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DIAMOND ANALYTICS

STATE OF THE DIAMOND MARKET

INDEPENDENT MONTHLY DATA AND ANALYSIS

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What you should be watching:

- ◆ Q4 2018 retail jewelry sales results were mixed-to-down with a trend of softer demand in the America's, Europe and Hong Kong but relative strength in Mainland China and Japan; fine jewelry seemed to outperform fashion jewelry, and bridal diamond jewelry seemed to outperform anniversary jewelry.
- ◆ Tiffany sales and same-store-sales were down 1% and 2% respectively, in the November-December holiday period, however the company provided positive guidance for 2019 quelling overly pessimistic fears of a global slowdown.
- ◆ In the 9-week period ending January 5, Signet, the largest jeweler in the U.S., saw same-store-sales fall 1.3% year-over-year; the 2018 holiday season was the first since the company outsourced its customer credit business and it is likely that less competitive credit terms played a part in the weak comparable performance.
- ◆ U.S. department store Macy's specifically noted "strong performance" in fine jewelry but "underperformance" in fashion jewelry in November-December holiday period.
- ◆ In calendar Q4, Cartier and Van Cleef & Arpels parent, Richemont, saw sales in the America's increase 9% year-over-year and sales in Asia ex-Japan increase 10%, sales in Europe and the Middle East were down; the company noted "double digit sales growth in Mainland China," but a sales growth decline in Hong Kong "primarily due to the strength of the Hong Kong dollar versus the renminbi that resulted in lower tourist spending."
- ◆ Global luxury conglomerate and parent of jewelry brands Bvlgari and Chaumet, LVMH Moët Hennessy Louis Vuitton, saw positive year-over-year revenue growth of 11% company-wide in calendar Q4 and positive growth of 7% in the "Watches & Jewelry" segment; management noted that "the (fourth) quarter continued the trend that had been underway since the beginning of the year."
- ◆ Greater China jeweler Chow Tai Fook saw same-store-sales fall in calendar Q4, the first decline in over two years, however, the company opened a record number of new stores in the quarter.

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Short-term trends:

- ◆ Global consumer diamond demand is forecasted to grow at a nominal 3.5% in 2019, a moderate decline from 2018 estimates of 4.0%, as corporate earnings growth in the U.S. is expected to abate and trade tensions as well as other geopolitical uncertainties weight on economic growth expectations.
- ◆ Global natural diamond production volume is estimated to decrease by 2.8% to 145 million carats in 2019, primarily driven by a forecasted production drop at De Beers as the company's Victor and Voorspoed mines reach end of life and as Venetia open-pit production declines.
- ◆ De Beers and ALROSA are both estimated to be producing at or near full capacity; further, both company's excess inventory levels are estimated at approximately 5 million carats through the end of 2018 with inventory skewed towards smaller, lower-quality goods. *(see more detail under "Rough inventory" section)*
- ◆ The dislocation in price between smaller rough diamonds and other categories is the widest it has been in at least 5 years, due in part to new production of smaller goods over the last 2 years, challenges facing Indian manufactures specializing in the smaller size-categories and the implications of lab-created diamonds on small natural diamonds.
- ◆ De Beers production guidance out to 2021 shows incremental production increases of 6% in 2020 and 2021 following an anticipated production decrease of 10% in 2019; in December 2018, De Beers said the company is on pace to bring Venetia underground production online a year earlier than originally anticipated, but also implied that production from a new Debmarine mining vessel would be a year behind initial estimates.
- ◆ The construction of ALROSA's Verkhne-Munskoye mine was completed in late-2018 with the first full-year of commercial production expected in 2019; the start of mining at Verkhne-Munskoye leaves only one new large-scale mine in advanced-stage development globally.
- ◆ Production at ALROSA's largest mine, Jubilee, is set to decrease from an estimated 10 million carats in 2017 to 5 million carats by 2020 as the mine depletes.
- ◆ ALROSA has implied that the Mir mine would eventually be restarted but that rehabilitation work would probably not commence until 2020 at the earliest; production at Mir has been suspended since a fatal accident in August 2017, production capacity is approximately 3 million carats annually.
- ◆ In July 2018, Lucara Diamond created a Vice President of Corporate Development and Strategy position to focus on investigating strategic growth opportunities "including mergers and acquisitions," fueling industry consolidation expectation.

Long-term trends:

- ◆ Rough diamond prices have been in a downtrend since mid-2011 in both nominal and real terms, but the trend appears to be shifting; despite another down year in 2018, the magnitude of rough diamond price declines has been abating.
- ◆ The major miners continue to stand ready to curtail supply to the market if deemed necessary to restore supply/demand balance.
- ◆ ALROSA has been net reducing excess inventory levels since 2014; De Beers' excess inventories are off of 2015 highs, but the company increased inventory in 2018 following a slowing of demand for smaller goods. *(see more detail under "Rough Inventory" section)*
- ◆ Legacy mines Argyle, Victor and Voorspoed, as well as De Beers' alluvial mines in Namibia and ALROSA's Udachniy placers, are approaching end-of-life and are all expected to be closed within the next 3 years.
- ◆ De Beers is expected to move forward with Jwaneng Cut-9 and Orapa Cut-3 expansion projects, multi-billion dollar expenditures that will extend the life of the company's two most valuable assets through the 2030's.
- ◆ Debswana is reportedly considering taking the Letlhakane mine underground; Letlhakane is currently a tailings operation (the open-pit is depleted) producing approximately 400,000 carats a year.
- ◆ In June 2018, ALROSA suspended deep-mine construction at the International mine due to safety concerns, resulting in an estimated production decrease of 500,000 to 800,000 carats annually at the mine from 2019 to 2022.
- ◆ Dominion Diamond Mines suspended development of its Ekati-mine Jay-extension project in May 2018 pending economic reassessment; Jay was planned to primarily extend Ekati production from 2024-2034.
- ◆ The Luaxe project in Angola has the potential to be a top-five largest-producing-mine in the world, it is the only new mine in development globally with an estimated annual production capacity in excess of 1 million carats; first commercial production is not expected before 2022.
- ◆ ZCDC, Zimbabwe's government-run diamond unit, has plans to ramp up production to 10 million carats annually by 2022 at the recently nationalized Marange operations as a foray is made into conglomerate mining supported by a \$400 million investment program over the next five years.

Lab-created diamond trends:

- ◆ Lab-created diamond quality-advancement and supply growth poses a legitimate competitive threat to the natural diamond industry, although De Beers entered the space in June 2018 attempting to force product segmentation between lab-created and natural diamonds used in jewelry through an array of pricing and marketing strategies.
- ◆ Current gem-quality lab-diamond production of larger stone sizes is estimated at about 2 million carats of rough annually, however this figure is estimated to grow at over 20% annually through 2023. (*more information can be found [here](#)*)
- ◆ Increases in the supply of lab-created diamonds for use in jewelry is being driven by scaling of production by current producers, the entrance of new producers and improvements in production technology yields.
- ◆ Chinese synthetic producers that historically have supplied billions of carats for abrasive industrial application are currently upgrading equipment capabilities allowing the production of larger, higher-quality synthetic diamond, fit for use as jewelry, however, this tends to be in rough sizes that yield 1-carat polished diamonds and smaller.
- ◆ In December 2018, Russia-based New Diamond Technology, grew the largest known lab-created diamond, a 103.5-carat brownish-yellow type Ib non-gem stone using a cubic HPHT press over 14 days.
- ◆ As of early-2019 there are approximately 1,500 jeweler stores in the U.S. carrying lab-created diamond jewelry, for context, there are almost 20,000 jeweler stores in the states; the U.S. consumer market currently represents almost all global demand for lab-created diamond jewelry.
- ◆ In July 2018, the U.S. Federal Trade Commission removed the word “synthetic” from its approved list of terms marketers could use when selling lab-created diamonds and also removed the word “natural” from its definition of diamond.
- ◆ De Beers is investing almost \$100 million over 4 years in a new Element Six lab-diamond production facility in the U.S. which will have production capacity of up to 500,000 carats of rough annually to supply its Lightbox lab-diamond jewelry subsidiary.
- ◆ In a blog post in December 2018, U.S.-based lab-diamond producer Diamond Foundry said the company would be raising prices by an average of 15% in 2019 stating “we see demand (for lab-created diamonds) increasingly outpacing supply,” although the claims were not quantified or substantiated; further, the company said it would be increasing production from 100,000 carats of rough in 2018 to 1 million carats annually by the end of 2019.

Commentary:

After a lukewarm 2018 Christmas season for the diamond industry, manufacturer and retailer restocking in early-2019 has been on par. Rough diamond prices as measured by the [Zimnisky Global Rough Diamond Price Index](#) are up 0.5% year-to-date through the first week of February. However, demand for smaller sizes of rough continues to be seen as weak, with the category of “+7 to +11 DTC size,” or 0.13-to-0.42 carat, down approximately 8% so far this year, following a decline of as much as 15% in 2018.

While this category represents up to half of global diamond producer output by volume, in the value terms the figure is much less, estimated at 20% or less. For instance, large-diamond producer Lucara recently noted in an investor presentation that about 45% of the company’s production consists of goods below half a carat but specified that “if the market were to drop in value on these goods by 20% the impact to Lucara would only be a 1-2% decrease on our average price (per carat).”

On the other hand, the category is much more important to other producers, specifically those with a higher volume, lower value-per-carat production profile. In this case the smaller categories provide tremendous revenue leverage. For example, in a recent corporate presentation Firestone Diamonds estimates that just a \$10 increase in the company’s average price per carat would boost the company’s cash position from an estimated \$29 million to \$42 million in the fiscal year ending mid-2020. Essentially a 13% increase in rough price would translate into a 45% increase in net cash. Further, a 27% increase in average price per carat would take the pro forma cash position up by 93%.

The significant dislocation in the price of

smaller rough relative to medium and larger sizes first became apparent in mid-2017, which coincided with production from three new mines making its way to market for the first time. The supply from Gahcho Kué, Renard and Firestone’s Liphobong mine was geared more towards smaller size rough than anticipated, in part due to diamond breakage during initial recoveries. Further, production ramp-up at the Misery Main pipe at the Ekati mine and increased alluvial output by Russia’s ALROSA following the unanticipated closure of one of its underground kimberlite mines, further overloaded the supply-chain with smaller rough.

From mid-2017 to the end of 2018, “+7 to +11 DTC size” rough was down over 20% which compares to “3 to 6 grainers” or 0.75-to-1.25 carat, and 3-to-4 carat rough, which was up 11% and up 10%, respectively, over the same time period.

In addition to the onslaught of new mine production, news of the Nirav Modi and Mehul Choksi fraud uncovered in early-2018 further pressured demand for smaller rough as financing to Indian manufacturers was subsequently restricted, most notably impacting small-to-medium sized business which tend to specialize in buying and cutting lower-valued rough.

Even further complicating matters, 2018 saw a significant increase in Chinese HPHT lab-created gem-diamond production, which tends to be on the smaller side. Given that the price of natural and lab-created stones tends to be commensurate in the smaller sizes, in some cases the industry has neglected to screen natural for lab-created given the relative cost. Thus, there is reason to believe that there are millions of carats of lab-created smalls making their way through the supply-chain as natural.

Company update: (Note: P-Producer, E-Explorer/developer, R-Retailer)

P - Rio Tinto (LSE: RIO): In mid-January, Rio provided 2019 production guidance of 15-to-17 million carats. Using the guidance range average, 2019 production would be down 13% year-over-year and down 26% relative to 2017. The decline is a result of natural depletion at both of the company's mines, however, most notably Argyle, as the mine enters its penultimate year of production. Given the current reserve base, the Australian mine is estimated to produce some 12 million carats this year and 10 million in 2020 before the final reclamation process commences. Argyle produced over 40 million carats annually in the 1990's, representing almost a third of global diamond output by volume. The mine, notorious for producing smaller, brown diamonds, offset by world-class pink, violet and red diamonds, will leave a noticeable gap in supply of smaller goods, which will alleviate current oversupply in the category. Looking forward, Rio continues to progress with an earn-in agreement it struck with **Star Diamond (TSX: DIAM)**, previously Shore Gold, in June 2017 on the company's Star-Orion South project in Saskatchewan, Canada. The earn-in agreement is based on multi-stage options, with the first requirement to spend C\$18.5 million or conduct a 10-hole bulk sample within 3 years; completion elects three subsequent options based on milestones that could earn Rio up to a 60% stake in the project over the following 4-5 years. On January 24th, Star announced that the pilot hole drilling program preceding the bulk sample has begun. Star-Orion South is a massive low-grade project with a 66 million-carat resource and an estimated mine life of at least 38 years. The rather high-quality diamonds are estimated to be worth an average of \$168 per carat.

P - Lucara Diamond Corp (TSX: LUC): Single-asset producer Lucara said it estimates 2019 Karowe production will be approximately 315,000 carats, which would be a decline of 8% year-over-year. While production volume is expected to be down, the company's average selling price per carat is forecasted to be up 9% year-over-year. The expected production volume and average diamond price figures both reflect an expected decrease in small diamond recoveries relative to 2018, due to mining of lower-grade ore in the first half of the year. Along these lines, the company specified that "the significant push back to access higher-grade South Lobe ore (will) substantially (be) complete in the first half of 2019." On another note, the company completed its first trail sale using its new innovative à la carte selling platform, Clara, in December. Seven manufacturers participated as buyers and selling prices achieved were an estimated 8% over what would have been expected if the diamonds were sold using a traditional tender method. For context, \$661,000 was generated from the trail sale, representing only ~0.4% of company's total revenue in 2018. A second trail sale took place in late-January, results are pending. Lastly, in late-January Lucara provided an update on the ongoing Karowe underground feasibility study which is expected to be completed in the second half of this year. Going underground would extend the Karowe mine life at least an additional decade after the open pit exhausts in 2026. Studies so far have shown that a significant amount of the ore accessed with underground mining would be "Eastern magmatic/pyroclastic kimberlite," notably the ore unit that hosted the record-breaking "Lesedi" and "Constellation" diamonds recovered by the company in 2015.

Karowe mine in Botswana. A second valuation was conducted after the company deemed that the original result was “overly optimistic.” Relative to the first study, the estimated grade was adjusted down to 0.038 carats per tonne from 0.080-to-0.100 and the average estimated diamond value was adjusted down to \$177 per carat from \$386-to-\$710. Going forward, the company mentioned that a minimum 500-carat bulk sample is being considered “either by extending the existing shaft and tunnels or using 24-inch (large-diameter-drill) work either as cluster holes or individual holes on a grid system.” Further, Tsodilo added that it has “entered into confidentiality agreements with several firms and entities which have indicated an interest in entering into a transaction via a purchase of an interest in BK16; a joint venture; or a marketing agreement for BK16 diamonds.” Of note, Lucara already owns approximately 10% of Tsodilo after participating in a December 2016 financing, at which time Lucara also earned a right of first refusal to buy BK16. Of note, on January 8, Lucara announced a 2019 exploration budget of \$3 million.

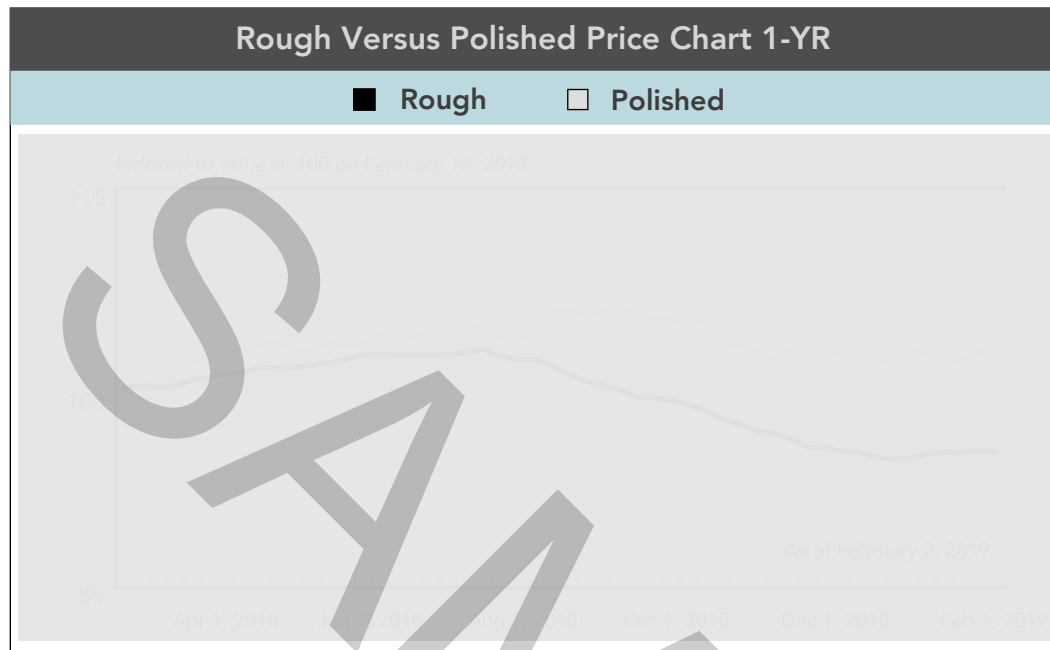
R - Tiffany & Co. (NYSE: TIF): On January 18, Tiffany said that sales were down 1% and same-store-sales were down 2% in the November and December holiday period. Weakness was primarily attributed to lower tourist spending by Chinese customers globally and a weaker domestic consumer environment in America and Europe. However, “double-digit growth” was noted in Mainland China and Japan was considered “solid” due to strong domestic spending. The company also provided 2019 guidance of “low-single-digit percentage” sales increases on a constant

foreign-exchange basis. However, it was specified that H1 2019 is expected to be weaker than the back-half of the year due to “external pressures, difficult year-over-year sales comparisons and annualized internal spending.” The stock rallied almost 6% on the news, arguably driven by the implication that the Chinese consumer market is not as weak as thought.

R - LVMH (Paris: MC): On January 29, LVMH Moët Hennessy Louis Vuitton, global luxury conglomerate and parent of Italian and French jewelers Bvlgari and Chaumet, respectively, said the company saw revenue growth of 10% in calendar 2018 on a constant-FX basis, setting record revenue for the company of €46.8 billion (\$53.6 billion). The company noted that it did not see a slowdown in the second half of the year as some of its competitors did. Regarding the company’s “Watches and Jewelry” group specifically, full-year revenue was +12% with management noting “somewhat surprising and remarkable success of Bvlgari” on an analyst call the same day. Looking forward, an executive added “2019 has gotten off to a good start, I won’t give you the specific figures for January but January is also looking very good.” Of note, in March 2017, De Beers bought back a 50% stake in De Beers Diamond Jewellers from the company after a 16-year partnership.

R - Signet Jewelers (NYSE: SIG): On January 17, Signet, the largest jewelry retailer in the U.S. and parent of banners, Kay, Zales, Jared and James Allen, provided holiday results that showed company-wide same-store-sales down 1.3% in the 9 weeks ended January 5. While it was notably the company’s first holiday season since outsourcing the customer credit

Natural diamond prices:



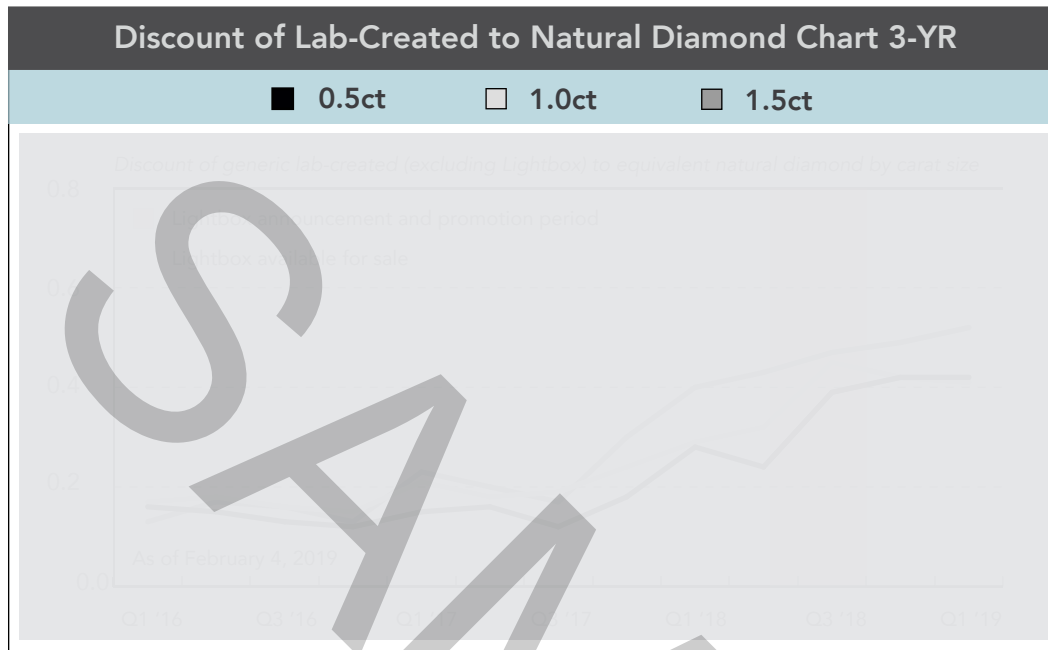
Rough Versus Polished Price Change in Percent Comparison

	1 Month	3 Month	6 Month	52 Week	YTD '19
Rough	0.18%	-1.48%	-6.54%	-4.98%	-0.45%
Polished	-0.47%	-0.13%	-3.58%	2.01%	-0.83%

Figures represent percent change in price for periods as of January 5, 2019

Note: Rough diamond price proxy is the Zimmisky Global Rough Diamond Price Index. More information can be found at www.roughdiamondindex.com. Polished diamond price is based on data gathered via sampling of online retailers, specifically round, 0.3-1.5 carat, near-colorless, VS-clarity, VG-cut diamonds.

Lab-created polished diamond prices:



Sample Prices of Lab-Created Versus Natural Diamonds

	Q1 2019	Q1 2018	Q1 2017	1YR	2YR
0.5-carat					
Lab-created	\$850	\$1,090	\$1,315	52%	188%
Natural	\$1,470	\$1,500	\$1,540	-52%	-188%
1.0-carat					
Lab-created	\$3,675	\$4,350	\$4,850	40%	97%
Natural	\$6,250	\$6,150	\$6,125	-40%	-97%
1.5-carat					
Lab-created	\$6,100	\$7,275	\$9,500	31%	132%
Natural	\$12,825	\$12,125	\$12,275	-31%	-132%

**Actual price of diamonds shown above as of January 5, 2019*

Note: All diamonds sampled are round in shape, VS in clarity, F-H in color, VG-ideal cut, with no-to-low fluorescence. Diamond prices based on average survey of prices by category sampled from prominent online diamond retailers excluding Lightbox.

Rough sales:

Rough Diamond Sales by Industry Leaders						
	De Beers			ALROSA		
	In US\$M	YoY Chg	2YoY Chg	In US\$M	YoY Chg	2YoY Chg
2014	5,390	N/A	N/A	4,909	N/A	N/A
2015	3,468	-46%	N/A	3,437	-30%	N/A
2016	5,557	61%	-13%	4,381	26%	-11%
2017	5,300	5%	53%	4,259	-3%	24%
2018	5,379	2%	-4%	4,508	6%	3%
Jan	505	-25%	-31%	TBD	TBD	TBD
Feb	-	No Sale	-	-	-	-
Mar	-	-	-	-	-	-
Apr	-	-	-	-	-	-
May	-	-	-	-	-	-
Jun	-	-	-	-	-	-
Jul	-	-	-	-	-	-
Aug	-	-	-	-	-	-
Sep	-	-	-	-	-	-
Oct	-	No Sale	-	-	-	-
Nov	-	-	-	-	-	-
Dec	-	-	-	-	-	-
2019	505	-25%	-31%	TBD	TBD	TBD

Note: De Beers figures on a consolidated basis, i.e. sales net to company. ALROSA figures on a 100% basis excluding Catoca JV stake; ALROSA sales also include polished diamonds, however polished sales by the company represent <3% of total sales.

Rough inventory:

5-Year Inventory Analysis of Industry Leaders				
De Beers				
	Production	Sales	Inventory Change	Est. Inventory
2013	31.2	29.8	1.4	14.8
2014	32.6	34.4	-1.8	13.0
2015	28.7	20.6	8.1	21.1
2016	27.3	32.0	-4.7	16.4
2017	33.5	35.1	-1.6	14.8
2018 ¹	35.3	33.7	1.6	16.4
Estimated normal operating inventory: 11.9				
Estimated current excess inventory: 4.5				
ALROSA				
	Production	Sales	Inventory Change	Est. Inventory
2013	36.9	39.0	-2.1	17.5
2014	36.2	39.6	-3.4	14.1
2015	38.3	30.0	8.3	22.4
2016	37.4	40.0	-2.6	19.8
2017	39.6	41.2	-1.6	18.2
2018 ¹	36.7	38.1	-1.4	16.5
Estimated normal operating inventory: 12.1				
Estimated current excess inventory: 4.8				

Note: All figures in millions of carats. A negative inventory change figure indicates an inventory draw; a positive figure indicates an inventory build. Estimated inventory figures based on gross inventory at end of period. Estimated excess inventory figures based on "net" inventory at end of most recent period, i.e. estimated inventory minus estimated normal operating inventory. De Beers figures on a 100% basis, i.e. non-consolidated, except for Gahcho Kué, where De Beers' production and sales figures represent 51% of gross mine production. ALROSA figures on a 100% basis, excluding Catoca JV stake.

Supply/demand forecast: (Please read explanatory notes on following page)

Global Diamond Supply/Demand Forecast				
Nominal Global Rough Diamond Supply				
	Volume		Nominal Value	
	Carats (M)	YoY Change	USD Bil	Nominal Growth ¹
2017A	147.9	12.0%	\$15.1	7.7%
2018E	149.2	-1.9%	\$15.4	2.8%
2019	145.1	-2.8%	\$15.1	-0.5%
2020	142.2	-2.0%	\$15.3	3.5%
2021	133.5	-6.1%	\$15.7	5.4%
2022	135.5	1.5%	\$16.4	7.5%
2023	136.3	0.6%	\$16.8	6.6%

Nominal Global Polished Diamond End-Consumer Demand				
All figures in USD Bil	Jewelry		Diamond Content	
	Jewelry ²	Diamond Jewelry	Diamond	Nominal Growth
2017A	\$245.4	\$79.2	\$24.0	3.7%
2018E	\$259.7	\$83.8	\$25.0	4.0%
2019	\$273.1	\$88.1	\$26.0	5.5%
2020	\$287.2	\$91.9	\$27.0	4.3%
2021	\$301.6	\$96.5	\$28.5	5.0%
2022	\$316.6	\$100.5	\$29.7	4.2%
2023	\$332.3	\$105.5	\$31.1	5.0%

Implied <u>Real</u> Rough Diamond Price Growth				
	Model	Other Demand Growth Scenarios ³		
	Based on Above	-10%	Flat ⁴	+10%
2019	4.0%	-9.5%	-0.5%	10.5%
2020	0.8%	-13.5%	-3.5%	6.5%
2021	-0.4%	-15.4%	-5.4%	4.6%
2022	-3.4%	-17.5%	-7.5%	2.5%
2023	-1.6%	-16.6%	-6.6%	3.4%

¹Includes supply growth from lab-created and recycled diamonds; see next page for more information.
²Global jewelry demand excluding watches.
³All scenarios nominal.
⁴Implies zero polished demand growth and zero price inflation.

Note: Global rough supply in volume terms is natural diamond production by mining only. Global rough supply in value terms is calculated as the weighted accumulation of global diamond production volume by mine multiplied by each respective mine's average-price-per-carat produced, with rough diamond values reflective of upstream primary-market sales. Production value forecasts influenced by annual average-price-per-carat price escalation tied to U.S. inflation (inflation forecasts based on blend of OECD and IMF estimates). Global rough supply value growth includes factors to account for estimated supply growth from gem-quality lab-created diamonds and recycled diamonds. More information on growth estimates of lab-created diamonds can be found [here](#). The growth in supply of recycled diamonds is estimated to be under 1 million carats annually through 2023, with the growth being driven by start-up companies offering diamond trade-in programs online. Global jewelry demand excludes watches and is based on U.S. Bureau of Economic Analysis and Census data and assumes the U.S. represents ~28% of the global jewelry market and jewelry represents ~90% of the U.S. jewelry and watch market. Global jewelry demand is forecasted to grow at a blended global and U.S. real GDP growth rate plus U.S. inflation rate (inflation forecasts based on blend of OECD and IMF estimates, GDP forecasts based on blend of OECD, IMF and World Bank estimates). Diamond jewelry demand figures assume 31-33% of global jewelry is diamond jewelry (forecasts include a declining rate going into the future). Diamond demand figures assume 28-32% of diamond jewelry is polished diamond content (forecasts include a declining rate going into the future). Polished diamond demand is based on value of diamond content in diamond jewelry sold to end-consumers. Industrial-grade natural diamond is estimated to represent <1% of global diamond demand with no growth assumed (synthetic industrial-grade diamond is not included in demand figures). Implied real rough diamond price growth assumes rough diamond prices and diamond jewelry demand both annually increase at the U.S. inflation rate (inflation forecasts based on blend of OECD and IMF estimates). Implied real rough diamond price growth assumes most recent "actual" price is "fair" based on supply/demand balance at year-end of most recently concluded year in which "actual" figures are available. Implied real rough diamond price growth is a real figure, i.e. net of inflation. Supply and demand of synthetically created industrial-grade diamonds are not included in any figures above.

****The upstream diamond industry is an oligopoly and the major miners produce and sell according to changing market conditions which is not fully reflected in forecasts. As of 2018, De Beers is producing at an estimated 95% of capacity and ALROSA is producing at full capacity. An estimated 30% of global diamond miners regularly produce at full capacity and do not hold excess inventory. Rough and polished diamond prices are influenced by factors other than upstream and downstream supply and demand, e.g. midstream speculation and leverage availability, which is not accounted for in forecasts.**

What was happening this time last year...

- ◆ Demand was strong for rough in January 2018 as steady restocking followed a good Christmas holiday season for retailers.
- ◆ Canadian miner Mountain Province Diamonds announced that it would be acquiring diamond exploration company Kennady Diamonds in an all-stock deal worth C\$175 million at the time.
- ◆ Gem Diamonds recovered a 910 carat, D-color Type IIa diamond from its Letšeng mine in Lesotho, the diamond was the fifth largest rough diamond ever recovered.
- ◆ News broke that Indian billionaire Nirav Modi, owner of diamond trading, manufacturing, and retail businesses, was being investigated by government authorities for bank fraud estimated at \$1 billion at the time.
- ◆ The Indian government reduced the GST (tax) on traded polished diamonds set for export from 3.00% to 0.25%.
- ◆ Vrai & Oro, a lab-created diamond retailer and subsidiary of U.S.-based producer Diamond Foundry, announced that it would be closing its only retail location in Los Angeles after being open for less than a year.

About:

Paul Zimnisky, CFA is a leading global diamond industry analyst based in the New York metro area. His research and analysis on the diamond industry is used by financial institutions, management consulting firms, private and public corporations, governments, intergovernmental organizations and universities.

Paul is a regular contributor to industry leading trade journals and publications and he is regularly interviewed by prominent media outlets including *Reuters*, *The New York Times*, *The Wall Street Journal*, *Bloomberg*, *The Financial Times*, *CBC*, *The Globe and Mail*, *The Times of India*, *Nikkei Asian Review* and *Agence France-Presse*.

Prior to his work as an independent diamond industry analyst, Paul worked on Wall Street for over 10 years in capacities including buy-side analyst, arbitrage trader and exchange-traded fund developer. He is a graduate of the University of Maryland's Robert H. Smith School of Business with a Bachelor of Science in finance and is a holder of the Chartered Financial Analyst designation and is a member of the CFA Society of New York.

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