

# PLATINUM QUARTERLY PRESENTATION Q4 2021

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London

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# AGENDA: PLATINUM QUARTERLY: Q4 2021, FULL YEAR 2021 AND UPDATED 2022 FORECAST

## 1. Introduction

*Paul Wilson, CEO*

## 2. Platinum Quarterly, fundamentals review

*Trevor Raymond*

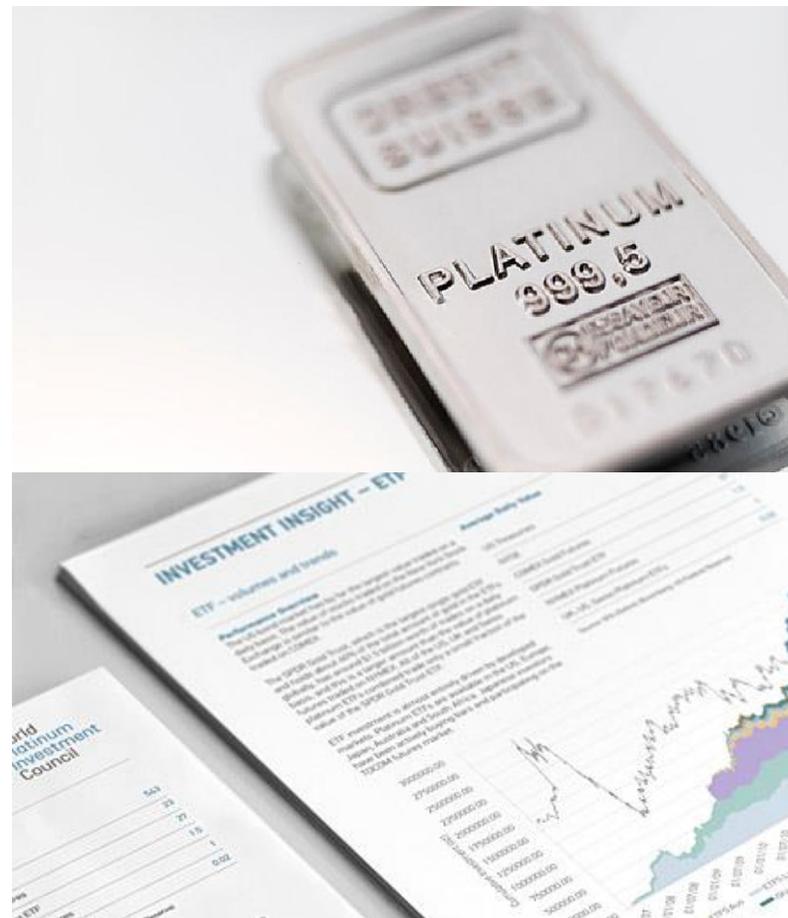
## 3. Focus on fundamental drivers

*Trevor Raymond*

## 4. Questions

*Paul Wilson*

*Trevor Raymond*



# AGENDA: PLATINUM QUARTERLY: Q4 2021, FULL YEAR 2021 AND INITIAL 2022 FORECAST

## 1. Introduction

*Paul Wilson*

## 2. Platinum Quarterly, fundamentals review

- Supply, demand and balance: Q4'21, 2021 and 2022 estimates

*Trevor Raymond, Director of Research*

## 3. Focus on fundamental drivers

*Trevor Raymond*

## 4. Questions

*Paul Wilson*

*Trevor Raymond*



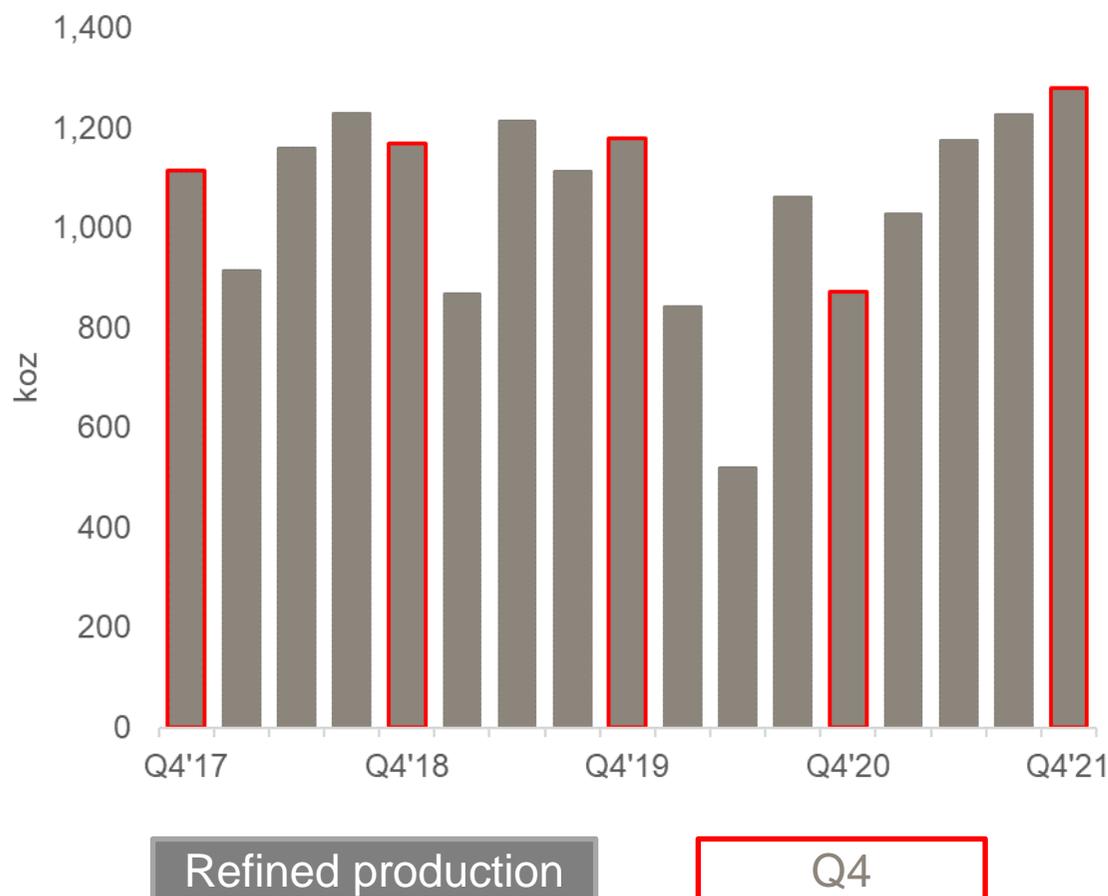
# Q4 2021 SUPPLY: TOTAL SUPPLY UP 17% AS ACP BACKLOG UNWIND OFFSETS LOWER RECYCLING

SUPPLY	Q4 2020	Q3 2021	Q4 2021
<b>Refined Production</b>	<b>1,303</b>	<b>1,592</b>	<b>1,695</b>
South Africa	873	1,228	1,280
Zimbabwe	115	111	121
North America	82	50	63
Russia	182	153	178
Other	51	51	52
Inc(-)/Dec(+) in Producer Inventory	-51	-28	-21
<b>Total Mining Supply</b>	<b>1,252</b>	<b>1,565</b>	<b>1,674</b>
<b>Recycling</b>	<b>573</b>	<b>463</b>	<b>461</b>
Autocatalyst	422	341	341
Jewellery	134	104	103
Industrial	17	17	17
<b>Total Supply</b>	<b>1,825</b>	<b>2,027</b>	<b>2,135</b>

- South Africa refined supply up 47% YoY (+407 koz)
- Recycling supply down 20% YoY (-112 koz)
- Total Q4 supply up 17% YoY (+310 koz)

# Q4 2021 SOUTH AFRICAN MINE SUPPLY: UP 47% YOY ON NO DISRUPTIONS AND ACP BACKLOG UNWIND

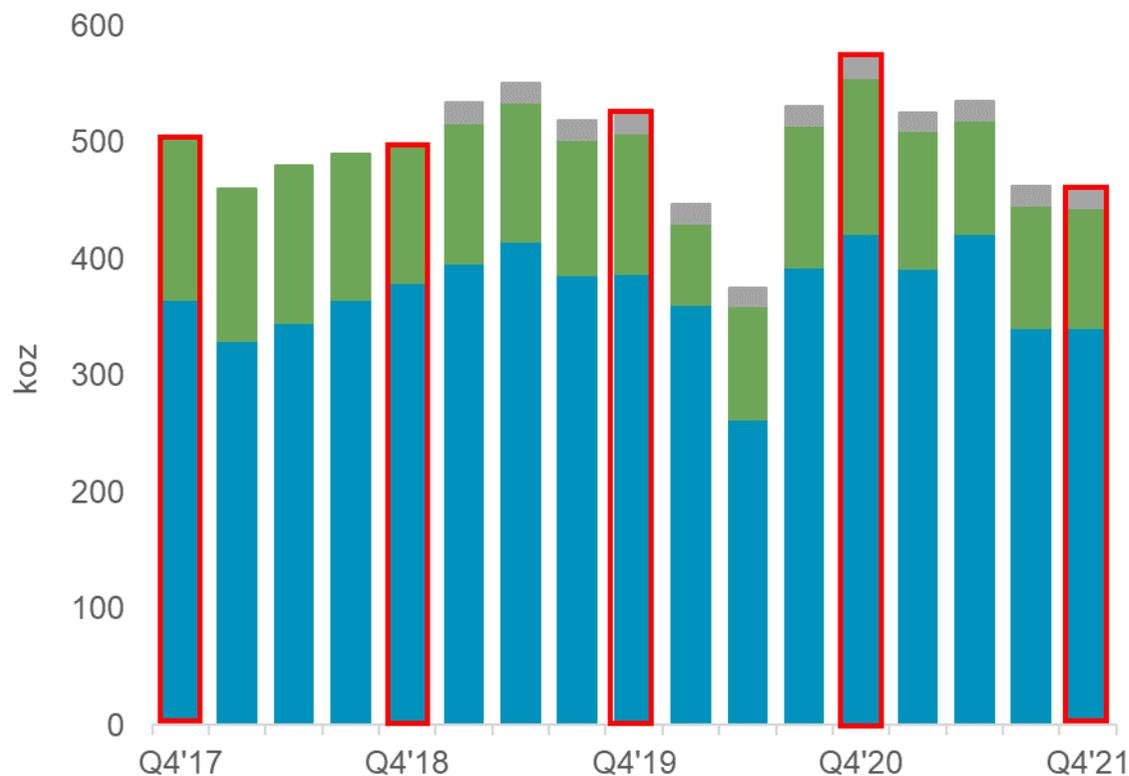
## South African refined mine production (koz)



- South African Q4 production up 47% YoY and 4% QoQ
  - Ongoing production stability on increased preventative maintenance
  - Includes most of final unwind of ACP inventory, but excludes material in process pipeline
  - Net of ACP inventory, underlying production remains below 2019 levels

# Q4 2021 RECYCLING: DOWN 20% ON REDUCED VEHICLE SCRAPPAGE AND JEWELLERY TRADE-INS

Recycling (koz)



- Recycling flat QoQ and down 20% YoY from an exceptionally high comparable quarter
- As in Q3, used cars being run for longer as semiconductor disruption causes new vehicle shortages
- Jewellery trade-ins were lacklustre on muted demand for new jewellery

Autocatalyst

Jewellery

Industrial

Q4

# Q4 2021 DEMAND: STRONG INDUSTRIAL, SOFT AUTO & JEWELLERY, -VE INVESTMENT - SURPLUS +475 KOZ

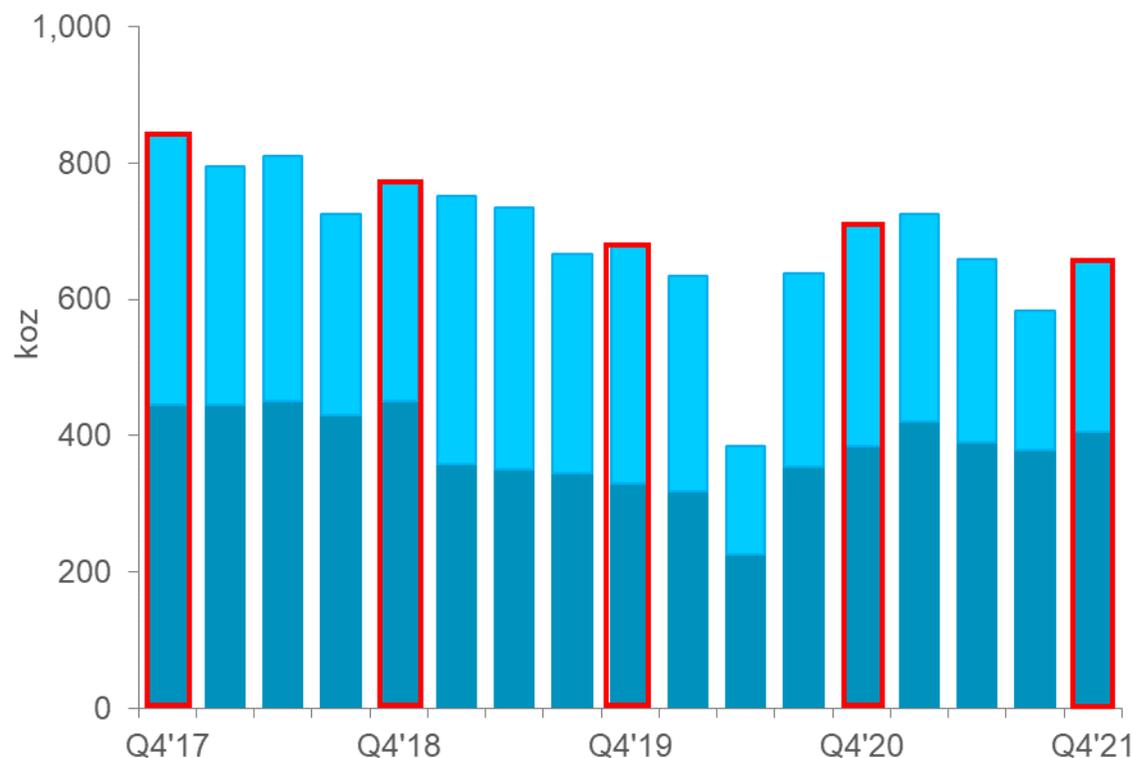
DEMAND	Q4 2020 // Q3 2021	Q4 2021
<b>Automotive</b>	<b>712</b>	<b>582</b>
Autocatalyst	712	582
Non-road	†	†
<b>Jewellery</b>	<b>529</b>	<b>481</b>
<b>Industrial</b>	<b>525</b>	<b>596</b>
Chemical	178	156
Petroleum	36	46
Electrical	36	35
Glass	73	164
Medical & Biomedical	60	64
Other	143	132
<b>Investment</b>	<b>135</b>	<b>-282</b>
Change in Bars, Coins	<b>60</b>	110
Change in ETF Holdings	<b>76</b>	-219
Change in Stocks Held by Exchanges	<b>-1</b>	-173
<b>Total Demand</b>	<b>1,901</b>	<b>1,377</b>
<b>Balance</b>	<b>-76</b>	<b>650</b>
		<b>475</b>

Q4 demand changes YoY

- Automotive down 8% (-56 koz)
- Jewellery down 6% (-33 koz)
- Industrial up 17% (+90 koz)
- Investment down by 243 koz
  - Bar and coin up 58% (+35 koz)
  - ETF down -231 koz
  - NYMEX down -47 koz
- Market surplus of 475 koz

# Q4 2021 AUTOMOTIVE: DOWN 8% YOY ON CONTINUED SEMICONDUCTOR CHALLENGES AND DRIVETRAIN MIX

## Automotive demand (koz)



World ex-W.E.

Western Europe

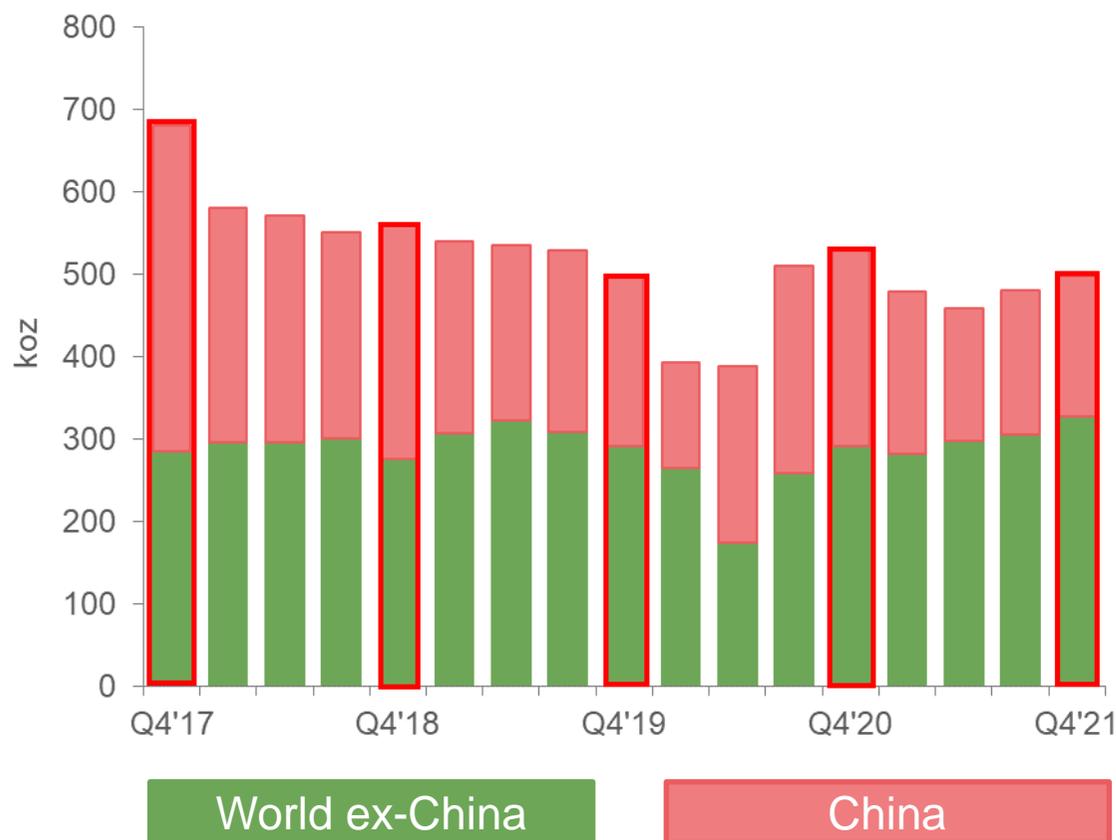
Q4

## Q4 demand change YoY

- Automotive demand -8% (-56 koz) YoY but up 13% QoQ on an easing of the semiconductor shortage
- European LV production -25% and HD -1% resulting in 23% fall in platinum demand (-76 koz)
- North American demand +6% (+5 koz) on higher sales in larger vehicle segments and increased substitution
- China demand up 31% (+27 koz) on tighter emissions

# Q4 2021 JEWELLERY: DOWN 6% YOY AS WEAK DEMAND IN CHINA AND JAPAN OFFSETS R.O.W. STRENGTH

Jewellery demand (koz)

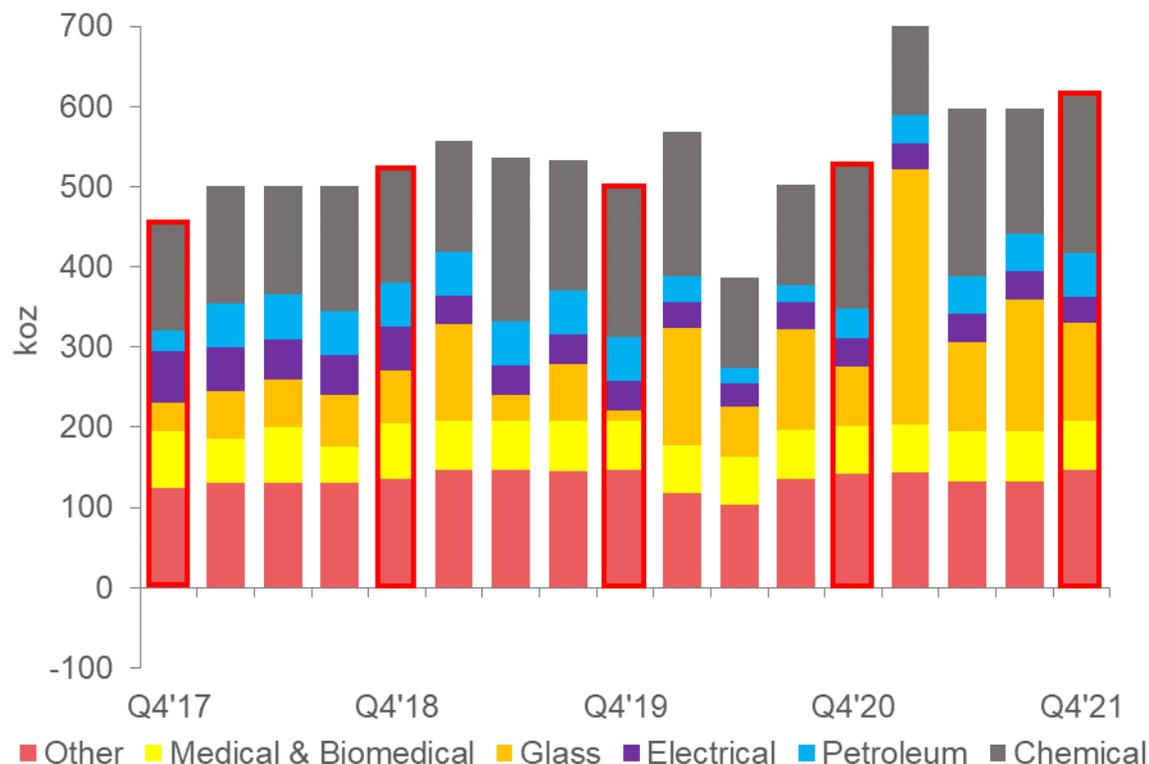


- Jewellery down 6% (-33 koz) YoY to 497 koz, but up 3% (+16 koz) QoQ
- Continued YoY strength in demand in Europe (+21%, +12 koz) and North America (+14%, +13 koz)
- China demand (-29%, -69 koz) from strong competition from new gold jewellery designs
- Japanese demand disappointed (-10%, -9koz) versus gold demand
- Indian up by 88% (+18 koz) off low base

Q4

# Q4 2021 INDUSTRIAL DEMAND: UP 17% YOY BUT EASING FROM RECENT RECORD HIGHS

Industrial demand by category (koz)

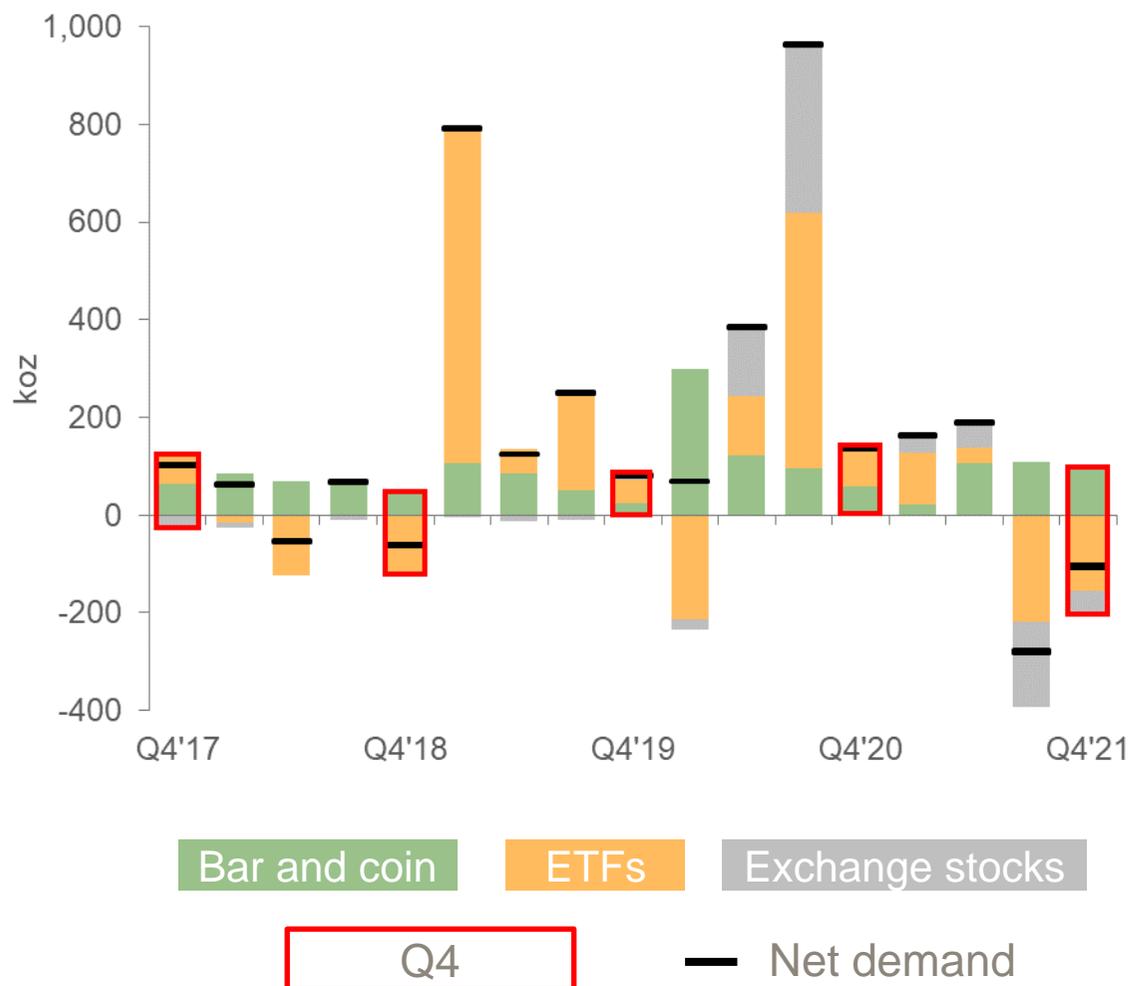


- Industrial grew +17% (+90 koz) YoY and +3% (+19 koz) QoQ
- Petroleum demand +51% (+19 koz) YoY to 54 koz
- Chemical demand +12% (+21 koz) YoY on capacity additions in China
- Glass +66% (+48 koz) YoY on normalised LCD and fibreglass capacity additions in China

Q4

# Q4 2021 INVESTMENT DEMAND: OUTFLOWS FROM ETF AND EXCHANGE STOCKS BUT STRONG BAR AND COIN

Investment demand by category (koz)



- Q4'21 investment demand declined -243 koz YoY
- Continued strength in bar and coin demand despite modest YoY easing in Q4'21, -4% (-2 koz)
- Negative ETF demand of -155 koz as investors rotated into equities in anticipation of significant returns
- NYMEX stock draw-downs slowed to -48 koz

# 2021 FULL YEAR: 21% INCREASE IN SUPPLY AND 9% FALL IN DEMAND LEADS TO 1,232 KOZ SURPLUS

SUPPLY	2020	2021	YoY, oz	YoY, %
<b>Refined Production</b>	<b>4,989</b>	<b>6,317</b>	<b>1,328</b>	<b>27%</b>
South Africa	3,298	4,711	1,413	43%
Zimbabwe	448	475	27	6%
North America	337	271	-66	-20%
Russia	704	652	-52	-7%
Other	202	208	6	3%
Inc (-)/Dec (+) in Producer Inventory	-84	-59	24	N/A
<b>Total Mining Supply</b>	<b>4,906</b>	<b>6,258</b>	<b>1,352</b>	<b>28%</b>
<b>Recycling</b>	<b>1,926</b>	<b>1,984</b>	<b>59</b>	<b>3%</b>
Autocatalyst	1,438	1,495	57	4%
Jewellery	422	422	0	0%
Industrial	66	67	1	1%
<b>Total Supply</b>	<b>6,832</b>	<b>8,242</b>	<b>1,411</b>	<b>21%</b>
<b>DEMAND</b>				
Automotive	2,370	2,621	250	11%
Jewellery	1,820	1,915	95	5%
Industrial	1,982	2,519	537	27%
Investment	1,546	-43	-1,589	N/A
<b>Total Demand</b>	<b>7,718</b>	<b>7,010</b>	<b>-707</b>	<b>-9%</b>
<b>Balance</b>	<b>-886</b>	<b>1,232</b>	<b>-</b>	<b>N/A</b>
<b>Above Ground Stocks</b>	<b>3,908</b>	<b>3,908</b>	<b>0</b>	<b>0%</b>

- Total mining supply up 28% (+1,352 koz)
- South African mine supply up 43% (+1,413 koz) on production stability and ACP unwind
- Recycling up 3% (+59 koz) despite reduced vehicle scrappage
- Automotive demand up 11% (+250 koz) on tighter emissions standards
- Industrial demand up 27% (+537 koz) on glass capacity additions, mainly in China
- 1,589 koz negative swing in investment demand
- Market surplus of +1,232 koz

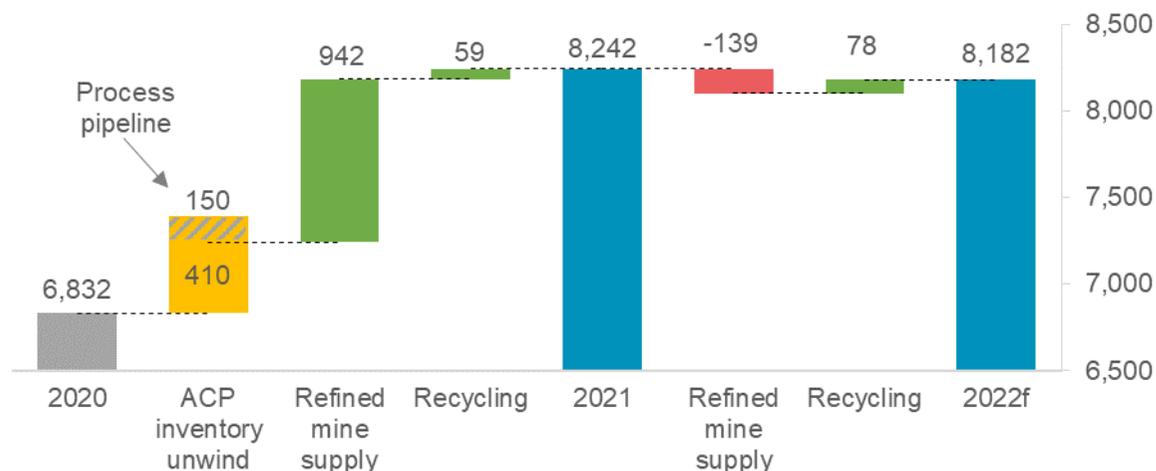
# 2022 FULL YEAR: SURPLUS ON MINE PRODUCTION STRENGTH AND WEAK INVESTMENT DEMAND

SUPPLY	2021f	2022f	YoY, oz	YoY, %
<b>Refined Production</b>	<b>6,317</b>	<b>6,119</b>	<b>-198</b>	<b>-3%</b>
South Africa	4,711	4,431	-280	-6%
Zimbabwe	475	465	-10	-2%
North America	271	358	86	32%
Russia	652	661	9	1%
Other	208	205	-3	-1%
Inc (-)/Dec (+) in Producer Inventory	-59	+0	59	N/A
<b>Total Mining Supply</b>	<b>6,258</b>	<b>6,119</b>	<b>-139</b>	<b>-2%</b>
<b>Recycling</b>	<b>1,984</b>	<b>2,063</b>	<b>78</b>	<b>4%</b>
Autocatalyst	1,495	1,559	64	4%
Jewellery	422	434	12	3%
Industrial	67	69	2	3%
<b>Total Supply</b>	<b>8,242</b>	<b>8,182</b>	<b>-61</b>	<b>-1%</b>
<b>DEMAND</b>				
Automotive	2,621	3,129	509	19%
Jewellery	1,915	1,940	25	1%
Industrial	2,519	2,132	-387	-15%
Investment	-43	329	372	N/A
<b>Total Demand</b>	<b>7,010</b>	<b>7,530</b>	<b>520</b>	<b>7%</b>
<b>Balance</b>	<b>1,232</b>	<b>652</b>	<b>-580</b>	<b>-47%</b>
<b>Above Ground Stocks</b>	<b>3,908</b>	<b>4,560</b>	<b>652</b>	<b>17%</b>

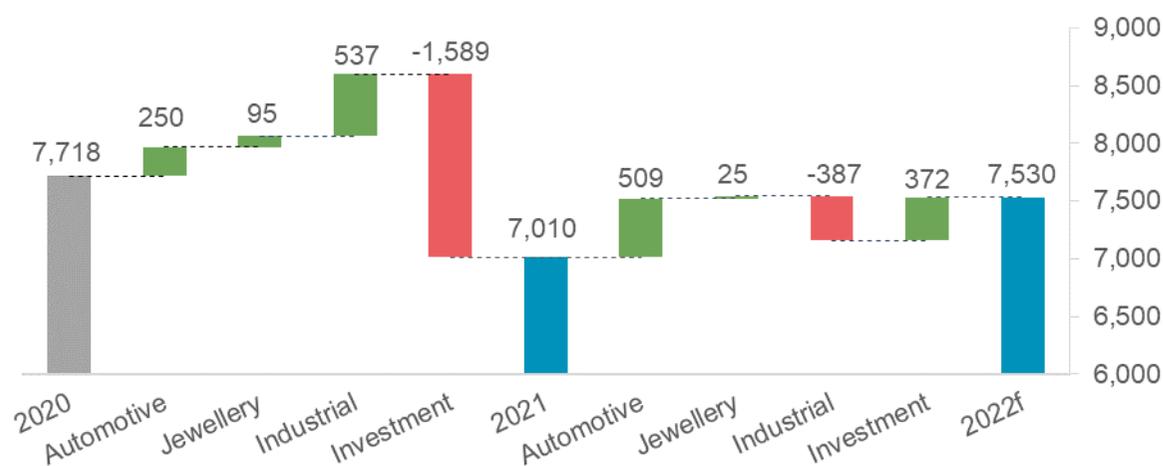
- Refined production down 3% (-198 koz)
- Recycling up 4% (+78 koz)
- Strong growth in automotive demand (+19%, +509 koz)
- Industrial demand -15% (-387 koz)
- Investment demand swing of +372 koz
- Market surplus of 652 koz (-47% YoY)

# 2022 OUTLOOK: KEY TRENDS SIMILAR TO 2021 BUT GREATER UNCERTAINTIES OVER SCALE OF SURPLUS

## Annual total supply and changes 2020 to 2022F (koz)



## Annual total demand and changes 2020 to 2022F (koz)



## Forecast 2022 YoY on 2021:

- South African refined production down 3% (-280 koz)
- Recycling supply up 4% (+78 koz) on improving new vehicle supply
- Auto demand up 19% (+509 koz) with ongoing chip shortages compensated by higher loadings and Pt-Pd substitution
- Industrial demand cyclically down 15% from record 2021, but still second highest annual demand ever
- Investment +372 koz YoY despite continued negative NYMEX demand

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## 3. Focus on fundamental drivers

- China imports & market surplus dynamics
- Constrained supply
- Automotive demand growth

*Trevor Raymond, Director of Research*

## 4. Questions

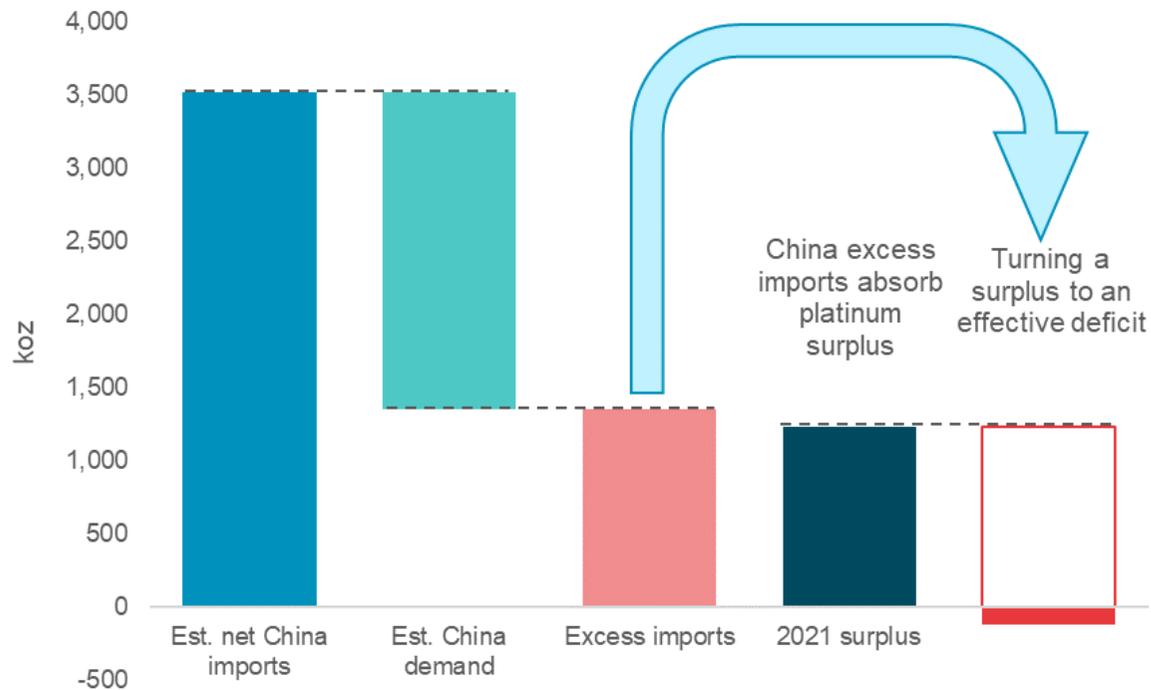
*Paul Wilson*

*Trevor Raymond*



# SURPLUS OR DEFICIT? EXCESS CHINA IMPORTS ABSORB FULL 2021 SURPLUS

## China platinum imports in 2021 absorb surplus



- Identified China demand for platinum estimated to total c.2.2 moz
- Bloomberg data suggests China net imports totalled c.3.5 moz koz
- Excess imports of c.1.3 moz potentially for speculative / stock purposes
- Sufficient to absorb full global platinum surplus of 1,232 koz
- **Too early to expect the same for 2022 but the market remains tight**

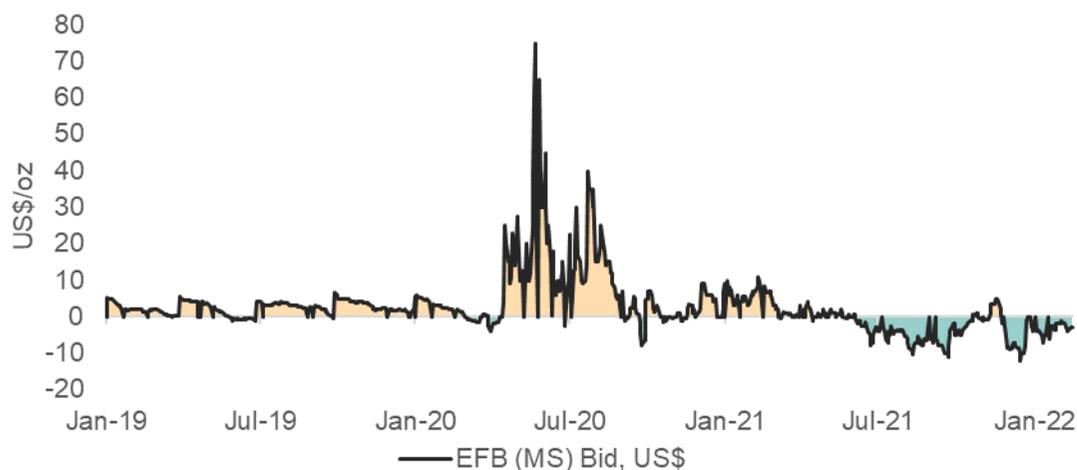
# SPOT MARKET TIGHTNESS DRIVEN BY CHINA APPETITE TO IMPORT MORE THAN DEMAND

## China platinum imports jumped in Q1'20



- China's COVID-related supply chain concerns and the price collapse appears to have supported strong platinum imports in Q1'20

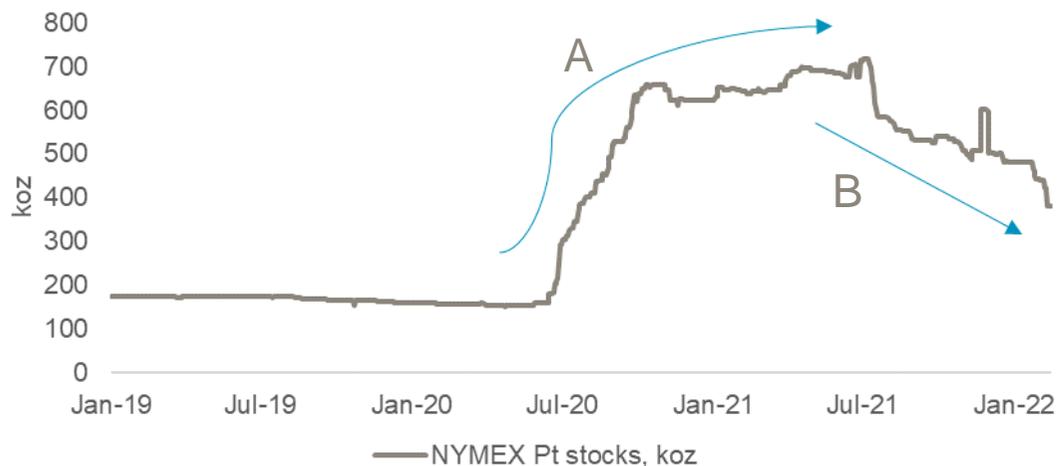
## EFB can drive NYMEX inventory flows



- COVID related disruptions to the automotive market in Q2'20 resulted in a fall in the platinum price and the EFP being priced well above 'break even'

# SPOT MARKET TIGHTNESS DRIVEN BY CHINA APPETITE TO IMPORT MORE THAN DEMAND

## NYMEX stock movements influenced spot metal demand



- Positive EFP rates in combination with reduced risk tolerance compelled traders to move metal from Europe to New York, increasing NYMEX stocks (period A)

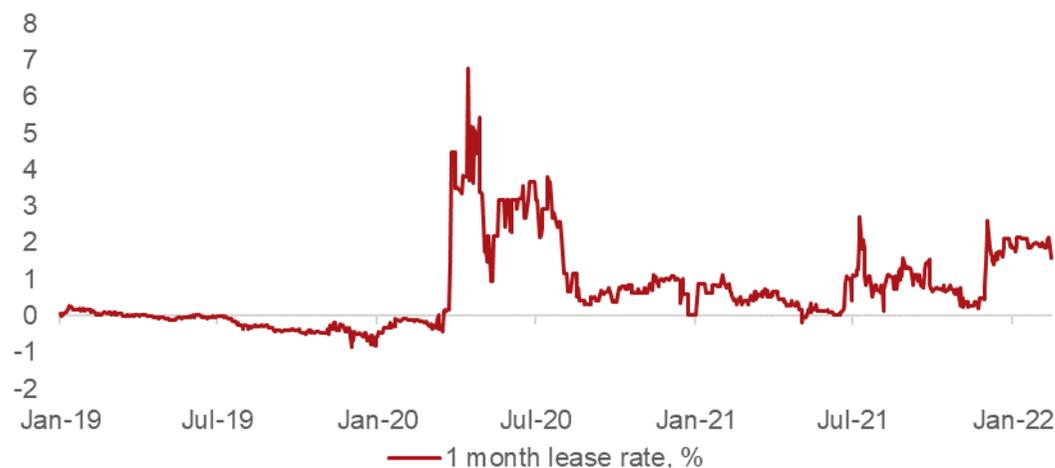
## China excess imports remain elevated



- Massive increases in China above-requirement purchases has tightened the spot market, causing a negative EFP and incentivising the stock drawdown from NYMEX inventories (period B)

# SPOT MARKET TIGHTNESS DRIVEN BY CHINA APPETITE TO IMPORT MORE THAN DEMAND

## Elevated platinum lease rates



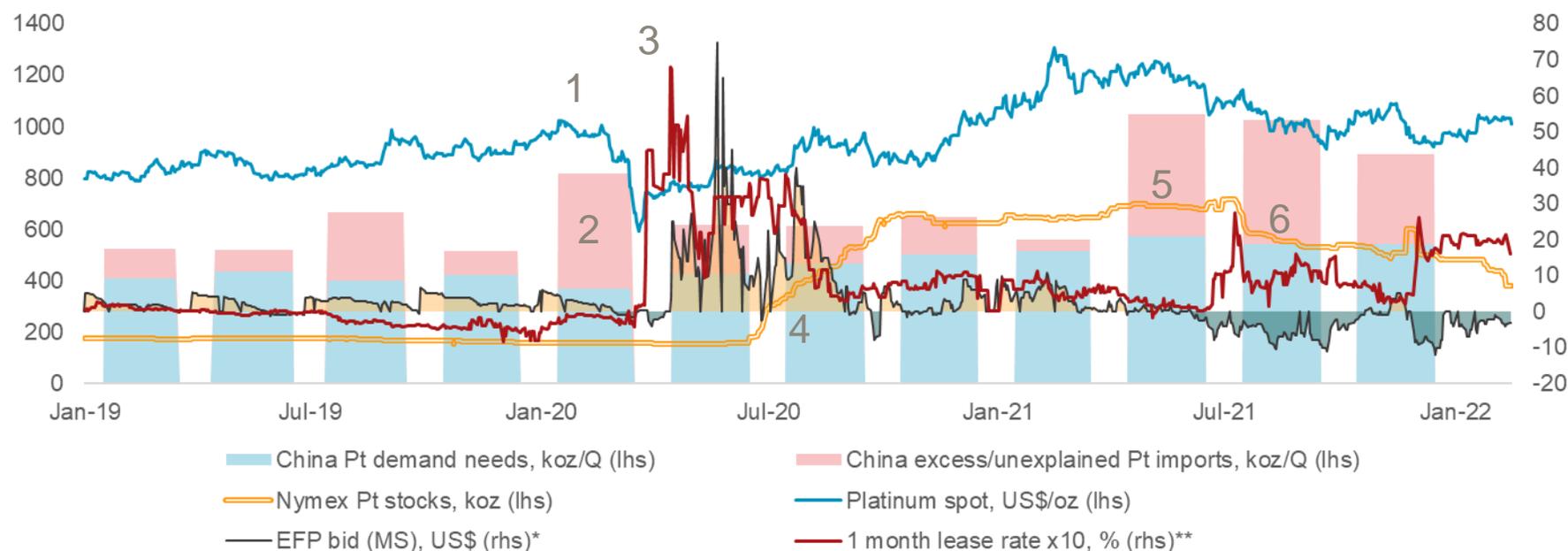
- Spot market tightness is evident in lease rates remaining above historical norms supplemented by rising interest rate expectations

## Relative platinum price strength



- Tightness also reflected in relative platinum price strength over H2'21 despite the faster than expected ACP unwind

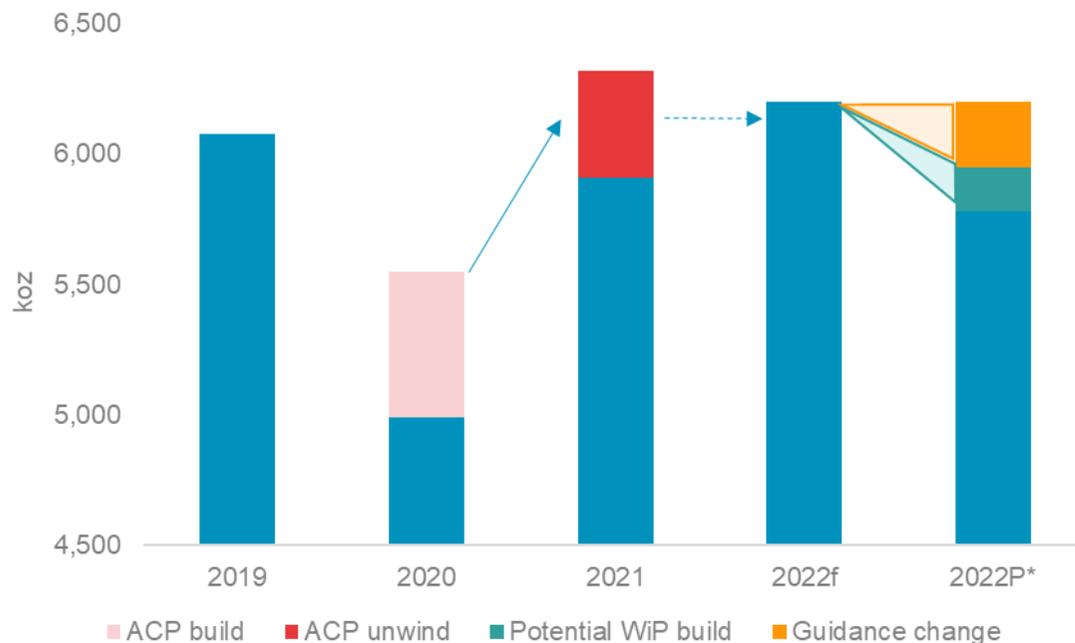
# SPOT MARKET TIGHTNESS DRIVEN BY CHINA APPETITE: COMBINATION CHART HIGHLIGHTS TIMING OF EVENTS



1. Investors fears on advent of COVID cause commodity sell-off
2. China supply chain concerns combined with opportunistic buying
3. Lease rate jumps on transportation constraints
4. Positive EFP and weak non-investment demand pulls platinum stocks onto NYMEX
5. Increased China demand pushes EFPs negative
6. Drawing platinum stocks from NYMEX

# REFINED MINE SUPPLY TO PLATEAU IN 2022: COULD BE REDUCED BY STOCK BUILDS AHEAD OF MAINTENANCE

## ACP unwind completed in 2021 Guidance changes and potential inventory build



- ACP unwind completed in 2021, but it looks like 150 koz remains unrefined
- Several major processing infrastructure programmes are scheduled in 2022
  - Anglo American Platinum – Polokwane smelter major rebuild starting Q4
  - Impala Platinum – Rustenburg smelter rebuild and reduced guidance for mining operations
- Refined mine supply to plateau in 2022
- Potential refined and WiP inventory build ahead of planned maintenance

# AUTOMAKER ICE POSITIONING BECOMING EVIDENT IN NEW ICE DEVELOPMENT ANNOUNCEMENTS

## Stellantis diesel engine under development



- Not all regions of the world are ready for electrification
- A number of automakers are developing new ICEs including lower CO2 emitting diesel
- Automakers with new engines in development include:

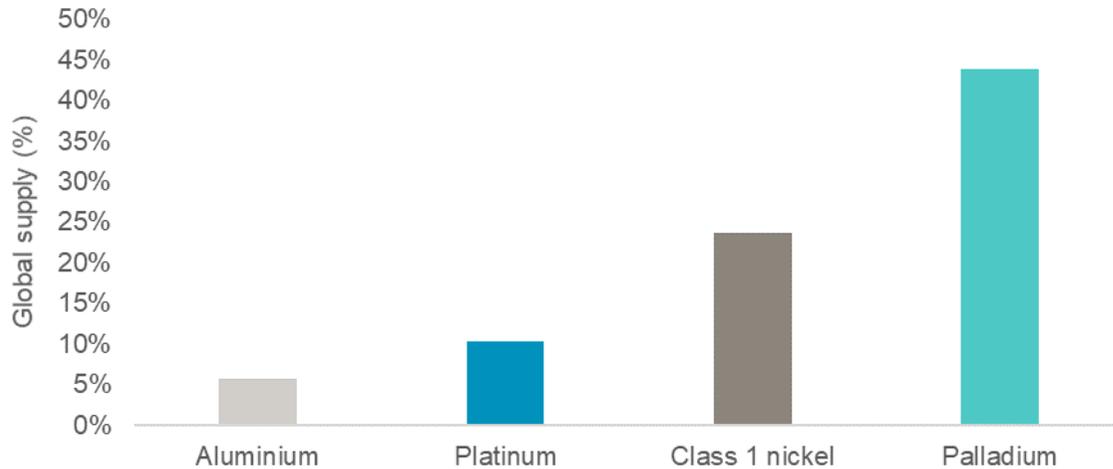
## BMW engines under development



- **Stellantis:** Four cylinder, turbo-diesel, for release 2023
- **BMW:** New six- and eight-cylinder petrol and diesel engines, release from 2023
- **Mercedes/Cummins:** Medium duty diesel engines for second half of 2020's
- New terminologies: endothermic and alternative fuel

# POTENTIAL IMPACT OF SANCTIONS AGAINST RUSSIA – IMPLICATIONS FOR ICE AND BEVS

## Russia is a major supplier of automotive raw materials



## Class 1 nickel is a key ingredient of lithium ion batteries

Increasing Power Density



**NMC 111**

Nickel: 33.3%  
Manganese: 33.3%  
Cobalt: 33.3%



**NMC 622**

Nickel: 60%  
Manganese: 20%  
Cobalt: 20%



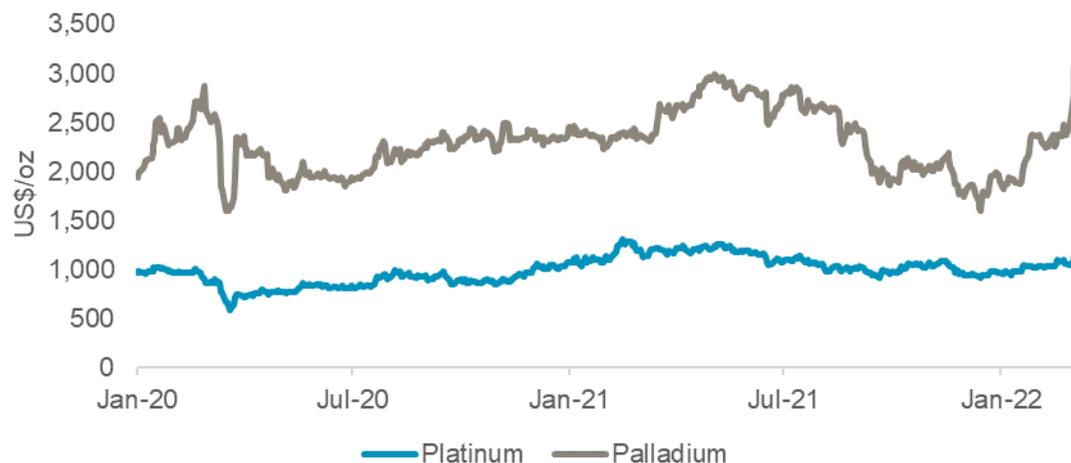
**NMC 811**

Nickel: 80%  
Manganese: 10%  
Cobalt: 10%

- Russia is a major source of palladium, platinum, class 1 nickel and aluminium
- At 40% of global palladium supply disruptions and security of supply considerations could further promote platinum substitution for palladium in petrol engines
- Class 1 nickel is a key input in lithium iron batteries for BEVs whilst aluminium is needed for light-weighting to compensate for battery weight
- Supply chain challenges could inhibit BEV growth in favour of ICE and FCEVs

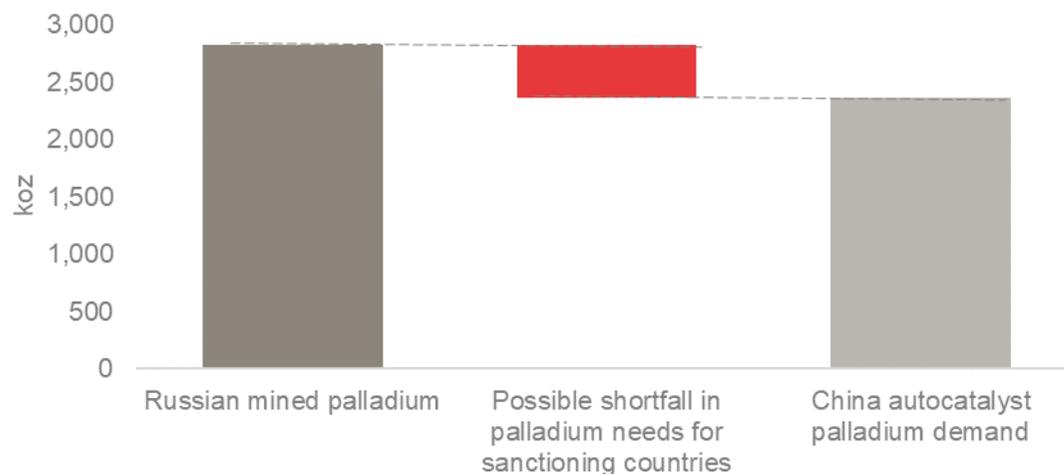
# COMMODITY MARKETS ARE RESPONDING TO POTENTIAL SUPPLY DISRUPTIONS FROM RUSSIA

## Palladium is pricing in supply disruption



- The palladium price has surged in response to potential supply disruptions from Russia
- We think most Russian origin palladium could be absorbed by China after a period of market disruption
- Sanctioning countries could be left short of ~450 koz palladium which may need to be compensated for with increased platinum for palladium substitution

## Disrupted palladium supplies could promote substitution



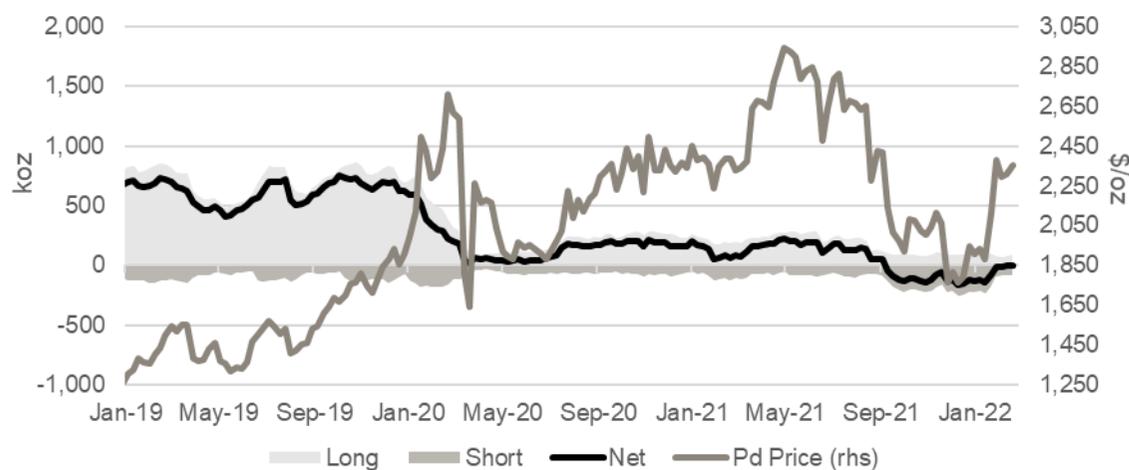
# INVESTOR POSITIONING HIGHLIGHTS TIGHT MARKET CONDITIONS IN BOTH PLATINUM AND PALLADIUM

## NYMEX managed money platinum positioning



- NYMEX managed money (speculative) platinum positioning net long 780 koz, up from net short 490 koz in mid December

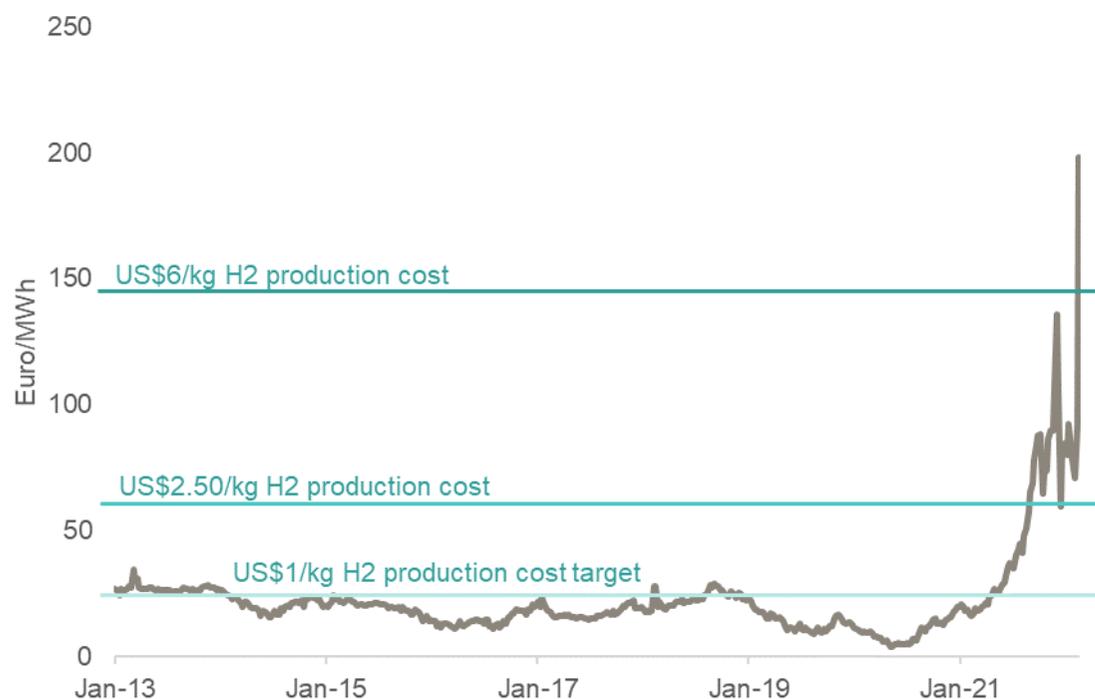
## NYMEX managed money palladium positioning



- Palladium positioning swinging back from deepest net short position since at least 2009 and now close to parity; likely on Russia tensions

# REDUCING EUROPEAN RELIANCE ON RUSSIAN GAS COULD BE POSITIVE FOR GREEN HYDROGEN

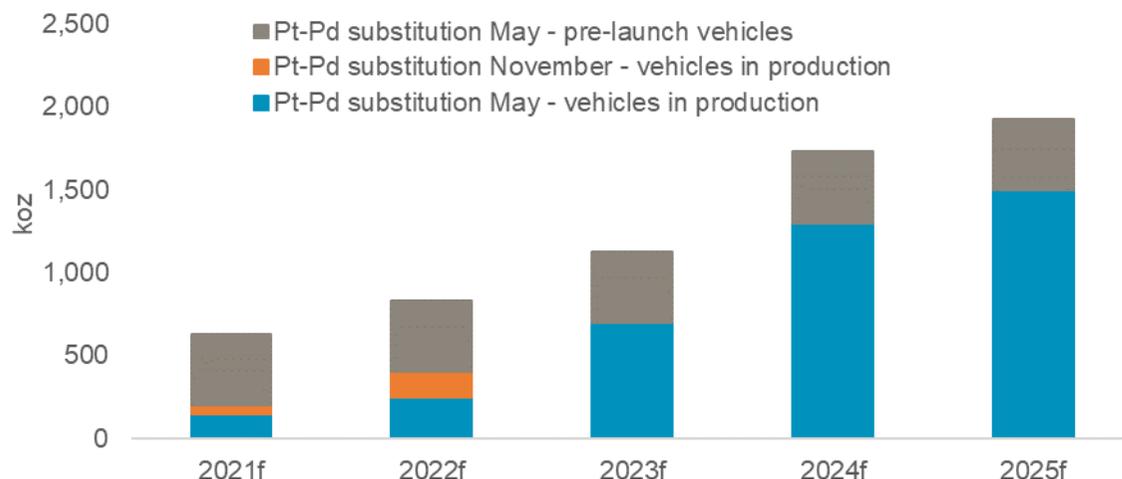
## Green hydrogen is cost competitive at current gas prices



- Europe currently imports ~40% of its gas supplies from Russia
- Blending 20% green hydrogen into gas supplies is possible with current infrastructure
- Could halve European reliance on Russian gas imports
- Green hydrogen currently costs US\$2.50/kg to US\$6.00/kg to make
- Competitive at current, albeit inflated, gas prices

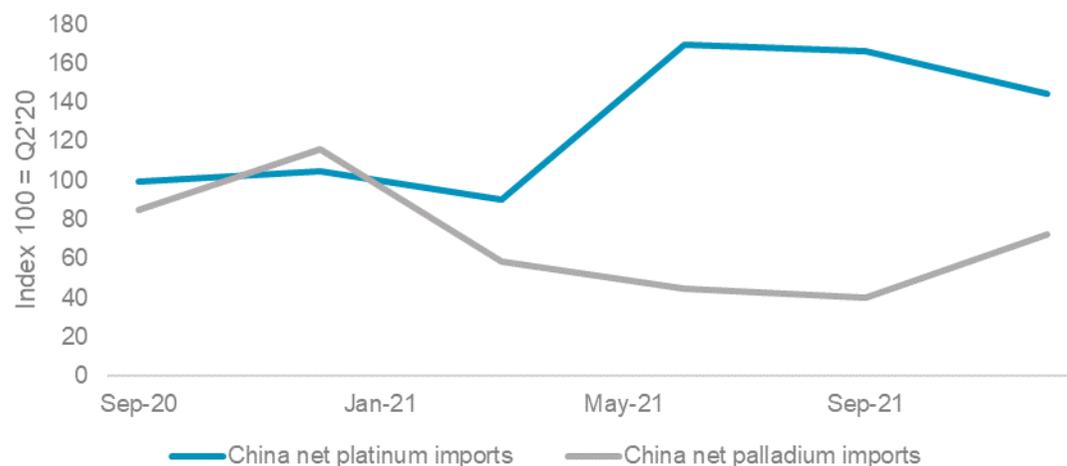
# WPIC SCENARIO: PT FOR PD SUBSTITUTION – COULD BE > 1.9 MOZ ADDITIONAL ANNUAL DEMAND BY 2025

## c.1.9 moz/year more auto pt demand by 2025



- Some market estimates point to:
  - c.200 koz of Pt for Pd substitution in vehicles already on sale in 2021 and growing strongly in 2022
  - Growing to 1.5 moz in 2025
- Current substitution projections do not include changes in metal mix in vehicles pre-launch
- Substitution in new China 6a/Euro 6d compliant LVs could be already boosting annual Pt substitution impact by 400 koz now and lift 2025 total over 1.9 moz
- Inverse response for Pt and Pd imports in China could indicate higher substitution

## China platinum imports running ahead of palladium



# WHY INVEST IN PLATINUM? TRANSIENT SUPPLY BOOST, LOADINGS, SUBSTITUTION & INVESTMENT UPSIDE RISK



- Refined supply boost from 560 koz of backlog material ends in 2022 – constrained mine supply similar to 2019 levels but risks are to the downside
- Strong China imports suggest higher HD loadings and more substitution as well as quasi-speculative demand
- High uncertainty in ETF investor behaviour and exchange stock levels with a potential for a reversal of the trend in owning the equities after record dividend pay-outs
- Reducing reliance on Russian palladium would increase substitution for platinum
- Growing certainty regarding hydrogen in decarbonisation and platinum’s strategic role is attracting more investors to platinum

# AGENDA: PLATINUM QUARTERLY: Q4 2021, FULL YEAR 2021 AND INITIAL 2022 FORECAST

## 1. Introduction

*Paul Wilson*

## 2. Platinum Quarterly, fundamentals review

*Trevor Raymond*

## 3. Focus on fundamental drivers

*Trevor Raymond*

## 4. Questions

*Paul Wilson, CEO*

*Trevor Raymond, Director of Research*

