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AGENDA: PLATINUM QUARTERLY: Q3 2018, REVISED 2018 FORECAST AND NEW 2019 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



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- Q3'18 and 2018f update
- New 2019f

Trevor Raymond, Director of Research

3. Focus on fundamental drivers

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Q3 2018 SUPPLY: STRONG MINING AND AUTOCAT RECYCLING IN Q3



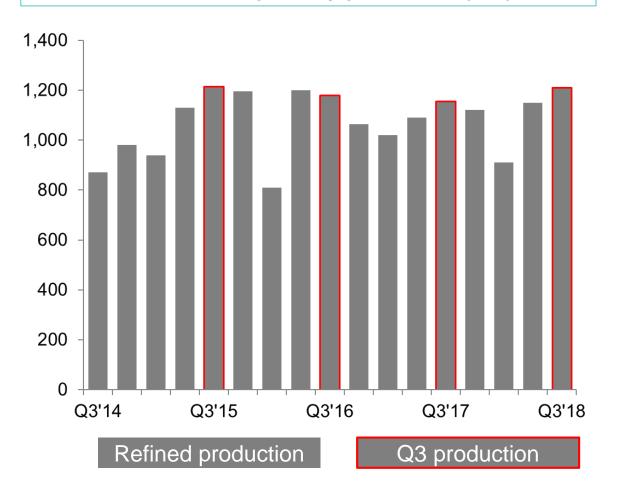
SUPPLY	Q3 2017 //	Q2 2018	Q3 2018
Refined Production	1,580	1,600	1,650
South Africa	1,155	1,150	1,210
Zimbabwe	100	115	120
North America	95	85	90
Russia	185	205	185
Other	45	45	45
Inc(-)/Dec(+) in Producer Inventory	-10	+55	-20
Total Mining Supply	1,570	1,655	1,630
Recycling Autocatalyst Jewellery	480 330 150	480 345 135	485 365 120
Industrial	0	0	0
Total Supply	2,050	2,135	2,115

- Strong South African supply on fewer operational disruptions
- Working inventory rebuild after Q2 drawdown
- Greater auto recycling on steel and PGM prices
- Q3'18 total supply up 3.2% on Q3'17

MINING SUPPLY: DECLINING TREND REVERSED ON FEWER DISRUPTIONS AND HIGHER EFFICIENCY



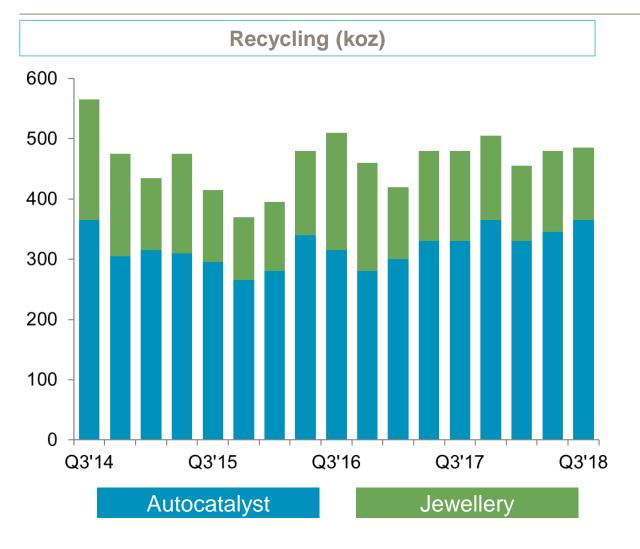
South African quarterly production (koz)



- South Africa experienced another quarter of elevated operating tempo due to fewer operational interruptions, e.g., industrial action, section 54 stoppages
- Declining Q3 trend reversed, also due to fewer operational disruptions

RECYCLING: LONG TERM AUTOCATALYST GROWTH STEADY BUT SOME SHORT TERM PRICE RESPONSE





- Q2 and Q3 response to prices of scrap steel, palladium and rhodium
- Firmer scrap steel price increasing endof-life vehicle flow to collectors
- Flow of gasoline catalysts increasing flow of all catalyst recycling
- Weak jewellery recycling on low price and depressed sales in China

Q3 2018 DEMAND: AUTO DOWN, INDUSTRIAL UP AND INVESTMENT LOW BUT RISING

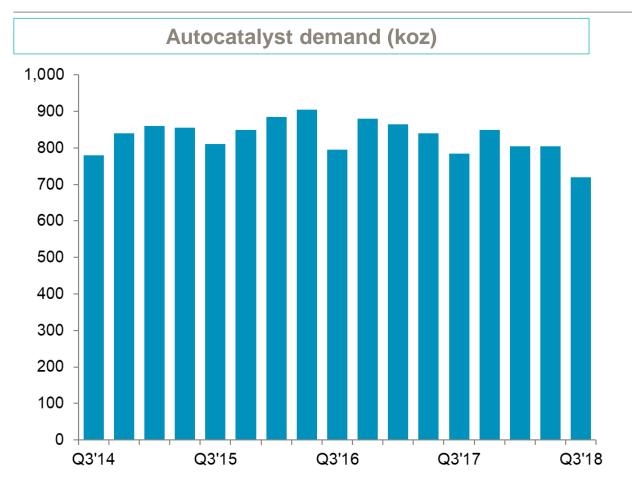


DEMAND	Q3 2017 //	Q2 2018	Q3 2018
Automotive	785	805	720
Autocatalyst	750	770	685
Non-road	35	40	35
Jewellery	580	590	580
Industrial	425	470	450
Chemical	165	140	160
Petroleum	25	45	45
Electrical	50	45	50
Glass	45	65	50
Medical & Biomedical	45	70	45
Other	95	105	100
Investment	-10	-55	60
Change in Bars, Coins	45	70	65
Change in ETF Holdings	-40	-125	5
Change in Stocks Held by Exchanges	-15	0	-10
Total Demand	1,780	1,810	1,810
Balance	270	325	305

- Automotive demand down 8% (65 koz)
 YoY as W. Europe diesel sales continue to fall
- Industrial rebound from 2017 with quarterly demand up 25 koz YoY
- Strong bar and coin demand; ETF demand turned positive

Q2 2018 DEMAND: AUTOCATALYST DEMAND DOWN ON FALLING EU DIESEL SALES

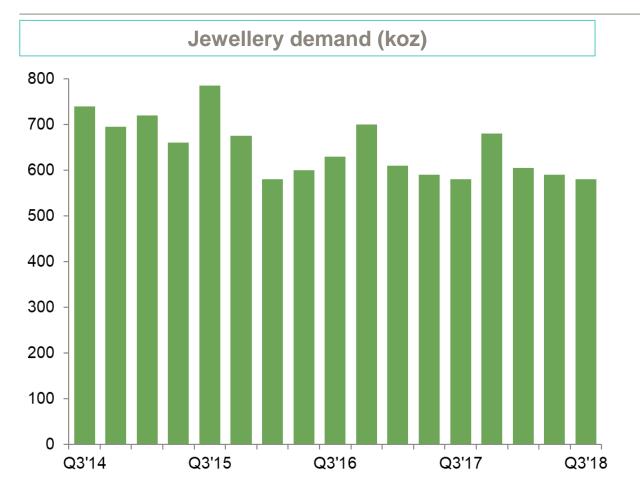




- Autocatalyst (excl. non-road) demand fell
 9% to 685 koz in Q3'18 from 750 koz in
 Q3'17
- Fourth consecutive Q3 decline as fall in
 W. Europe diesel sales continues
- Increasingly severe financial impact on automakers from falling diesel sales

Q3 2018 DEMAND: JEWELLERY WEAKER IN CHINA MODEST GROWTH IN OTHER REGIONS

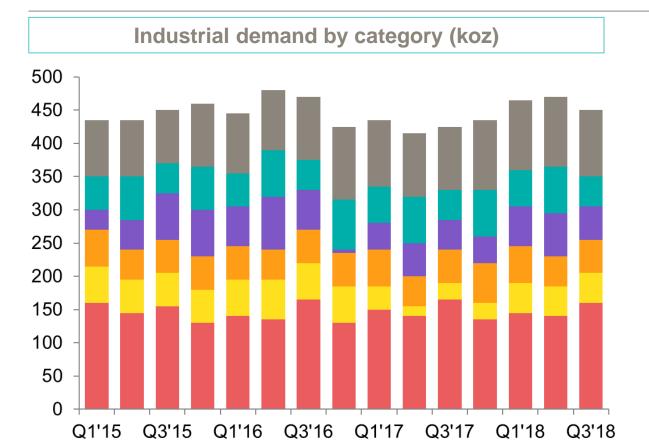




- Jewellery demand was 580 koz in Q3'18, second consecutive flat quarter YoY
- Gains in US and India unable to offset weakness in China
- SGE purchasing of platinum not reflecting improvement in China retail jewellery

Q3 2018 DEMAND: INDUSTRIAL DEMAND HIGHER ON NET GROWTH IN PETROLEUM AND GLASS V Q3 2017





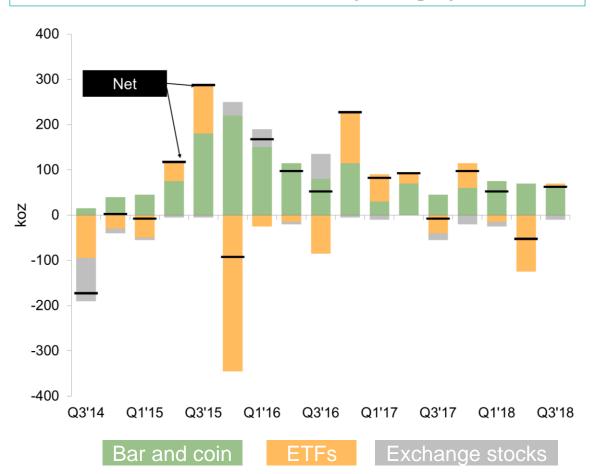
■ Chemical ■ Petroleum ■ Electrical ■ Glass ■ Medical & Biomedical ■ Other

- Platinum industrial demand was 450 koz in Q3'18, up 25 koz (+6%) YoY
- Petroleum resurgence continues
- Glass growth has been due to capacity expansion in W. Europe and RoW

Q3 2018 DEMAND: INVESTMENT UP BAR & COIN DEMAND STABLE, ETF OUTFLOWS REVERSED



Investment demand by category



- ETF demand stabilised
- Bar & coin demand was strong on increased awareness, low price and more products
- Exchange stocks responded to reduced long positioning

ANNUAL BALANCES: 2018 IN SURPLUS BUT REDUCED SURPLUS IN 2019 – SUPPLY & DEMAND BOTH UP



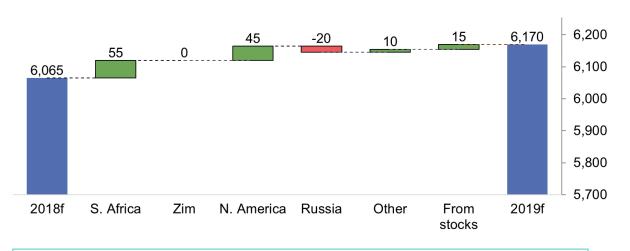
SUPPLY	2018f	2019f	YoY, oz	Yo Y, %
Refined Production	6,080	6,170	90	1%
South Africa	4,395	4,450	55	1%
Zimbabwe	465	465	0	0%
North America	365	410	45	12%
Russia	685	665	-20	-3%
Other	170	180	10	6%
Inc (-)/Dec (+) in Producer Inventory	-15	+0	15	-100%
Total Mining Supply	6,065	6,170	105	2%
Recycling	1,910	1,935	25	1%
Autocatalyst	1,405	1,450	45	3%
Jewellery	500	480	-20	-4%
Industrial	5	5	0	0%
Total Supply	7,975	8,105	130	2%
DEMAND				
DEMAND	0.440	0.075	0.5	407
Automotive	3,110	3,075	-35	-1%
Jewellery	2,405	2,430	25	1%
Industrial	1,830	1,895	65	4%
Investment	125	250	125	100%
Total Demand	7,470	7,650	180	2%
Balance	505	455		
Above Ground Stocks	2,665	3,120	455	17%

- Total supply up 1.6% (105 koz) in 2019
- S.A. supply up 1.3% (55 koz) on fewer operational disruptions
- Total demand up 2.4% on industrial and investment, partly offset by automotive
- Surplus in 2019 (455 koz) 10% below surplus in 2018

2019 SUPPLY AND DEMAND BOTH 2% ABOVE LEVELS IN 2018

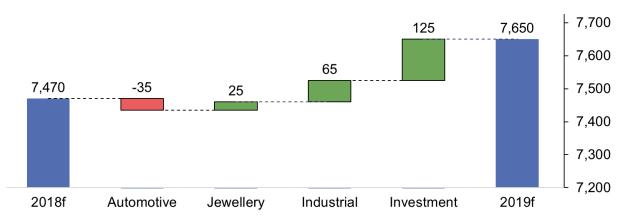


Total mining supply 2018 to 2019



- Mining supply up 2% South Africa up on lower operational disruptions and US up on new project
- Total demand up 2% Weak auto on diesel decline, jewellery growth from India sees jewellery up (first in 4 years)

Total demand 2018 to 2019



- Industrial up on petroleum and glass
- Investment to double on strong bar & coin plus ETF rebound

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- Diesel retrofitting
- PGM substitution and China 6

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GERMANY OFFERS A POTENTIAL REMEDY FOR DIESEL RESTRICTIONS



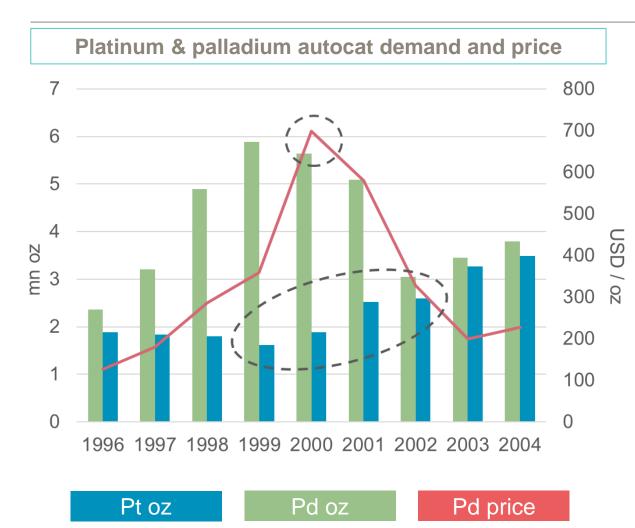
Germany has established a 270 mg/km NOx limit allowing retrofitted diesels to avoid bans

- In 2018, a court ruling banned Euro 4 and 5 diesel vehicles from German cities starting in 2019
- To prevent driving bans, the government has helped develop a program to allow diesel cars with <270 mg/km NO_x to be allowed to drive in city centres
- A program to retrofit diesel emission equipment will be available to owners and will potentially affect the 6.3 million non-Euro 6 vehicles in Germany; an exchange option will also be available
- The German initiative could set a precedent for all of the EU:
 - retrofitting emissions equipment to <270 mg/km; alternatively offering discounted exchanges for new vehicles
 - independent testing
- Platinum could form part of some retrofitting; the program may help restore consumer confidence

Source: WPIC research, BMVI

PALLADIUM PRICE PREMIUM INTRODUCES LIKELIHOOD OF SUBSTITUTION (1)





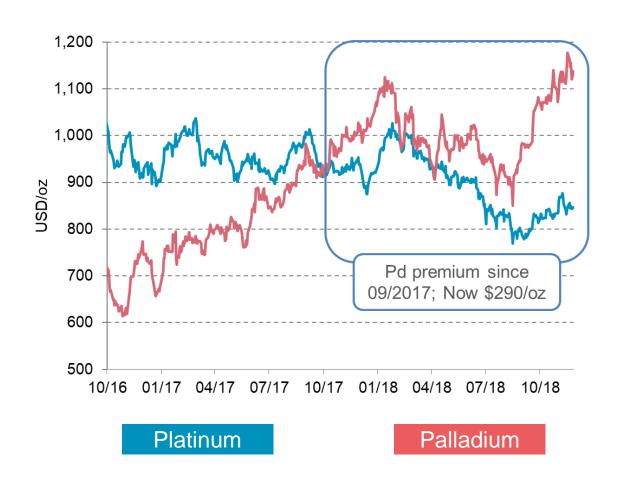
Platinum has substituted for palladium in gasoline cars in past price peaks.

- Platinum demand benefited following the 2000 palladium price peak
- Palladium peaked at about \$1,000 in late
 2000
- Platinum volume grew 61% from 1999, to 2002, c.1 mn oz

PALLADIUM PRICE PREMIUM INTRODUCES LIKELIHOOD OF SUBSTITUTION (2)



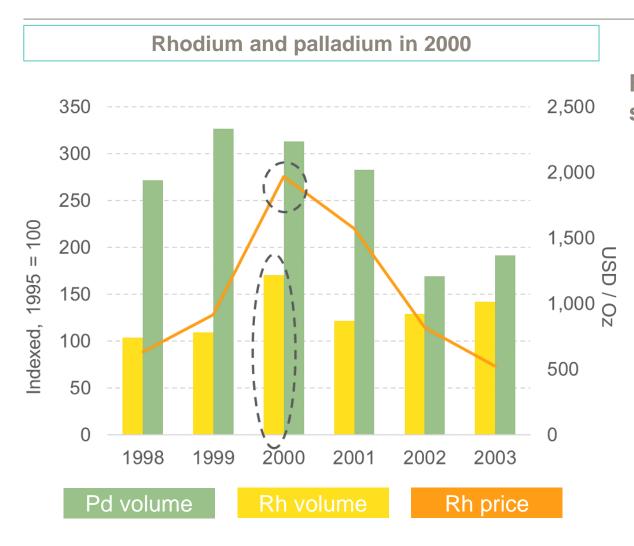
Platinum and palladium price



- Palladium's price first rose above platinum in September 2017, expanding sharply starting in mid-Q3 2018
- Palladium was \$291/oz above platinum on 26 November 2018

RHODIUM'S PRICE TRAJECTORY IN 2000 APPEARED TO INDICATE EARLY USE OF RHODIUM – 2018 SIMILAR?





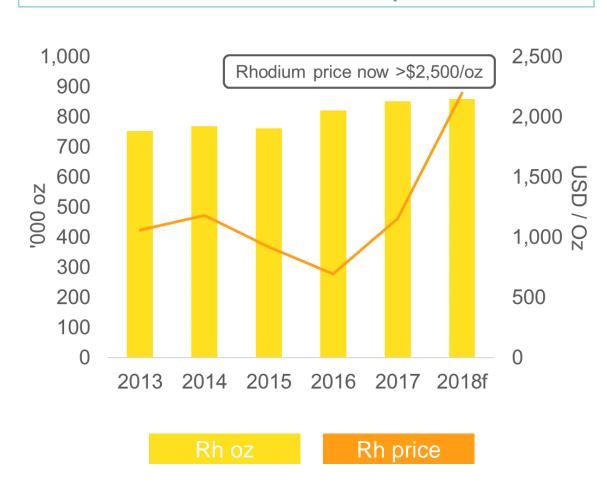
Rhodium also has some precedent for substituting for palladium

- The 2000 peak in rhodium price followed use by some automakers to replace palladium
- The rhodium price rise dissuaded other automakers who then used platinum to replace palladium.
- Rhodium price peaked at over \$2,000/oz in 2000
- Rhodium volume spiked in 2000 due to "strategic" buying

RHODIUM'S PRICE TRAJECTORY IN 2000 APPEARED TO INDICATE EARLY USE OF RHODIUM – 2018 SIMILAR?



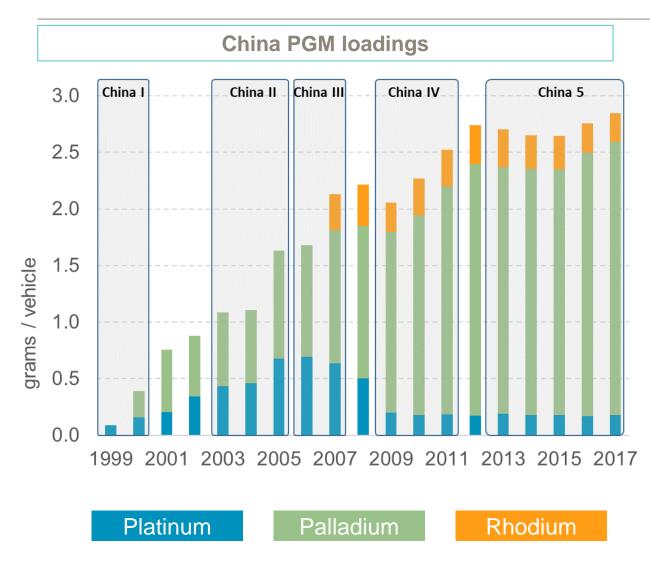
Rhodium volume and price



- Rhodium's recent price increase may indicate that some automakers have replaced palladium with rhodium
- The current rhodium price may act as a deterrent similar to the early 2000s

CHINA EMISSIONS STANDARDS HAVE A SIGNIFICANT IMPACT ON PGM USAGE (1)



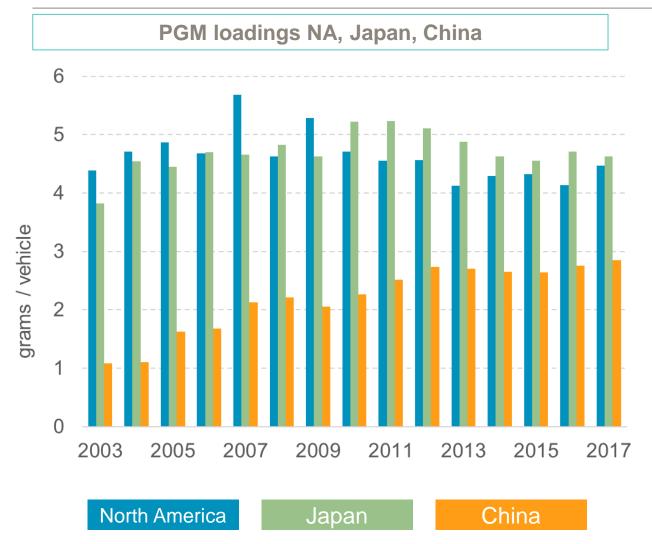


- Vehicle PGM loadings increased with the implementation of each new emissions standard
- China 6 is significantly more stringent including RDE testing and elements from both EU and US standards

Source: OICA, Johnson Matthey, WPIC Research

CHINA EMISSIONS STANDARDS HAVE A SIGNIFICANT IMPACT ON PGM USAGE (2)



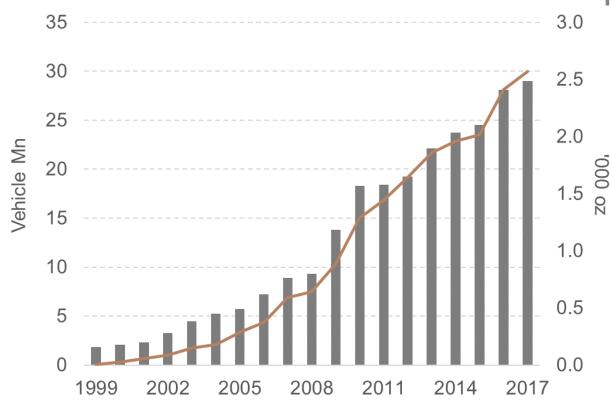


 China 6a and 6b should reduce the PGM loadings gap with North America and Japan

CHINA VEHICLE PRODUCTION GROWTH AND PGM DEMAND GROWTH – PGM SUBSTITUTION MORE LIKELY



China vehicle production and autocat PGM demand



PGMs up on vehicle growth and China 6

- More stringent emissions environment in China – vehicle and air quality
- Increased concerns for palladium price and availability substitution of palladium by platinum reduces automaker risk
- Potential for significant positive impact on platinum demand

PGM autocat demand, rhs

Total vehicle production

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