

Will independent on-road testing arrest diesel's decline?

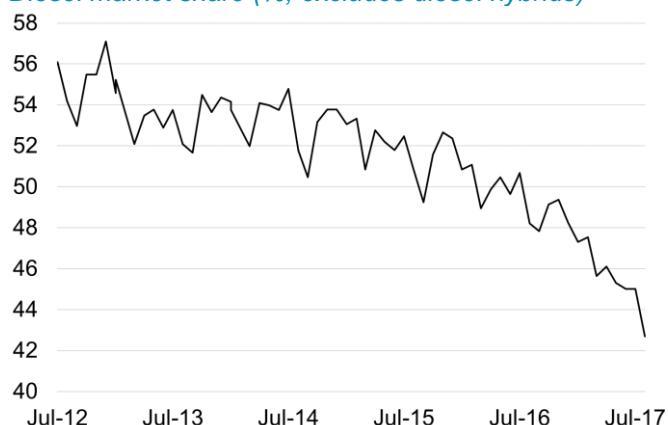
European passenger diesel market share faces headwinds. Specifically, the focus on NO_x emissions and policy uncertainty is leading some consumers to choose gasoline over diesel. The AIR ([Allow Independent Road-testing](#)) alliance, announced this week, could provide clarity on the emissions dilemma to help policy makers and consumers alike.

Market assumption: European passenger diesel market share is in rapid terminal decline, and nothing can be done to change this. With this view many potential negative impacts are being ignored (e.g. recalibration of oil refinery capacity), or assumed to be mitigated (i.e. increased CO₂ emissions, pressure on automakers' margins).

Our view: The current decline in European passenger diesel market share is accelerated by consumer confusion on 1) automakers' misleading emissions claims, and 2) policy decisions by cities to ban some diesel vehicles. The clear A-H rating system provided by AIR is based on independent data and analysis. It gives clear measures of on-road NO_x (as well as CO₂) for 1500 cars registered since 2009. AIR has made the testing protocol available at no charge to enable third parties to also test any vehicle (including any that may be retrofitted).

These ratings could lead to data-led city policy making, fairly comparing cars, which could be effective in reducing urban NO_x. Also, they could incent automakers to deliver on low NO_x strategies for diesel, allowing consumers to purchase low NO_x diesel vehicles with clarity on tax and regulatory implications. This could rebuild consumer confidence. As a result, **European passenger diesel share could be higher than many expect.** However, even assuming things develop as we expect, it is likely that, over the next few months at least, European passenger diesel share will continue to decline, with gasoline share (and CO₂) rising.

Diesel market share (% , excludes diesel hybrids)



Source: LMC Automotive

AIR ratings for diesel passenger vehicles

Rating	NO _x emissions (mg/km)	Model examples (year) - Euro 6 compliant vehicles registered in 2015, 2016 and 2017
A	at or below 80	Mercedes-Benz C-Class (2017) Volkswagen Tiguan (2017)
B	80 to 120	Skoda Kodiaq (2017) Volkswagen Golf (2017)
C	120 to 180	BMW 4 Series (2016) Mercedes-Benz E-Class (2016)
D	180 to 250	Kia Cee'd (2016) Peugeot 308 (2016)
E	250 to 500	Nissan Micra (2017) Kia Optima (2017)
F	500 to 750	Ford S-Max (2016) Mercedes-Benz C-Class (2015)
G	750 to 1000	Renault Kadjar (2015) Ford Mondeo (2015)
H	>1,000	Nissan Juke (2015) Nissan Qashqai (2016)

Source: AIR Alliance, Emissions Analytics. Note: Ratings are inclusive of the upper bound and exclusive of the lower.

Our view: Impact from falling diesel share on platinum is overestimated. European passenger diesel is c15% of platinum demand. We highlight that 1) diesel share in heavy duty is likely to remain robust, with battery an inappropriate replacement technology; 2) there is potential for diesel market share gains in the US (as highlighted by Johnson Matthey's recent Capital Markets Day); 3) the impact of a declining diesel passenger market share has been moderated by vehicle size. Diesel share of small cars, which contain less platinum has fallen more than in larger vehicles which contain more platinum; and 4) higher platinum loadings from low NO_x strategies is ignored.

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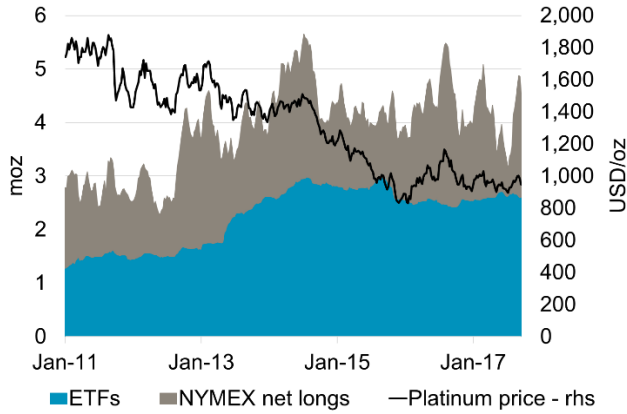
September 2017

Platinum in six charts – September 2017

We believe there are many reasons supporting consideration of platinum as an investment asset:

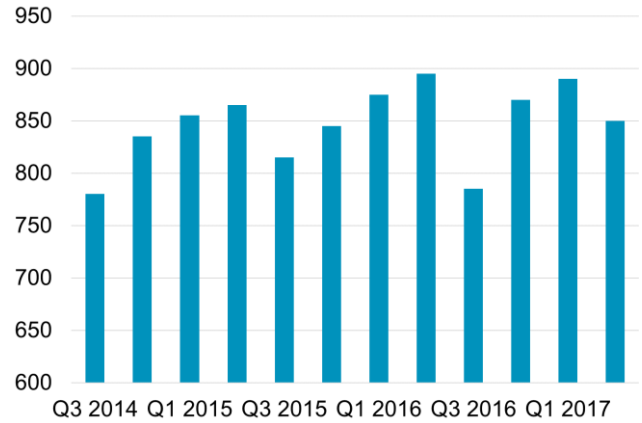
- Supply demand fundamentals are strong and ETF holdings are stable, despite price volatility
- Risks of supply declines are underestimated - cost pressure and falling mining investment continue
- Downside risks to platinum automotive demand are overestimated
- Futures positioning follows sentiment with high correlation to price
- Platinum is undervalued against its past, its production cost and against gold

Figure 1: ETF holdings stable despite price volatility; high correlation between futures positioning and price



Source: Bloomberg, WPIC Research

Figure 4: Automotive platinum demand starting to be impacted by European diesel share falls



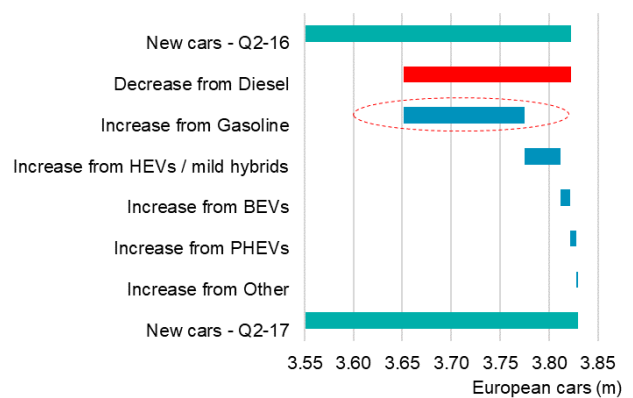
Source: WPIC Platinum Quarterly Q2 2017, SFA (Oxford)

Figure 2: Platinum discount to gold at an all-time high of c\$370



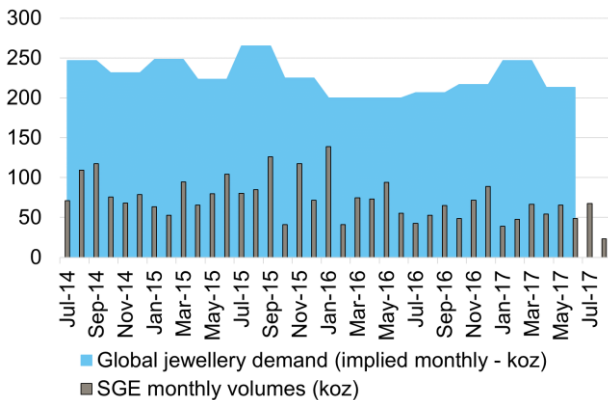
Source: Bloomberg, WPIC research

Figure 5: Diesel vehicles lost continue to be replaced by gasoline rather than hybrid or battery vehicles



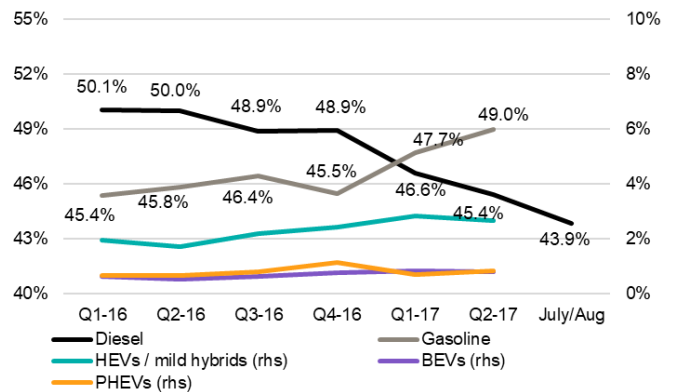
Source: LMC, ACEA, WPIC research

Figure 3: ROW platinum jewellery demand growth offsets dip in China demand



Source: Bloomberg, SFA (Oxford), WPIC research

Figure 6: European* passenger powertrain market share (%)



Source: LMC, ACEA, WPIC research.

* Europe includes passenger vehicles in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, UK, Norway and Switzerland (based on the availability of both diesel market share data and Alternative Fuel Vehicle data). HEVs – Hybrid Electric Vehicles; BEVs – Battery Electric Vehicles; PHEVs – Plug-in Hybrid Electric Vehicles