



MARKET SPOTLIGHT

Will ID.3 pull the plug on palladium and rhodium demand?

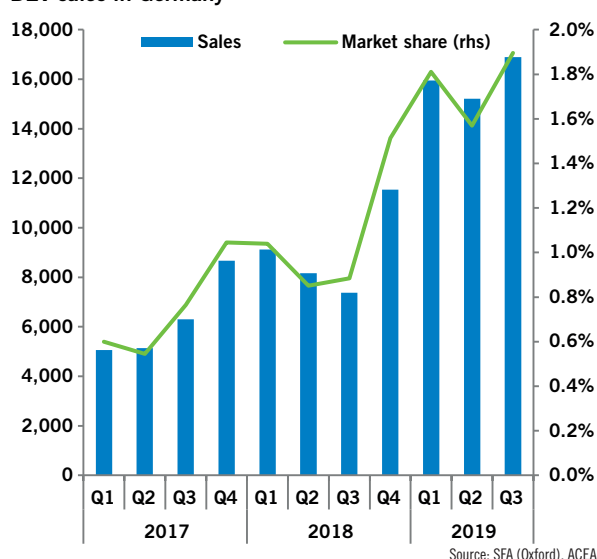
The automotive industry accounts for 81% and 83% of palladium and rhodium demand respectively. In Germany, auto manufacturers represent over a third of Western European automotive demand for both metals.

Volkswagen Group's (VW) first mass-market battery electric vehicle (BEV) entered production on 4 November. VW has begun production of its new BEV, the ID.3, at its plant in Zwickau, Germany. This is the company's first high-volume BEV targeted at the mid-market (family hatchback) segment. Production is starting at 30 units per day, but ramping up in 2020, with 100,000 units scheduled to be produced next year. In 2021, production will be up to 330,000 vehicles, including six models from three Group brands. VW plans to sell 22 million BEVs worldwide by 2028.

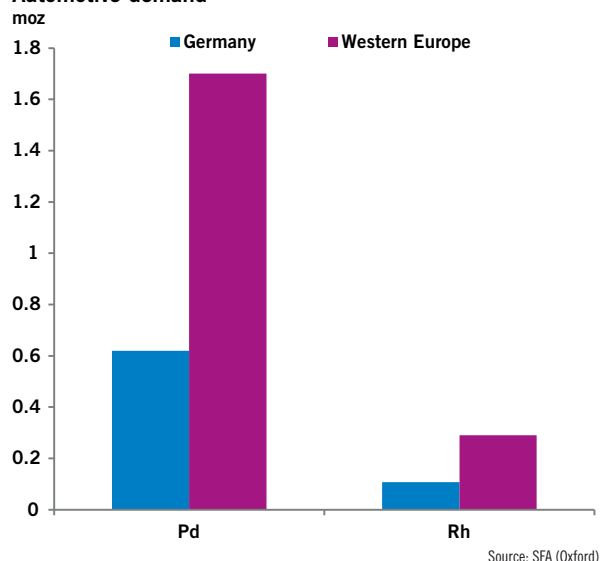
A true test for BEVs as costs reach parity with the ICE (internal combustion engine). The German government has announced it is supporting BEVs by increasing the purchase subsidy by 50% to €6,000 (for cars costing less than €40,000) and extending the programme to 2025. The basic ID.3 is set to be priced at under €30,000 in Germany, so with the subsidy that would mean its cost would be similar to that of a mid-level Golf.

Will consumers buy a mass-market BEV? The production of a mass-market BEV at a similar price to an ICE car will demonstrate just how readily consumers will switch to BEVs. This year, electric vehicle sales in Germany are on track to reach 60,000 units, for a market share of around 1.7%, but this number will need to double and then double again for sales to keep up with VW's production plans. The next couple of years could reveal just what level of BEV sales is possible. This is a critical question not just for car manufacturers and CO₂ emissions, but also for PGM demand.

BEV sales in Germany



Automotive demand



In the near term, tightening emissions legislation is driving palladium and rhodium demand, keeping prices high. ID.3 production started last week; **an affordable BEV for the mass market from VW is the biggest threat to palladium and rhodium prices.**



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,465	-3.06%	1,515	04/11/2019	1,456	08/11/2019
€/oz	1,329	-1.74%	1,358	04/11/2019	1,320	08/11/2019

No glitter for gold jewellery. Global demand in the jewellery sector fell by 16% to 460.9 t in Q3, the poorest performing quarter in over nine years (source: World Gold Council). Demand in India, which usually accounts for over a quarter of gold jewellery consumption globally, contracted by 32% year-on-year to 101.6 t. The high price and excessive monsoon rains in rural regions contributed to weak consumer sentiment. China saw a similar trend, declining by 14% to 164.4 t, with consumers opting for lighter-per-piece items such as 3D gold. Given the already slow start to the festival season in India this quarter, sales will have to recover by more

than a third to be higher than in 2018, which is looking unlikely.

Improved risk appetite dented gold. China-US trade talks appeared to be making some progress last week which improved stock market sentiment and sent US stocks to record highs. However, gold gave back the gains it had made the previous week following the Fed's rate cut announcement and more, slipping back below \$1,480/oz. The shift in sentiment to a more "risk on" outlook suggests the risks are to the downside for gold in the near term.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	16.88	-6.69%	18.22	04/11/2019	16.70	08/11/2019
€/oz	15.32	-5.43%	16.33	04/11/2019	15.14	08/11/2019

Semiconductors: the chips are down but 5G looks set to help silver demand. Global sales of semiconductors in Q3 were 14.6% lower than the same time last year (source: World Semiconductor Trade Statistics). However, production is likely to expand over the next year as the 5G network takes off. Sales gained 8.2% on the previous quarter, led partly by China which launched the world's largest 5G network last week across 50 cities. China is the largest consumer of semiconductors and the world's largest mobile phone market. The aim is to have

around 600 million people, or 40% of the entire global market, using 5G by 2025. Silver usage in electrical and electronic applications (248.5 moz) represents 24% of total demand. With most other countries earmarking 2020 for 5G rollout, electronic demand for silver should see gains as manufacturers rush to produce compatible devices.

Yet again silver underperformed gold as the price fell back rapidly from over \$18/oz to below \$17/oz.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	893	-6.09%	955	04/11/2019	887	08/11/2019
€/oz	811	-4.76%	857	04/11/2019	805	08/11/2019

Production of platinum-based cancer drugs is increasing. Heraeus Pharmaceutical Ingredients has expanded capacity for platinum-based active pharmaceutical ingredients with an additional production line in Hanau, Germany. Platinum-based chemotherapy drugs are among the most powerful and widely used forms of treatment, yet medical applications account for only around 240 koz of platinum, or just 3% of current global demand.

Germany's diesel sales are a (tail) pipe dream. After the WLTP-related supply disruptions last year, total passenger car registrations in October bounced back to 13% higher

at 284,593 units, helped by recovering sales of diesel cars which gained 9.6% from a year earlier. However, at 88,042 units the diesel market share was just 30.9%. Diesel sales in the remaining four major European markets all reported double-digit declines. As the largest diesel market, autocatalysts in Western Europe currently make up around 16% or 1.1 moz of global demand for platinum, but this will fall as the diesel market continues to shrink. The platinum spot price followed gold lower last week, dropping below \$900/oz. With weak fundamentals and a gold price susceptible to further declines platinum could also have further to fall.



PRECIOUS METALS REVIEW

⁴⁶Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,749	-3.31%	1,822	04/11/2019	1,741	08/11/2019
€/oz	1,586	-2.25%	1,641	07/11/2019	1,580	08/11/2019

Petrol tightens its grip on the European market.

Registrations of petrol cars in Europe increased by 6.1% to 2.2 million units in Q3. As diesel sales suffered further, petrol cars' share of the market was boosted to almost 60%, and alternatively powered vehicles' share reached 11.5% (source: ACEA). Four of the five major European markets (France, Germany, Italy and the UK)

witnessed higher petrol car sales in Q3, particularly the Italian market which expanded by more than a third to 171,724 units. Spain was the exception with a 3% drop in petrol sales. Palladium loadings in Western Europe account for around 1.7 moz, or 20% of global autocatalyst demand.

⁴⁵Rh ⁴⁴Ru ⁷⁷Ir **Rhodium, Ruthenium, Iridium**

	Rhodium	Ruthenium	Iridium
Reporting week	\$5,575/oz	\$250/oz	\$1,500/oz
Previous week	\$5,425/oz	\$250/oz	\$1,500/oz

Ruthenium rides the wave of new water treatment legislation.

Another ruthenium-based ballast water treatment system (BWTS), known as EcoGuardian™, has been approved by the US Coast Guard, and meets new stricter ballast water management standards. The EcoGuardian™ system by South Korean BWTS maker, Hanla IMS, uses a combination of filtration and electrochlorination to treat the water. The two-stage process is more efficient than the alternative UV irradiation system, and uses ruthenium, and to a

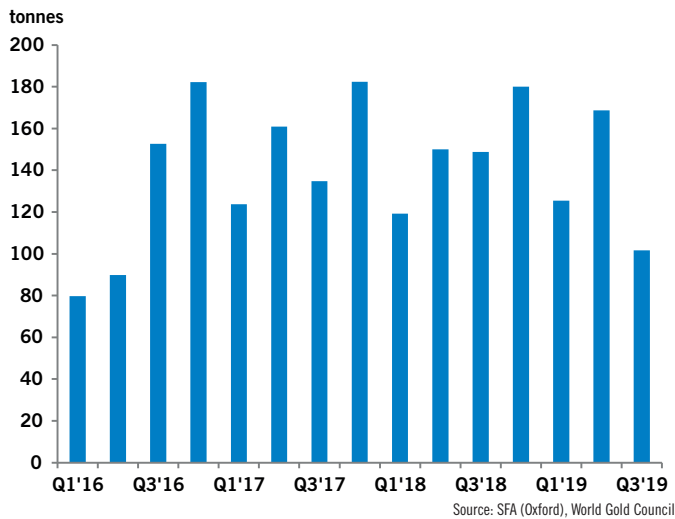
lesser extent iridium, coated electrodes to produce sodium hypochlorite. A new standard of ballast water management was introduced last month by the International Maritime Organization, which will require the majority of ships to improve their treatment systems by 2024.

Rhodium gained \$150/oz last week; the ruthenium and iridium prices remain unchanged.

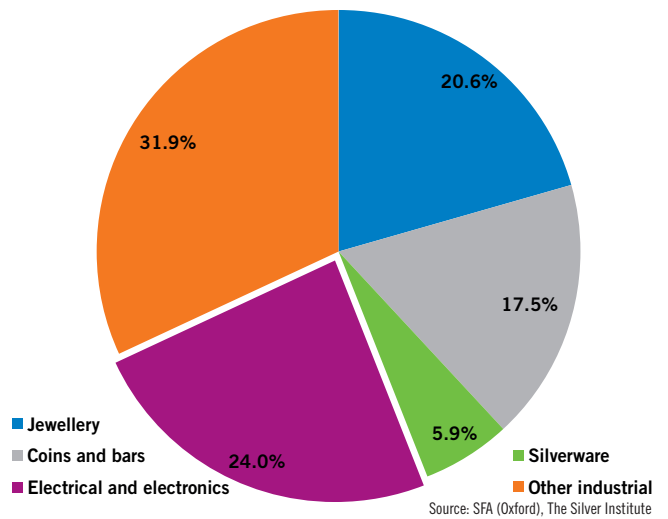


TRENDS AND INVESTMENTS

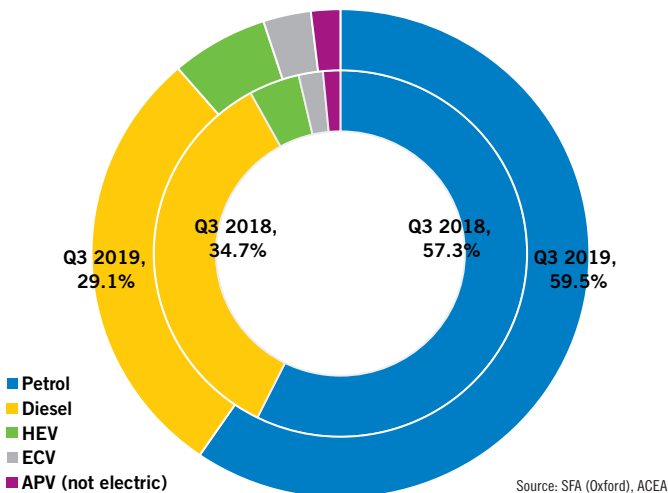
India gold jewellery demand



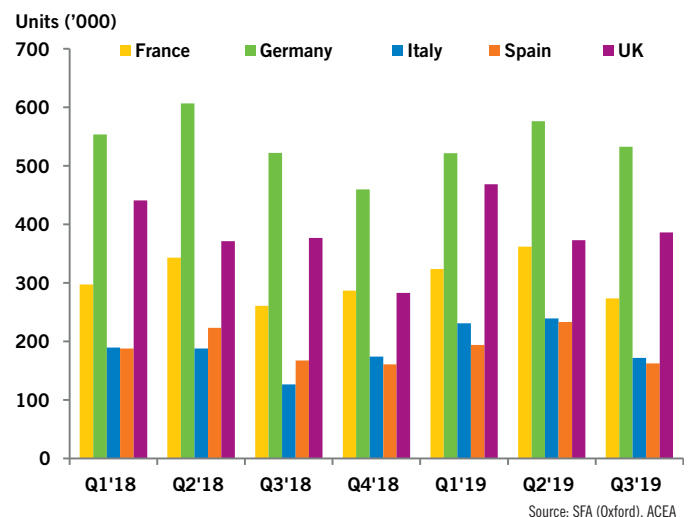
Silver demand by end-use



Market share: Europe



Petrol passenger car registrations



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