

COMMODITY Insights Bulletin

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PLATINUM

November 2015

Platinum (Q2, 2015–Q3, 2015)

Insight: Business preservation remains the focus

The past 6 months saw corporate activity increase in the platinum industry with gold company Sibanye Gold acquiring Aquarius and Amplats' Rustenburg mines valued at US\$294 million and US\$323 million respectively. Baroka Platinum also acquired Atlatza Resources' 51 percent stake in Bokoni Platinum in a transaction valued at US\$149 million.

Expect to see companies in the platinum industry writing down assets to account for the expected slower recovery of the platinum prices and the reduction in supply (Lonmin plans to reduce output by 100koz, RBPlat put Styldrift on the back burner and Impala put its 17 shaft replacement project on hold). At this time, Lonmin was preparing for their AGM where the shareholders will be asked to approve a US\$400 million rights issue, and they are also busy finalizing new loan facilities.

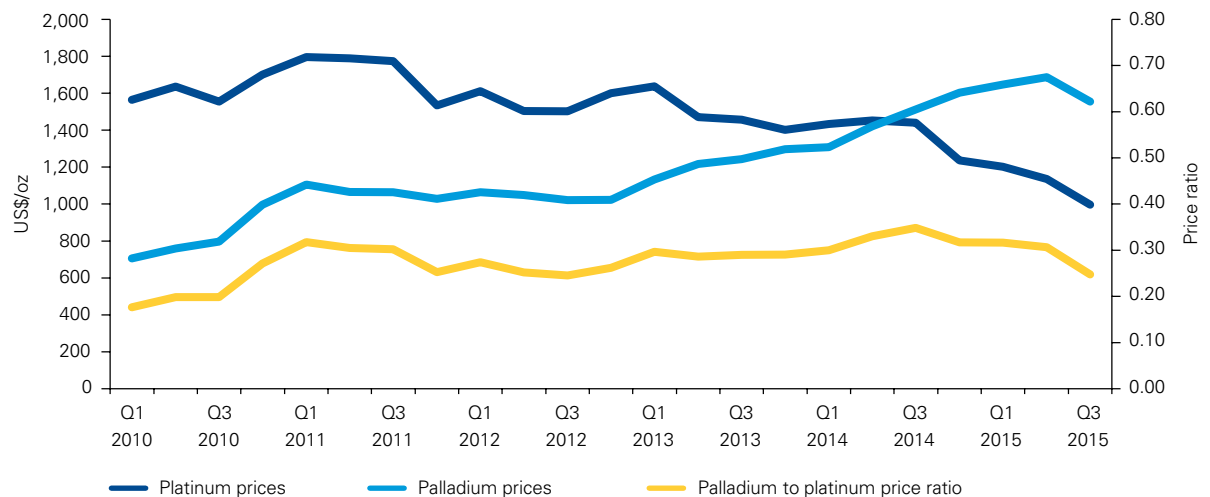
The focus of the South African miners, who hold about 80 percent of the world's platinum reserves

“Expect to see companies in the platinum industry writing down assets to account for the expected slower recovery of the platinum prices and the reduction in supply.”

Alwyn van der Lith
KPMG in South Africa

and produce more than half of the world's platinum supply, currently remains on protection of the business for all stakeholders until the demand increases and prices recover. The strategies are all around efficiencies, cutting uneconomical output, cost containment and cash preservation.

Figure 1: Platinum and palladium quarterly price trends, Q1, 2010–Q3, 2015



Source: Price Charts, Platinum Today, <http://www.platinum.matthey.com/prices/price-charts>, accessed 2 November 2015.

Price outlook¹

Platinum-group metals prices were generally weaker in Q2 and Q3, 2015 due to dollar appreciation, concerns over Chinese growth and resultant weakness in bulk commodities like iron ore and oil.²

Prices for platinum declined by 31 percent in Q3, 2015, as compared with the Q3, 2014 value. The drop in prices was significantly lower compared to gold and silver during the same period, due to the strengthening of the US dollar and continued weakening of the South African rand and the Russian ruble — currencies of major producer nations.

Prices for palladium declined by ~29 percent in Q3, 2015, as compared with the Q3, 2014 value. The drop in palladium prices was driven by investor liquidation in response to weak Chinese vehicles sales. However, Chinese auto sales is expected to remain strong over the medium-term given the low penetration versus many other countries, which makes palladium a structural preference over the medium-term.³

PGM prices went into further uncertainty following the announcement from the US Environmental Protection Agency that Volkswagen had breached the Clean Air Act through the fitting of 'defeat devices' in a number of its diesel vehicles. PGM prices were volatile in the days

following the announcement, noting the threat to the future of diesel vehicles, which saw platinum fall and palladium rally as markets interpreted the news as good for gasoline (palladium bias) and bad for diesel (platinum bias).⁴

The current pricing environment in the PGM mining sector is creating significant financial stress in the industry, which in turn could impact the long-run sustainable production capabilities in South Africa. If metal prices do not increase from current levels in the near-term, the survival of the larger platinum companies will depend on the appetite of debt and equity markets to provide additional funding.⁵

Platinum prices are expected to be heavily influenced by the marginal cost over the next few years, but at current levels, ~50 percent of the industry players are loss-making or close to breaking even. Political pressures to maintain employment and tight balance sheets limit producer ability to curtail production. Furthermore, a weakening rand is bailing many mines out. It is unlikely that there will be any meaningful mine closures, in the near future, which means that supply will adjust very slowly through capital starvation. A moderate price recovery is expected to happen in 2016, as a result of a possible strike for wage negotiations.⁶

Figure 2: Platinum consensus price forecasts and market balance, 2014–18E

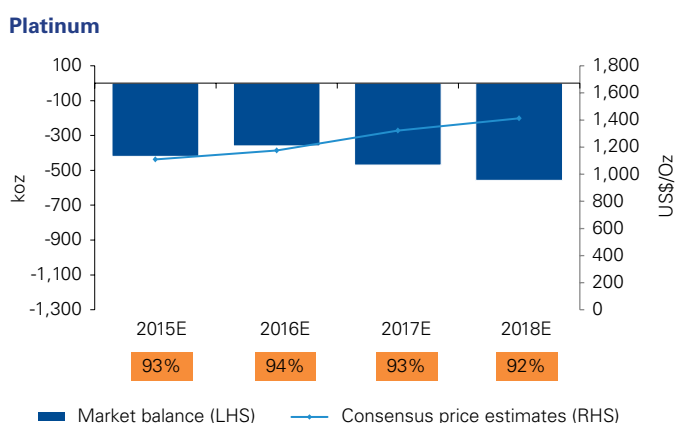
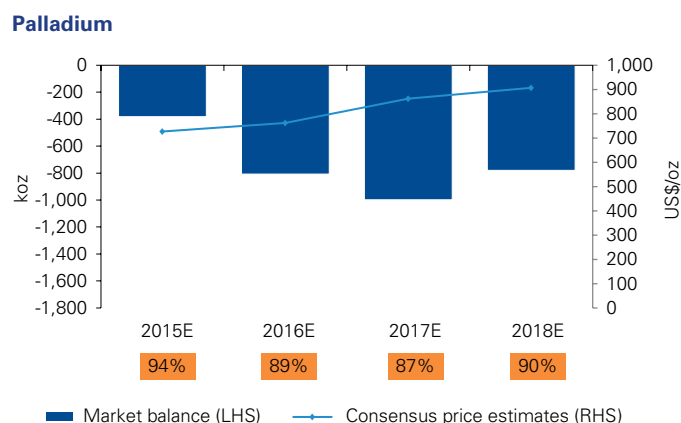


Figure 3: Palladium consensus price forecasts and market balance, 2014–18E



Sources: Price Charts, Platinum Today, <http://www.platinum.matthey.com/prices/price-charts>, accessed 2 November 2015; HSBC Global Research, "SA Platinum Sector", 13 October 2015; RBC Capital Markets, "The Platinum Group Metals Sector", 12 October 2015; UBS, "South African Platinum Sector — Closer to the bottom", 9 October 2015; Morgan Stanley, "SA Platinum Group Metals — Investing through vs. for the cycle", 8 October 2015; JP Morgan, "Platinum Foresight — Platinum miners all change", 16 September 2015; Macquarie, "SA Platinum producers — Industry in distress", 31 July 2015; Deutsche Bank, "SA Precious Metals — 4Q15 commodity update: will platinum choke on diesel", 29 September 2015, via Thomson Research, accessed 27 October 2015.

Orange boxes in the above graphs represent demand fulfillment capability. Demand fulfillment capability is defined as the percentage of global annual demand of platinum/palladium, which can be met from existing global annual supply of platinum/palladium.

¹ Sources: Price Charts, Platinum Today, <http://www.platinum.matthey.com/prices/price-charts>, accessed 2 November 2015; HSBC Global Research, "SA Platinum Sector", 13 October 2015; RBC Capital Markets, "The Platinum Group Metals Sector", 12 October 2015; UBS, "South African Platinum Sector — Closer to the bottom", 9 October 2015; Morgan Stanley, "SA Platinum Group Metals — Investing through vs. for the cycle", 8 October 2015; JP Morgan, "Platinum Foresight — Platinum miners all change", 16 September 2015; Macquarie, "SA Platinum producers — Industry in distress", 31 July 2015; Deutsche Bank, "SA Precious Metals — 4Q15 commodity update: will platinum choke on diesel", 29 September 2015, via Thomson Research, accessed 27 October 2015.

² HSBC Global Research, "SA Platinum Sector", 13 October 2015, accessed 27 October 2015.

³ Morgan Stanley, "SA Platinum Group Metals", 8 October 2015, via Thomson Research, accessed 27 October 2015.

⁴ RBC Capital Markets, "The Platinum Group Metals Sector", 12 October 2015, via Thomson Research, accessed 27 October 2015.

⁵ Macquarie, "SA Platinum producers — Industry in distress", 31 July 2015, accessed 27 October 2015.

⁶ Deutsche Bank, "SA Precious Metals — 4Q15 commodity update: will platinum choke on diesel", 29 September 2015, via Thomson Research, accessed 27 October 2015.

Prices for platinum are expected to increase at a CAGR of 7.2 percent, from US\$1,108/oz in 2015 to US\$1,462/oz in 2019. Those for palladium are expected to increase at a CAGR of 6.5 percent, from US\$727/oz in 2015 to US\$936/oz in 2019. Both of the commodity price growths will be influenced by increasing demand from the European auto industry and Asian jewelry market, particularly China and India.

The market balance (global supply of platinum/palladium less the global demand of platinum/palladium) is expected

to reach 420koz and 381koz for platinum and palladium, respectively (a y-o-y decrease of about 62 percent and 79 percent, respectively), in 2015. The autocatalyst industry accounts for the highest share of palladium demand. With the increase in vehicle sales in the emerging nations (particularly China), it's expected to grow aggressively, supported by the stringent vehicle emission standards in these nations. The driver for price recovery of palladium will be the rising car sales in the US and China, along with increased investor demand as the market tightens further.

Supply and demand⁷

Supply

Figure 4: Primary global supply of platinum, 2015E–18E

Platinum supply

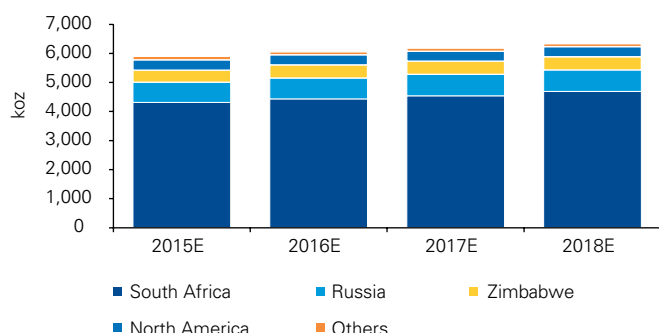
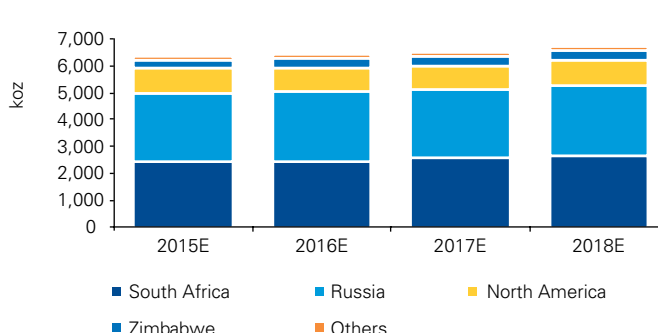


Figure 5: Primary global supply of palladium, 2015E–18E

Palladium supply



Source: HSBC Global Research, "SA Platinum Sector", 13 October 2015, via Thomson Research, accessed 27 October 2015.

— Platinum supply is expected to increase by 15 percent, reaching about 5.9 million ounces (Moz) in 2015 as compared with 2014. South Africa and Zimbabwe dominate the world's primary supply of platinum and are the only countries that host 'primary' platinum mines. Together, the region hosts ~90 percent of the world's known platinum resources. There is no other commodity of substance that is so geographically concentrated.⁸

— Under weak platinum prices, some miners have announced supply cuts. Lonmin plans to reduce platinum output by ~100koz over the next 2 years. Similarly, RBPlat has put its 220koz Styldrift project — which was scheduled to ramp from 2016, with full production in 2019 — on the back burner. Impala has recently put its 17 shaft replacement project — which was scheduled to start producing in 2021, with full production from 2024 — on hold.^{9,10}

Figure 6: Primary platinum supply breakup, 2014

Platinum supply distribution in 2014

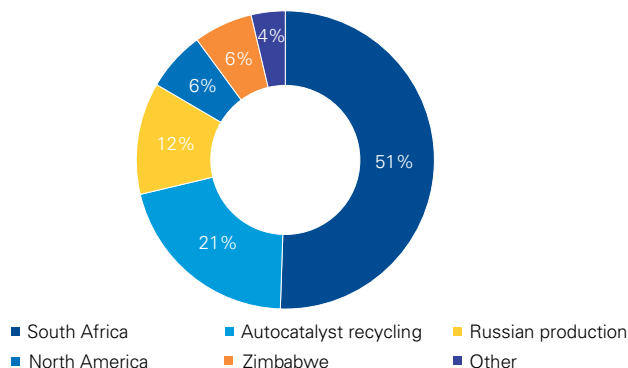
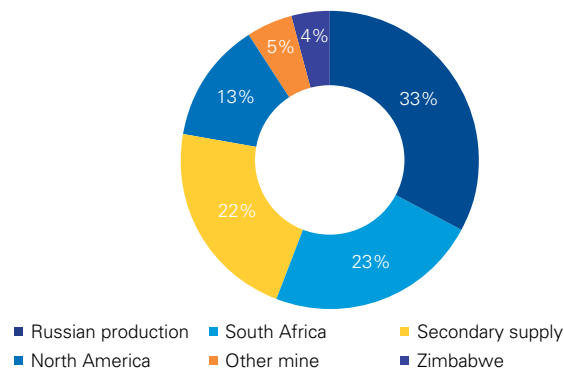


Figure 7: Primary palladium supply breakup, 2014

Palladium supply distribution in 2014



Source: Deutsche Bank Markets Research — Platinum group metals, Platinum: cash constraints will ultimately result in supply 'discipline', 31 March 2015, via Thomson Research/Investext, accessed 9 April 2015.

⁷ JP Morgan Cazenove — Platinum Year 2015 — Platinum price and producers under pressure — Mechanized miners make hay, 6 February 2015; Deutsche Bank Markets Research — Platinum group metals, Platinum: cash constraints will ultimately result in supply 'discipline', 31 March 2015, via Thomson Research, accessed 9 April 2015.

⁸ JP Morgan, "Platinum Foresight — Platinum miners all change," 16 September 2015, via Thomson Research, accessed 27 October 2015.

⁹ Mail & Guardian, "Lonmin to cut jobs, close shafts amid platinum slump," <http://mg.co.za/article/2015-07-25-more-pain-as-lonmin-to-cut-6000-jobs-close-shafts-amid-platinum-slump>, 25 July 2015, accessed 2 November 2015.

¹⁰ BDlive, "Impala Platinum proposes equity raise of R4bn," <http://www.bdlive.co.za/business/mining/2015/09/03/impala-platinum-proposes-equity-raise-of-r4bn>, 3 September 2015, accessed 2 November 2015.

- Autocatalyst recycling has become a major source of supply over the past decade and currently constitutes 18 percent of global supply, equivalent to a third of South Africa's mine production. Autocatalyst recycling is likely to witness growth of 7 percent over 2015–17.
- South Africa's platinum production growth is likely to remain weak for the next few years, due to high production costs, depleting reserves and ongoing labor unrest, which continues to push for higher wages in the near future.
 - Platinum mining cost difference between South Africa and other regions indicate the unsustainable levels for this region. Stillwater Mining — North America-based PGM producer — generated cash costs less than one-third of Amplats' (SA-based PGM producer) cash costs.
 - In the Bushveld complex of South Africa, 20–40 tons of ore have to be processed to gain 1 ounce of platinum. Historically, the amount required was just 10 tons for 1 ounce of platinum, which proves PGM ore grades have gradually declined in the complex.
- Laying off workers has exposed mining companies to strict government resistance in South Africa; for instance, the risk of losing their mining license in the country. This has resulted in mining companies expanding production in countries with a more-flexible labor market and lower wage costs.
- Zimbabwe has three operational mines for platinum and has the second-largest reserves for platinum worldwide. With the government's decision to establish a platinum refinery by 2016, platinum exports from the country are expected to be on the rise and will provide additional jobs for the sector as well.
- Russia is considered the largest palladium supplier globally. With the gradual depletion of the Russian state stockpiles, the market is expected to be balanced over the short-term. Further, the Russian Central Bank has decided to sell some of the palladium stockpiles to a pool of investors, led by Norilsk Nickel — the world's largest palladium producer. However, according to Deutsche Bank, this holding has been accounted for in the above-ground stocks and will not have a significant impact on the global supply-demand environment.¹¹

Demand

Figure 8: Platinum global demand, 2015E–18E

Platinum demand

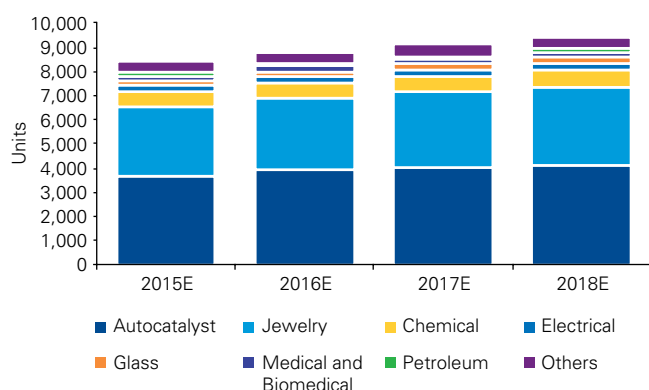
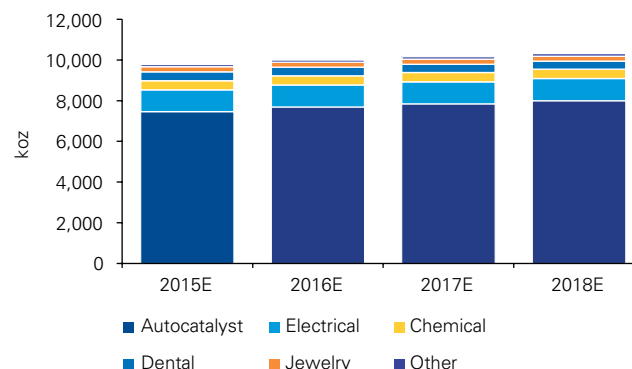


Figure 9: Palladium global demand, 2015E–18E

Palladium demand



Source: HSBC Global Research, "SA Platinum Sector", 13 October 2015, via Thomson Research, accessed 27 October 2015.

- Platinum demand is expected to increase by 2.7 percent, reaching about 8.3Moz in 2015 as compared with 2014, driven by the growth in the automotive and industrial segments. China and Europe are considered to be the dominant markets for platinum, accounting for 31 percent and 24 percent of the global demand, respectively. Continued recovery in the European auto sales, along with the implementation of Euro VI emission legislation, is expected to drive demand for platinum. A majority of

the diesel engine-powered cars in Europe are loaded with platinum-based autocatalysts, while gasoline-powered vehicles employ palladium-based devices. However, with the gradual substitution of the expensive platinum with the comparatively cheaper palladium, the latter has gained share in the diesel pollution-control devices. Presently, the ratio stands at about 0.7Pt:0.3Pd, which could witness change over the next few years.^{12,13}

¹¹ JP Morgan, "Platinum Foresight — Platinum miners all change," 16 September 2015, accessed 27 October 2015.

¹² HSBC Global Research, "SA Platinum Sector", 13 October 2015, via Thomson Research, accessed 27 October 2015.

¹³ Morgan Stanley, "SA Platinum Group Metals", 8 October 2015, via Thomson Research, accessed 27 October 2015.

Figure 10: Demand distribution for platinum, 2014

Platinum demand distribution in 2014

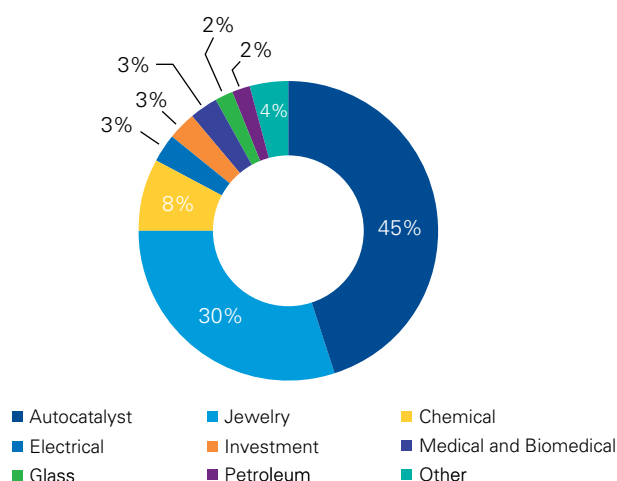
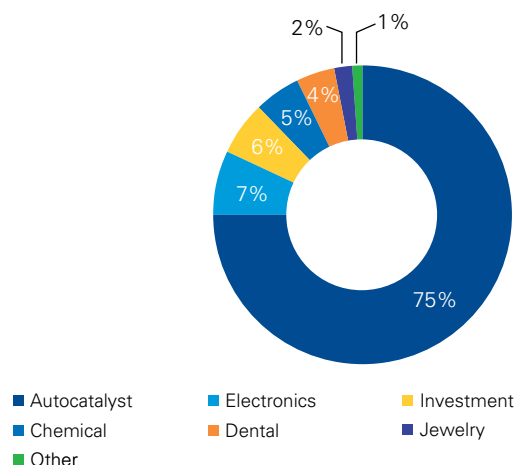


Figure 11: Demand distribution for palladium, 2014

Palladium demand distribution in 2014



— One of the major challenges that the platinum market faces is the increase in recycling volumes. Autocatalyst ceramic recycling volumes are expected to increase globally by 25 percent, from 48 tons to 60 tons, by 2018. This forecasted growth is expected to decline the net autocatalyst volumes by 2–3 percent per annum, as the recycling will eventually exceed the demand growth.

— The US accounts for 25 percent of the global palladium demand, largely driven by the automotive segment due to its use in autocatalysts. The US and China are considered to be the primary gasoline markets, with car sales expected to increase by 2.4 percent and 6 percent, respectively, in 2016.

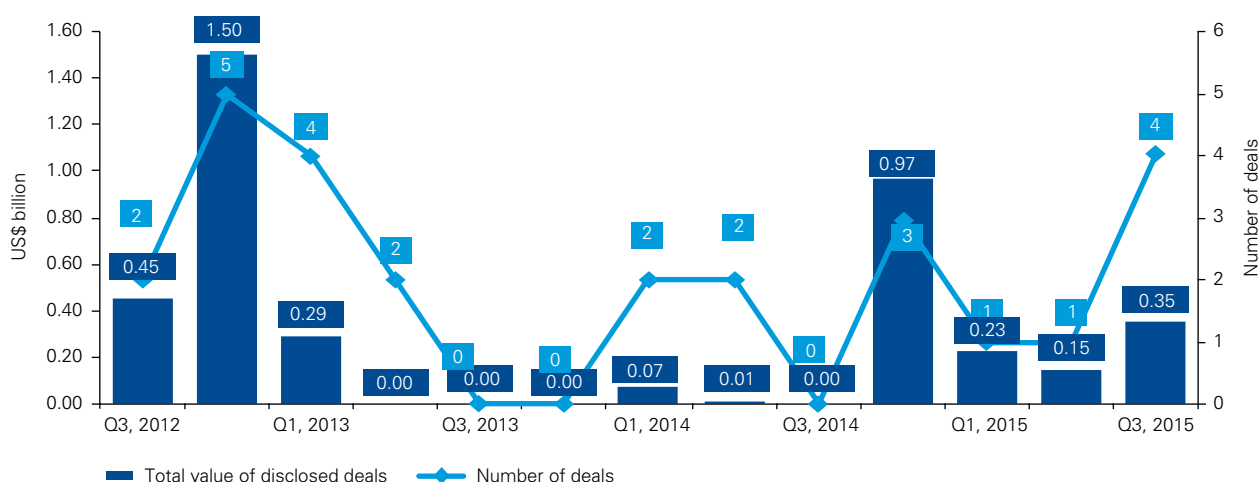
Key developments

Ownership changes¹⁴

The platinum industry witnessed one deal in Q2, 2015 and four in Q3, 2015. The only deal in Q2, 2015 was valued at US\$149 million, while the 4 deals in Q3, 2015 were valued at

US\$354 million. None of the deals were completed over the reported period.

Figure 12: M&A deal number and valuations, Q3, 2012–Q3, 2015



¹⁴ Deals: Search, MergerMarket and Thomson, accessed 12 October 2015; KPMG analysis.

Table 1: M&A deal activity, Q2, 2015 and Q3, 2015

Date announced	Target	Target nation	Acquirer	Acquirer nation	Status	Value of transaction (US\$ million)	Stake (%)
11 May 15	Bokoni Platinum Mines Pty Ltd	South Africa	Baroka Platinum	South Africa	Announced	149	51
21 Jul 15	Nkwe Platinum Ltd	Australia	Jin Jiang Mining Ltd	China	Announced	23	60
5 Aug 15	Platina Resources Ltd-Munni	Australia	Karratha Metals Ltd	Australia	Announced	N/A	70
9 Sep 15	Rustenburg Platinum Mines ¹⁵	South Africa	Sibanye Gold Limited ¹⁶	South Africa	Announced	323	N/A
16 Sep 15	Wallbridge Mining Company Limited (Four Parkin properties)	Canada	Lonmin	Canada	Announced	8.3	50

Source: Deals: Search, MergerMarket and Thomson, accessed 12 October 2015; KPMG analysis.

Regulatory updates

Table 2: List of recent regulations in the platinum and palladium mining industry

Date announced	Target	Target nation
Switzerland ¹⁷	Competition regulator opens inquiry on illicit agreements in precious metals trading.	<ul style="list-style-type: none"> — In September 2015, Switzerland's competition regulator, La Commission de la concurrence, opened an inquiry into several global banks to examine whether they made illicit agreements in the field of precious metals trading. The Swiss authority noted that it classes gold, silver, platinum and palladium as precious metals. — The institutions targeted are UBS Group, Julius Bär Gruppe, Deutsche Bank, HSBC Holdings, Barclays, Morgan Stanley and Mitsui & Co Ltd.
Zimbabwe ¹⁸	Government plans to remove a 15 percent levy on platinum miners, due to increased unrest among mining companies.	<ul style="list-style-type: none"> — The Zimbabwe government has removed a 15 percent levy on platinum miners, to speedily set up a refinery in the country. — However, executives from platinum mining companies, including Impala, have approached the government to lift the levy and restructure the existing regulatory framework.

Source: Deals: Search, MergerMarket and Thomson, accessed 12 October 2015; KPMG analysis.

¹⁵ Includes Rustenburg mining and concentrating operations.

¹⁶ A consortium of broad-based black economic empowerment stakeholders.

¹⁷ "Swiss competition authority opens inquiry into banks over precious metals trading," 29 September 2015, via Factiva, accessed October 2015.

¹⁸ Business Report, "Zim miners facing uncertainty," 21 May 2015, accessed November 2015.

Cross section of global platinum projects¹⁹

Table 3: Cross section of global platinum Greenfield projects

Project	Country/Region	Operators	Potential start year	Platinum production (koz per annum)
Garatau PGE Deposit	South Africa	NKWE Platinum	First production 2015 (steady state 2017)	330
Twickenham Platinum Mine	South Africa	Anglo American Platinum	Full production by 2020	3Mtpa* Incremental production of 180 koz per annum
Waterberg discovery	South Africa	Platinum Group Metals Ltd.	2020	655
Western Bushveld Project No. 1	South Africa	Platinum Group Metals Ltd.	Q4 2015	275 4E**

Source: Company data accessed October 2015.

Table 4: Cross section of global platinum Brownfield projects

Project	Country/Region	Operators	Potential start year	Platinum production (koz per annum)
BRPM (Phase 3)	South Africa	Anglo American Platinum	2017	70
Ngezi mine (Phase 2)	Zimbabwe	Zimplats	2015	270 ²⁰
Styldrift 1 shaft	South Africa	Anglo American Platinum	Q2, 2016	220
Styldrift Merensky (Phase 1)	South Africa	Anglo American Platinum	Q2, 2017 Full production will start in Q2, 2018	245

Source: Company data accessed October 2015.

*Ore processing capacity.

**Combined content of the four most valuable precious metals: platinum, palladium, rhodium and gold.

#4E Steady state production of PGM per year.

¹⁹ The list is not exhaustive and contains only a limited number of projects.

²⁰ "Zimplats in US \$74 Million Loss", 1 September 2015, via Factiva, accessed October 2015.



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