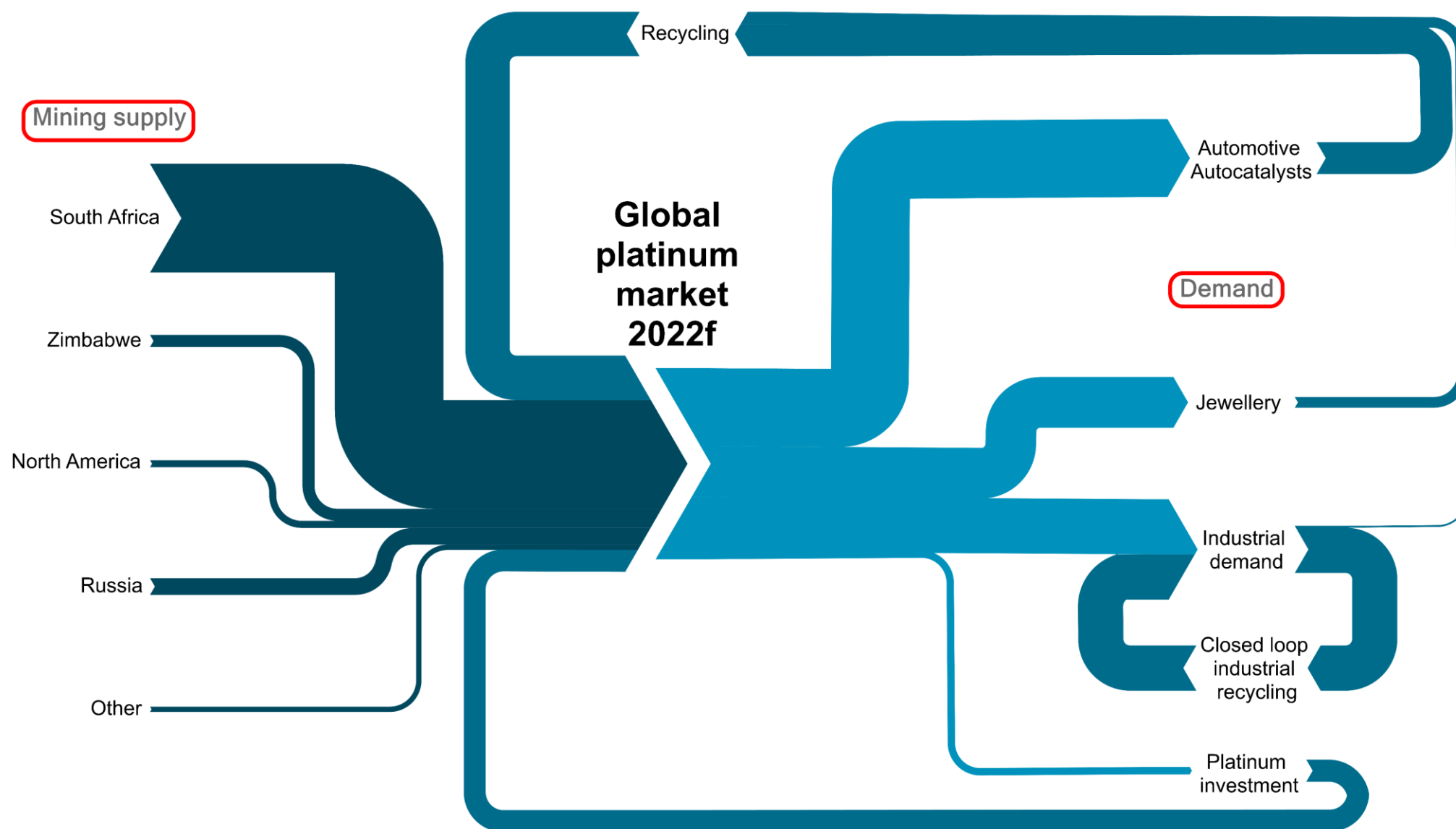


- South African refined production down 10% YoY (-475 koz) at 4,203 koz
- Recycling supply down 11% YoY (-217 koz) on reduced autocatalyst scrap availability
- Auto demand up 14% YoY (+376 koz) as higher loadings offset lower production volumes
- Industrial demand down 15% YoY (-375 koz) from record 2021, but remaining third highest annual demand ever at 2,132 koz
- Investment -520 koz YoY on continued ETF and exchange stock outflows

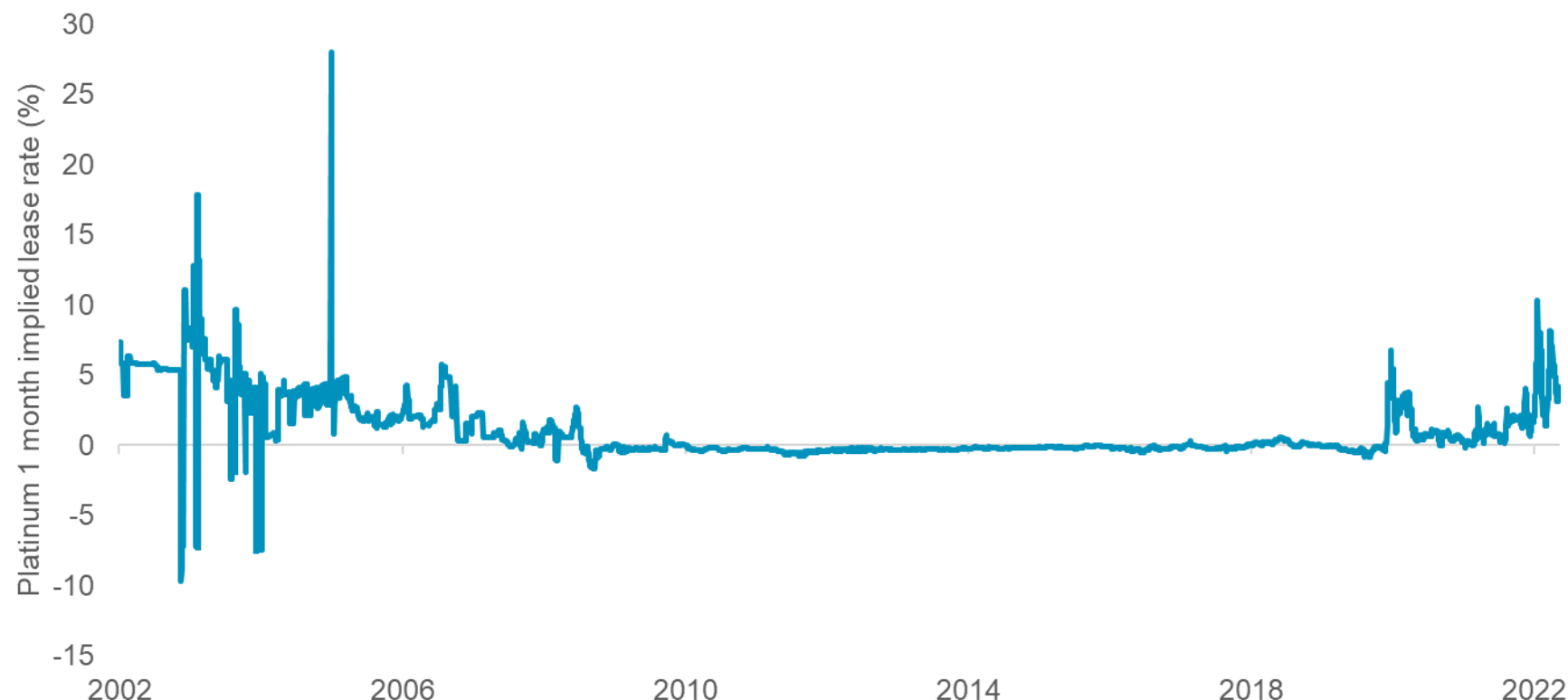
Annual total demand and changes 2021 to 2022f (koz)



EXPECTED PLATINUM FLOWS FROM MINERS TO DEMAND SEGMENTS AND RECYCLING RETURNS: ANNUAL 2022F



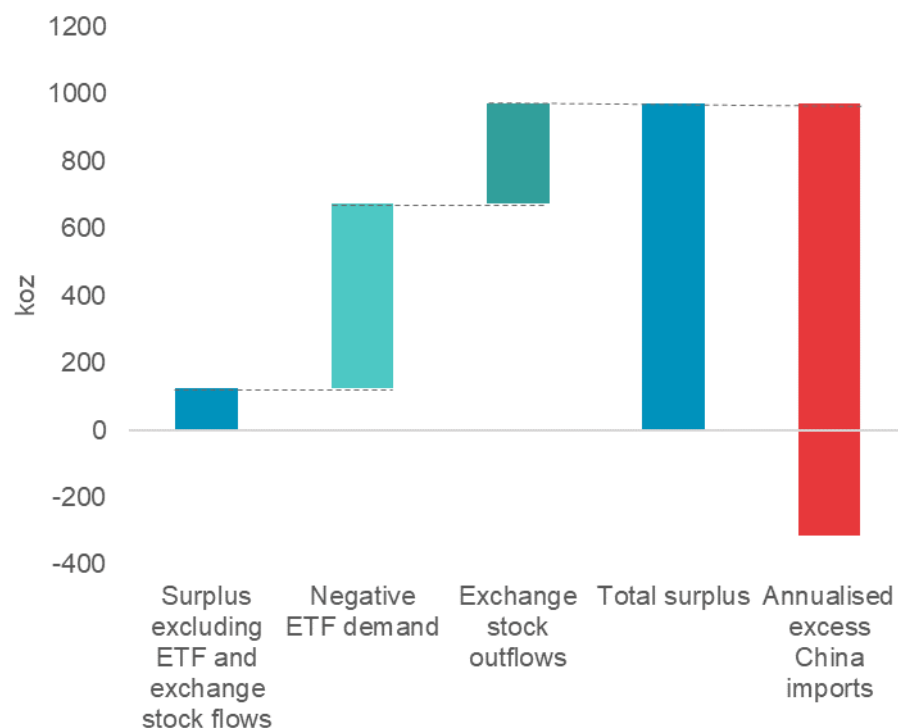
ELEVATED PLATINUM LEASE RATES HIGHLIGHT CONTINUED TIGHTNESS IN THE PHYSICAL MARKET



- Rising interest rates are a factor supporting increased lease rates, but are secondary to ongoing tightness in the prompt physical market
- Reflecting the significance of the change, lease rates in May reached their highest sustained level since the early 2000's

ANNUALISING CHINA'S EXCESS IMPORTS SUGGEST IT COULD ABSORB THE FORECAST 2022 MARKET SURPLUS

Projecting China's excess imports suggest it could absorb the whole of the forecast market surplus



- China is continuing to import platinum at levels well in excess of its identified demand
- Annualising net H1 imports and deducting identified demand suggests that excess imports could total 1.3 Moz in 2022
- China could therefore absorb the full projected market surplus for 2022

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3. Current thematic

- Worsening economic environment
- Continued physical market tightness
- Potential surplus elimination
- Platinum's role in decarbonization

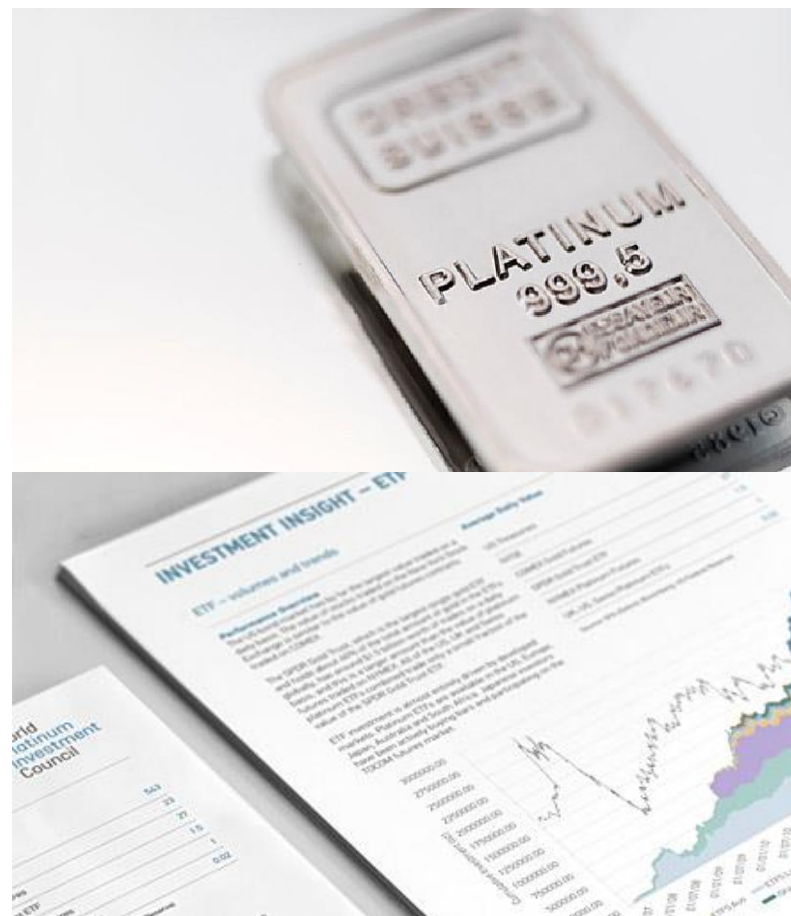
Edward Sterck, Analyst

4. Questions

Paul Wilson

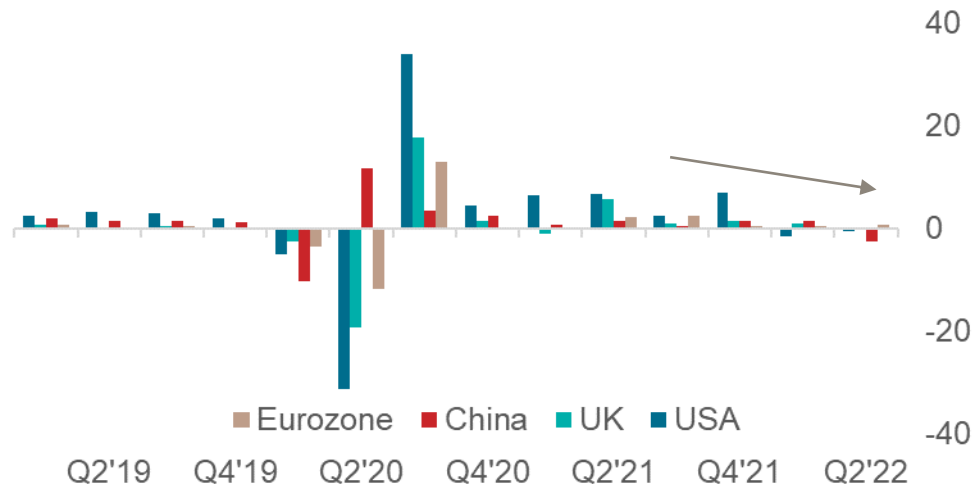
Trevor Raymond

Edward Sterck



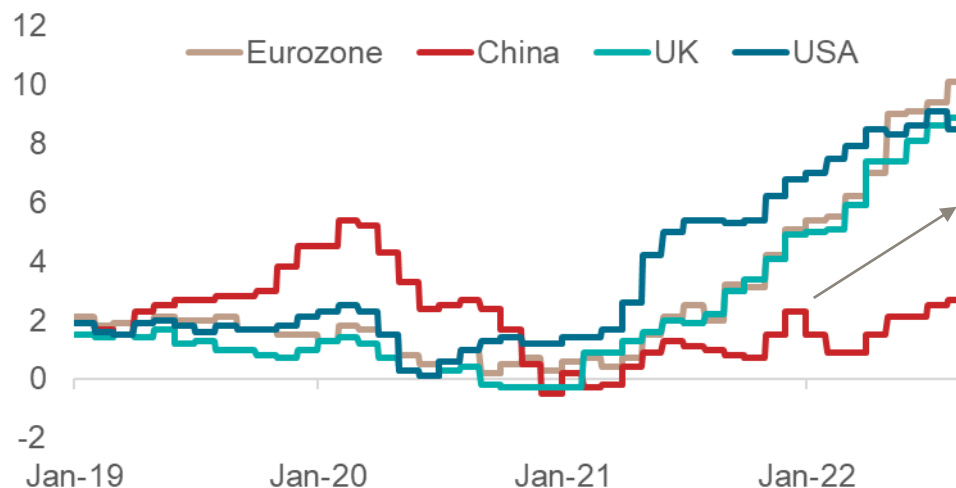
MACRO ENVIRONMENT UNCERTAINTY AWASH WITH CONFLICTING SIGNALS

GDP growth of major economies is trending towards or below zero



- Slowing global economy and high risk of recessions
- But inflation prompting rate rises rather than fiscal stimulus

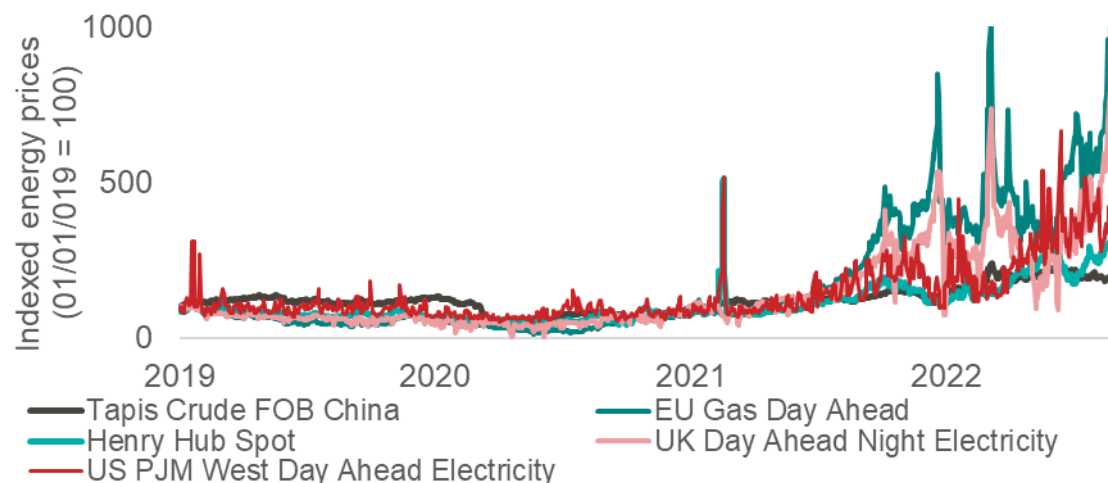
CPI as a measure of inflation has been hitting multi-decade highs



- Government sponsored decarbonization programmes economically stimulating

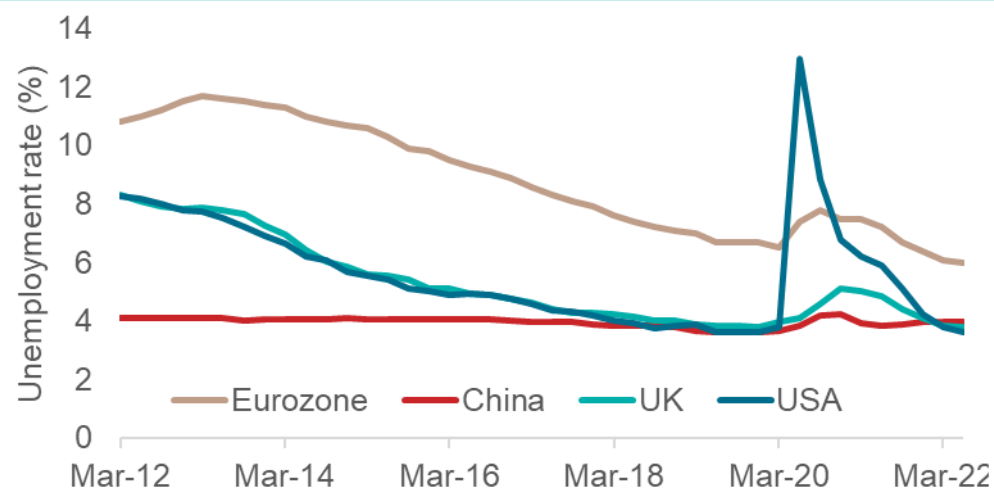
INFLATION BEING DRIVEN BY GLOBAL ENERGY CRISIS AND RISING LABOUR RATES

Energy prices have surged in every region globally



- Energy price increases exacerbated by Russia's invasion of Ukraine

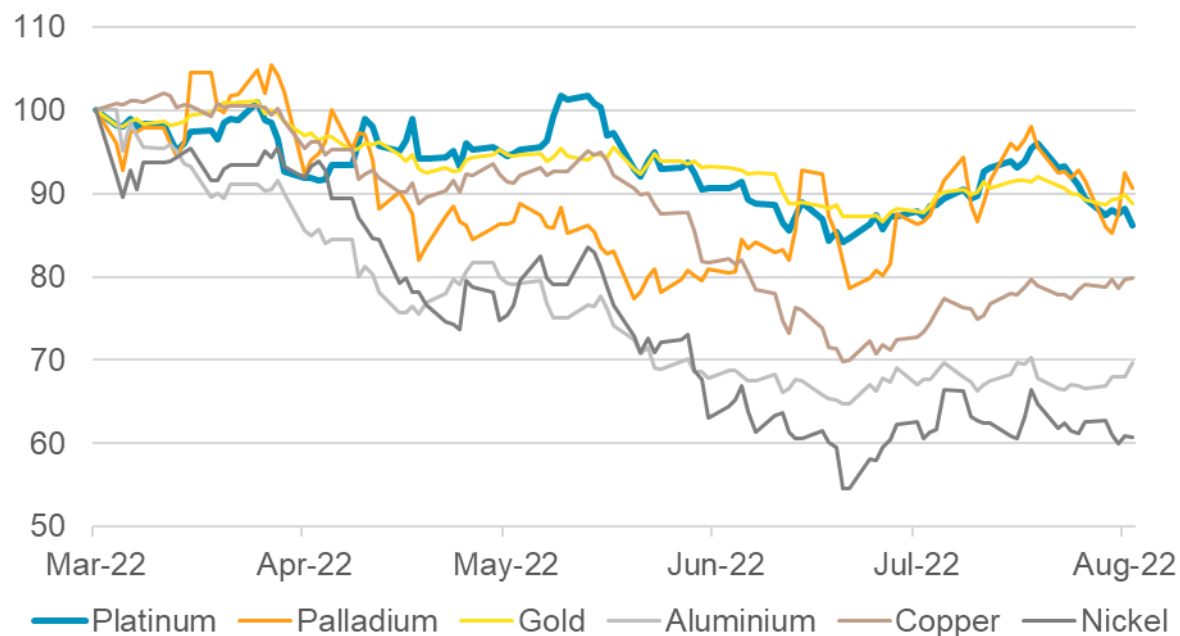
Despite slowing economic growth, unemployment remains low



- Unemployment remains low despite economic headwinds

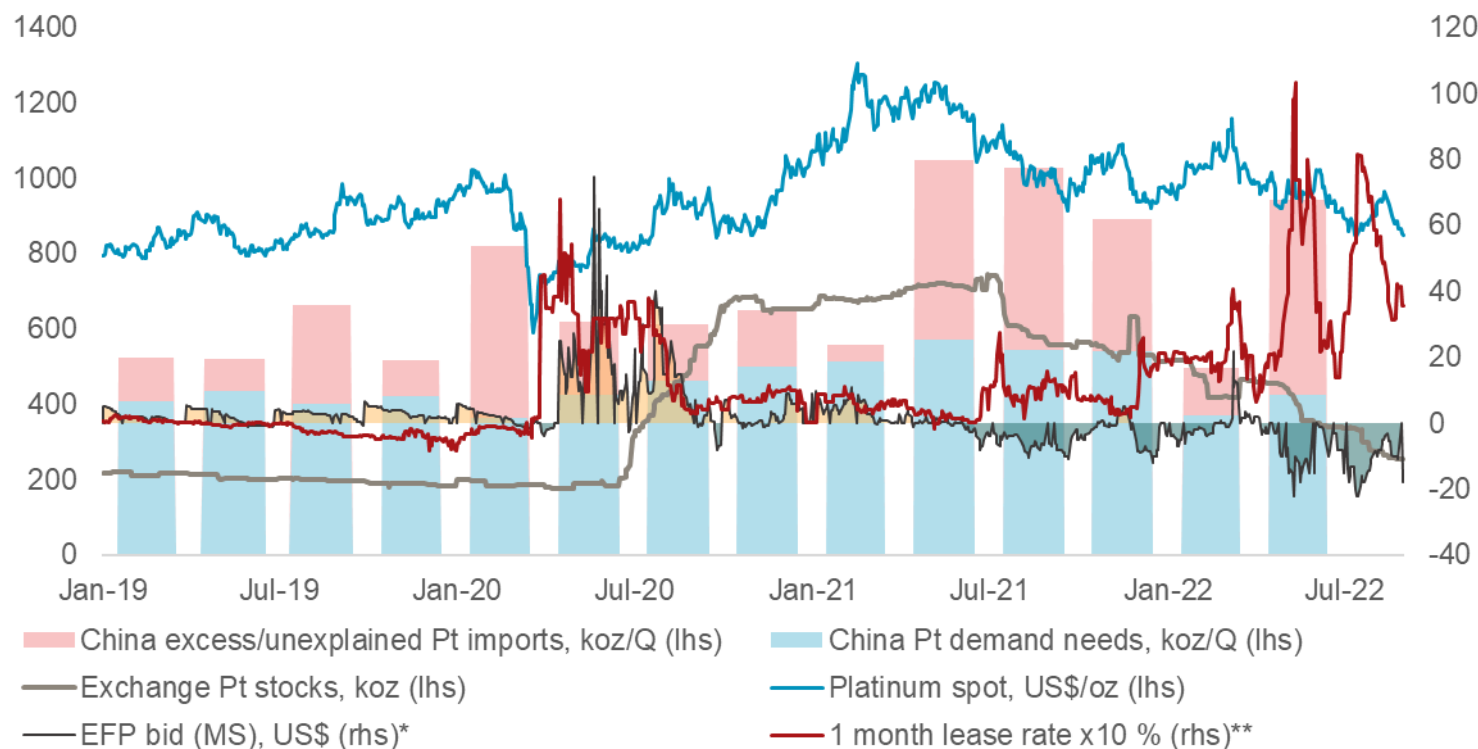
DESPITE PRICE WEAKNESS, PLATINUM HAS OUTPERFORMED ON A RELATIVE BASIS

Platinum has outperformed on a relative basis since Russia's invasion of Ukraine



- Platinum and palladium prices have outperformed other commodities since the invasion
- For platinum, this reflects:
 - Security of supply concerns
 - Continued strength in automotive, industrial and jewellery demand
 - Ongoing elevated imports into China

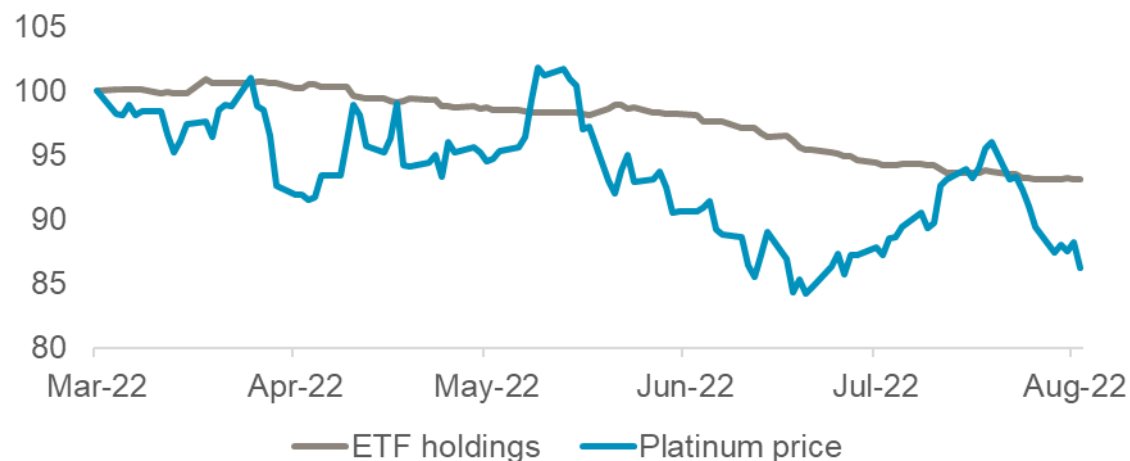
CHINA IMPORTS LIKELY A SIGNIFICANT FACTOR BEHIND ONGOING MARKET TIGHTNESS



- China's ongoing demand for platinum, well in excess of identified demand, is likely a significant factor in maintaining a tight physical market
- This is resulting in sustained elevated lease rates and a negative exchange for physical rate, which is encouraging the movement of metal away from exchange stocks

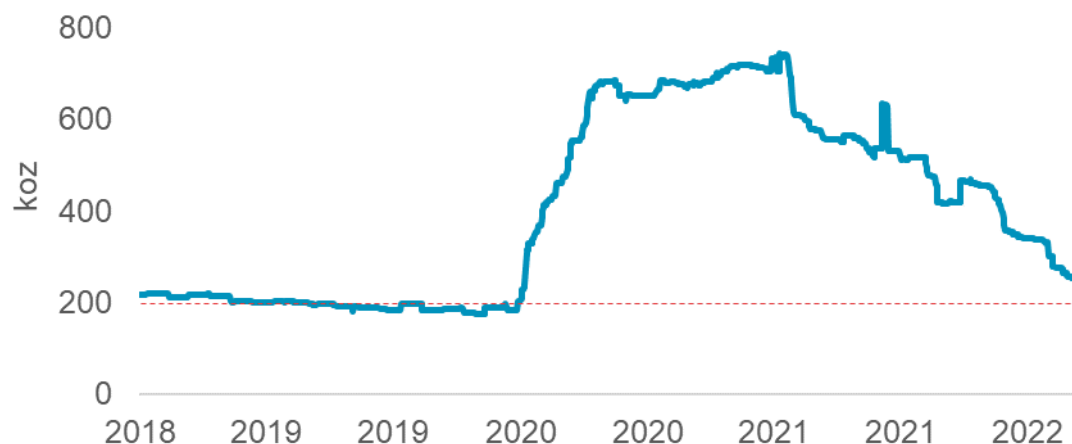
MARKET TIGHTNESS DRAWING ON ETFs AND EXCHANGE STOCKS – IS THERE A LIMIT TO ABOVE GROUND SUPPLY?

ETF demand vs. platinum price



- Residual ETF holders likely have longer-term investment horizons and higher value expectations

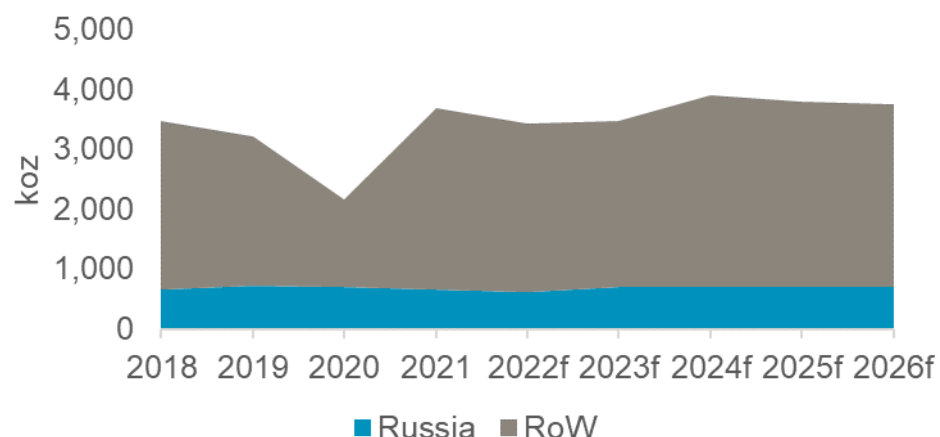
Exchange stocks approaching historical floor



- We expect historical average exchange stock levels to represent a floor to further outflows
- But... lower than historical risk tolerance means the floor could be higher

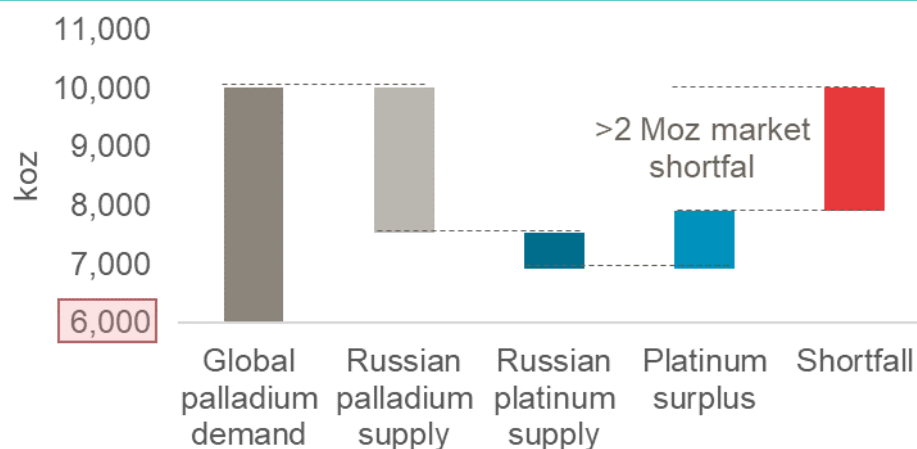
SELF-SANCTIONING COULD EXCLUDE RUSSIAN ORIGIN MATERIAL FROM FREELY TRADABLE MARKET

Company guidance* indicates that Russia will continue to contribute around 10% of global Pt mining supply



- Western end users of platinum could self-sanction and avoid Russian origin material
- This could accelerate platinum substitution for palladium in gasoline vehicles

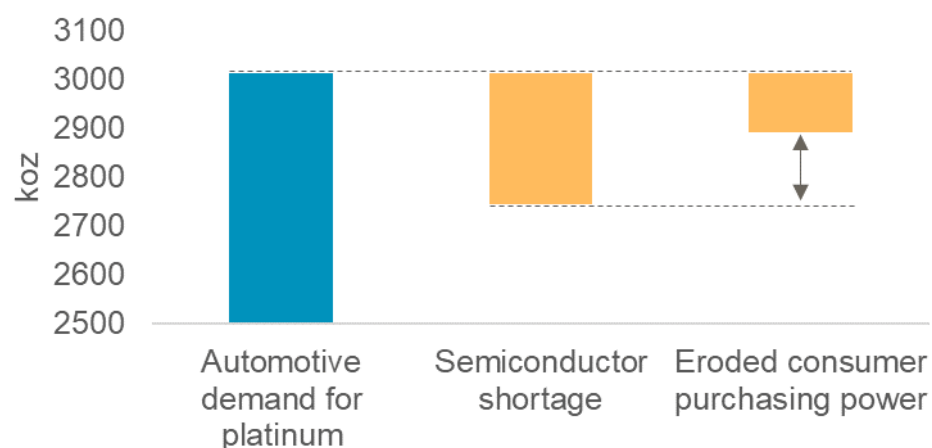
On a 1:1 basis, it is currently not possible to fully substitute out Russian origin palladium in 2022



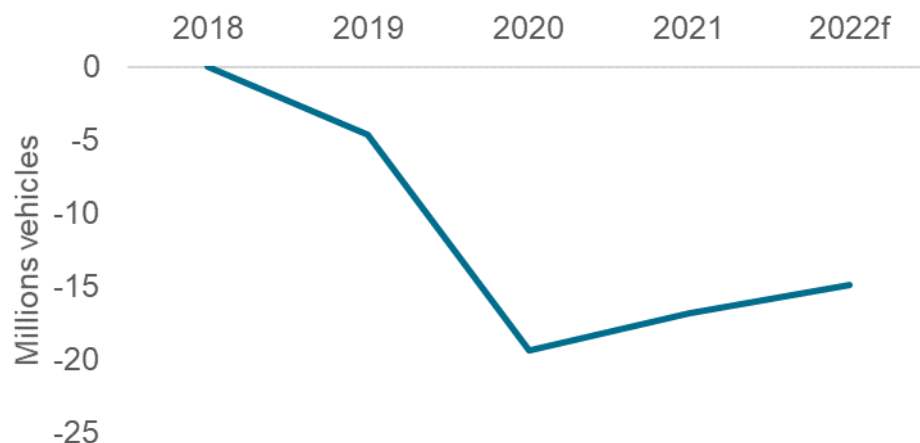
- Nornickel has also warned of sanction related production challenges in H2
- It is not possible to fully substitute away Russian PGM supply

RESTRICTED AUTOMOTIVE PRODUCTION IS ALREADY BELOW LEVELS OF RECESSIONARY CONSUMER DEMAND

Downside risks from semiconductor shortages are below recessionary levels of consumer demand



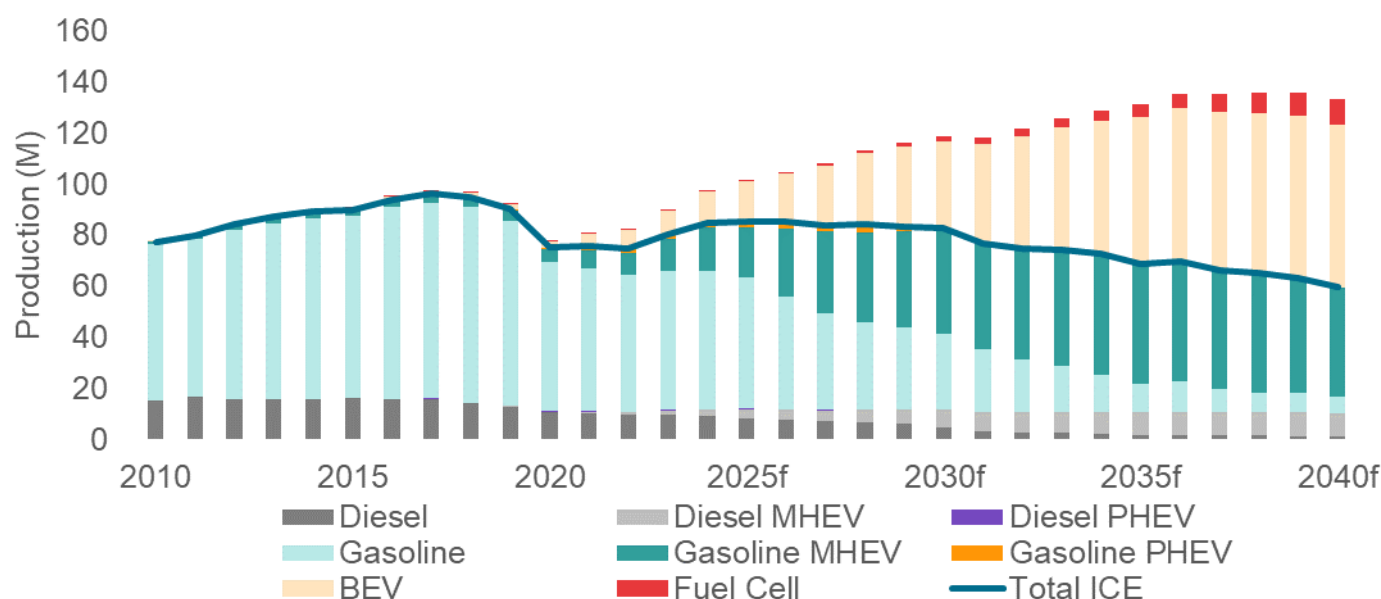
Automotive production shortfalls versus pre-COVID light vehicle output



- Consumer purchasing power will be eroded by 4.8% by year end
- Supply chain constrained automotive production is already below recessionary levels of consumer demand...
- ...especially after considering pent up demand from production shortfalls through COVID

DECARBONISATION DOES NOT HERALD THE IMMEDIATE DEMISE OF THE INTERNAL COMBUSTION ENGINE

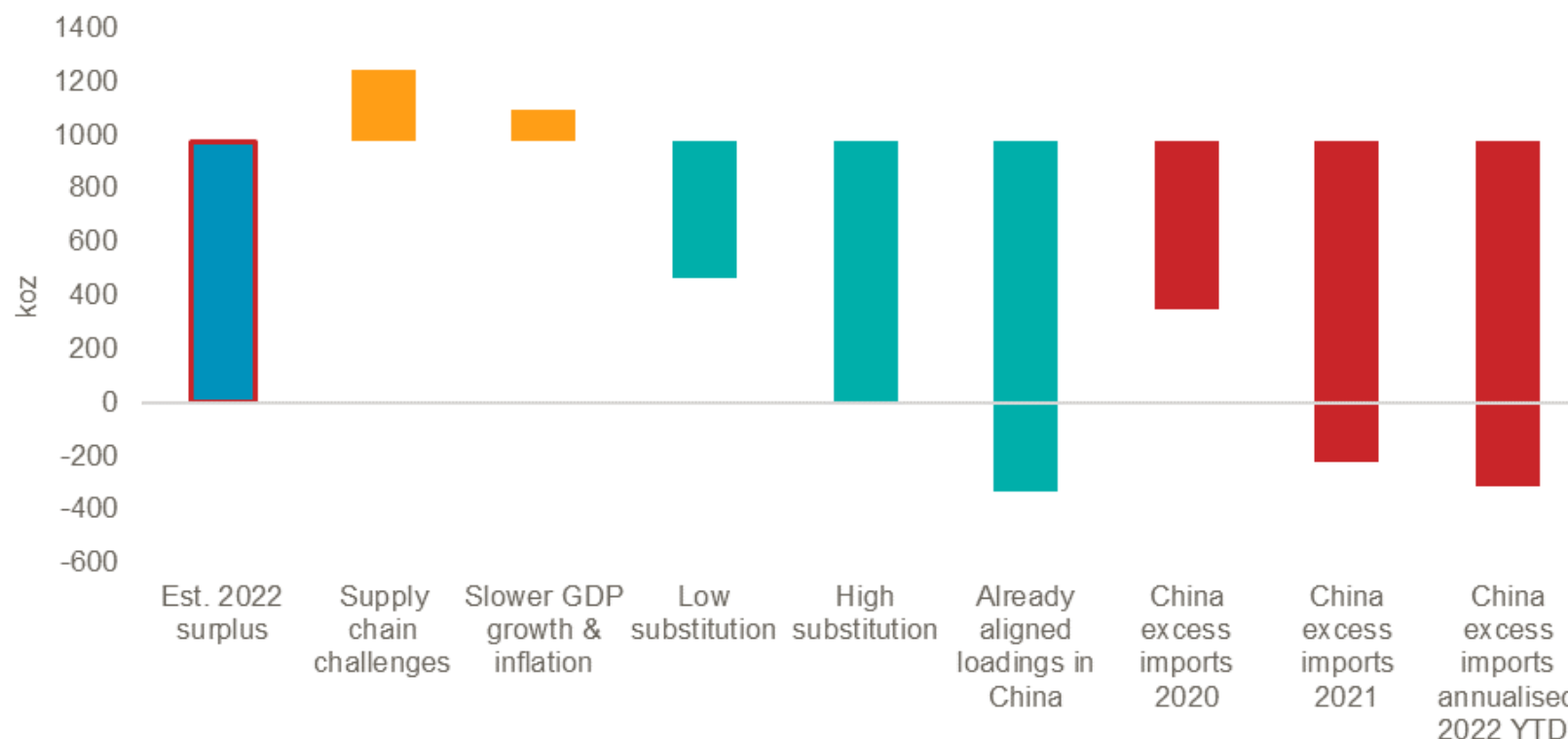
WPIC forecast drivetrain mix to 2040 – ICE expected to retain a sizeable market share in hard to electrify roles



- WPIC believes that not all vehicle roles or geographies are suitable for battery electrification
- ICE vehicles will therefore continue to be a meaningful part of the drivetrain mix through 2040

Report link: [Automotive drivetrain outlook and the implications for sustained long term platinum demand](#)

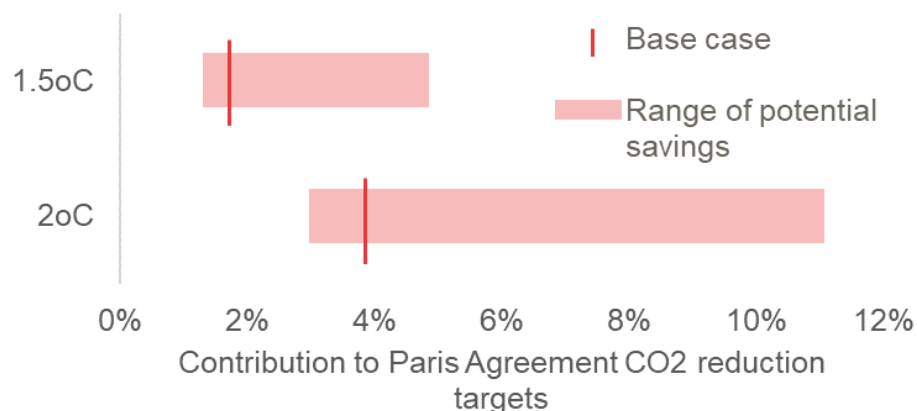
THERE ARE A NUMBER OF FACTORS THAT COULD REDUCE OR ELIMINATE THE PROJECTED 2022 SURPLUS



- Risks to demand are outweighed by factors that could mean underlying demand is higher than identified demand.
- Substitution of platinum for palladium in new models could reduce or eliminate the surplus, whereas the potential for higher loadings in China could have a greater impact.

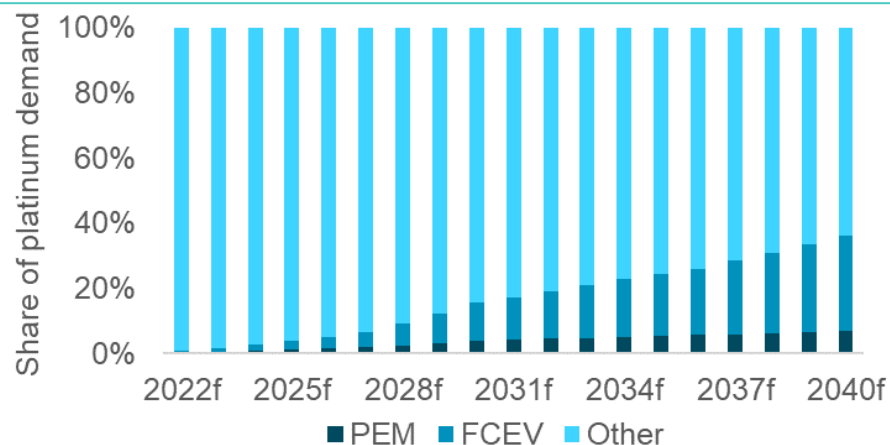
PLATINUM FACILITATED GREEN HYDROGEN COULD DISPLACE OVER 10% OF TARGETED CO2 REDUCTIONS

Platinum facilitated CO2 savings could be more than 10% of the global reduction targets



- Platinum facilitated green hydrogen could provide over 10% of the CO₂ savings in the Paris Accord 2°C warming scenario

Hydrogen linked demand for platinum could reach more than 30% of total demand by 2040

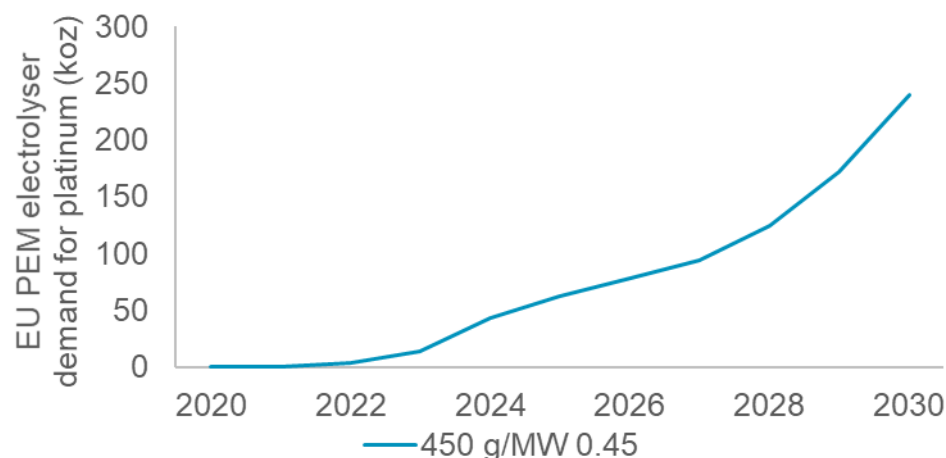


- Hydrogen linked demand for platinum to be more than 30% of total demand by 2040

Report link: [Green hydrogen production and FCEV usage highlight platinum's role in significantly reducing CO2 emissions](#)

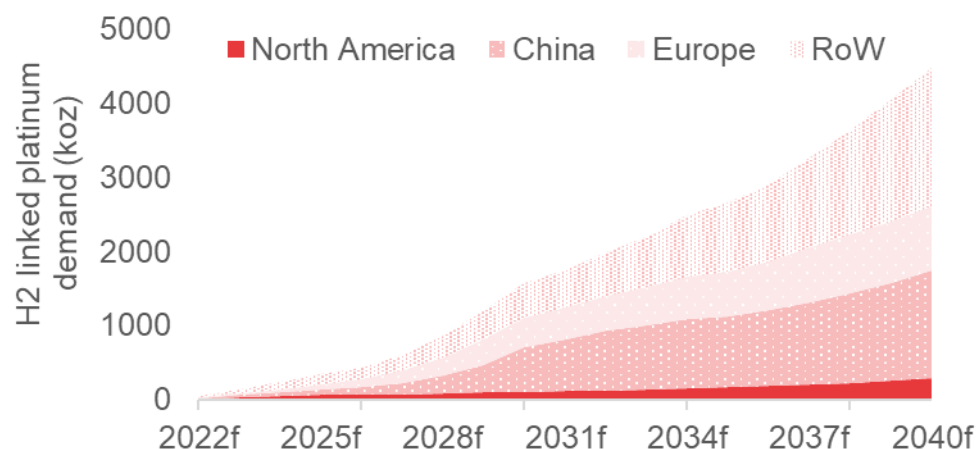
GOVERNMENT SUPPORT FOR GREEN HYDROGEN GROWING AROUND THE WORLD

EU aims to replace Russian origin natural gas with green hydrogen will be positive for platinum demand



- The EU's plans to replace Russian gas with green hydrogen could increase platinum demand by ~250 koz p.a. by 2030

North American hydrogen plans have lagged the rest of the world, especially versus China and Europe



- North America is a hydrogen laggard due to a previous lack of policy support
- The US's Inflation Reduction Act changes this

WHY INVEST IN PLATINUM? REACTIONS TO SUPPLY RISKS, GREEN HYDROGEN & SPECULATIVE INVESTMENT



- Robust automotive, jewellery and industrial demand for platinum, despite the slowing economic outlook
- Self-sanctioning could exclude Russian material from the global market, a significant cut to freely tradeable global supply
- Continued physical market tightness on excess imports into China, which could absorb the whole of the projected surplus
- Longer term growth in demand from platinum's key role in global decarbonisation

POTENTIAL POSITIVE AND NEGATIVE CATALYSTS FOR PLATINUM SUPPLY/DEMAND BALANCE AND PRICE

+/-ve	Potential catalysts	Possible timeframe
+ve	Russian primary mine supply challenges	H2'22 and/or 2023
+ve	Identification of automotive or industrial uses of excess imports into China	H2'22 and/or 2023
+/-ve	Confirmation of continued excess imports into China	H2'22

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UPCOMING EVENTS AND RESEARCH TO LOOK OUT FOR



WPIC initiatives:

- The establishment of the **Lin Gang** trade and technology centre for platinum group metals in Shanghai, including a research institute, industrial park, and off-shore PGM trading market and a PGM-related industrial venture capital fund
- **Shanghai Platinum Week** started today
- Partnership ounces ahead of budget and similar to 2021
- Research with a greater focus on the potential for platinum containing technology to displace CO₂ emissions

