The Future of the Natural Diamond Industry

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BCG

in collaboration with
De Beers Group

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Executive Summary

The natural diamond industry navigated a challenging 2023. Demand was impacted by the bridal catch-up effect after COVID-19 restrictions eased, macroeconomic headwinds, and increasing demand for lab-grown diamonds (LGDs), particularly in the US. In addition, short-term supply was affected by changes in midstream and downstream stock levels. This resulted in a weakening of the value of rough natural diamonds.

The drivers of the natural diamond industry differ in the short and long term. The short-term outlook is driven by, among other factors, stock levels in the midstream value chain segments and retail propensity to restock before and after key selling periods. The long-term outlook (the focus of this report) is driven by supply and demand fundamentals. While demand conditions may remain uncertain in the short term, a more positive long-term industry outlook is supported by constrained primary supply, rising global affordability underpinning demand growth, and industry initiatives (for example, effective marketing and retailer collaborations) to reinforce the desirability of natural diamonds. This report looks at these fundamental drivers in turn, aiming to bring greater transparency to the complex set of factors affecting the natural diamond industry.

Primary supply of natural diamonds is expected to decline by approximately 1% CAGR over the next ten years. Future production increases are unlikely to offset decreasing volumes from mines reaching the end of their productive life. Suppressed exploration budgets over the past decade, a scarcity of large new discoveries, and lengthy mine development timelines make it difficult to foresee significant new volume increases, although there is some potential for brownfield expansion of cyclically viable supply if prices rise. Artisanal mining volumes are a relatively small share of supply volume. Beyond primary supply, recycled diamonds are expected to have limited supply impact in the next decade, contributing less than 10% of the supply of natural polished diamonds. This overall constrained supply outlook provides positive stability for the natural diamond industry.

Long-term demand for natural diamonds is driven by affordability and the desirability of diamonds relative to other jewelry, discretionary goods, or experiences. In the coming years, the continuing growth of global real GDP, wealth, and personal disposable income (PDI) is expected to drive overall affordability. Comparatively, desirability faces greater uncertainty over the coming decade, with three main dynamics shaping natural diamond demand:

- The continuing rise of brands, which is driving growth in diamond jewelry and capturing a larger share of value in diamond jewelry sales
- LGD demand, including the timing and degree to which LGD adoption will peak within these ten years
- The relative desirability of diamonds versus gold, other gemstones, and alternative discretionary spending (including experiences) among the growing middle class in Asia

A range of demand scenarios is possible across these dynamics. Taken together, a likely outlook sees annual demand growth over a ten-year period in the range of 2% to 4% CAGR. This outlook reflects growing GDP and PDI; sustained underlying demand in the US; eventual differentiation between natural diamonds and LGDs as LGD prices and retailer margins fall; a more moderate outlook for China; and the realization of strong growth in India.

Given the instability of the past five years—which have seen increased demand for LGDs, the pandemic, the catch-up effect after COVID restrictions eased, and a challenging 2023—understanding the industry outlook requires a fundamentals approach: the likely outlook on many factors is not necessarily a continuation of momentum. This also means the natural diamond industry cannot stay idle. A positive demand outlook is also driven by several industry initiatives. These include effective marketing to support category and industry collaborations that reinforce the desirability of natural diamonds among US consumers. They also include continued efforts to build desirability in Asia.

We hope you find the report instructive in understanding the long-term natural diamond industry outlook, particularly at this dynamic moment in time.



Introduction

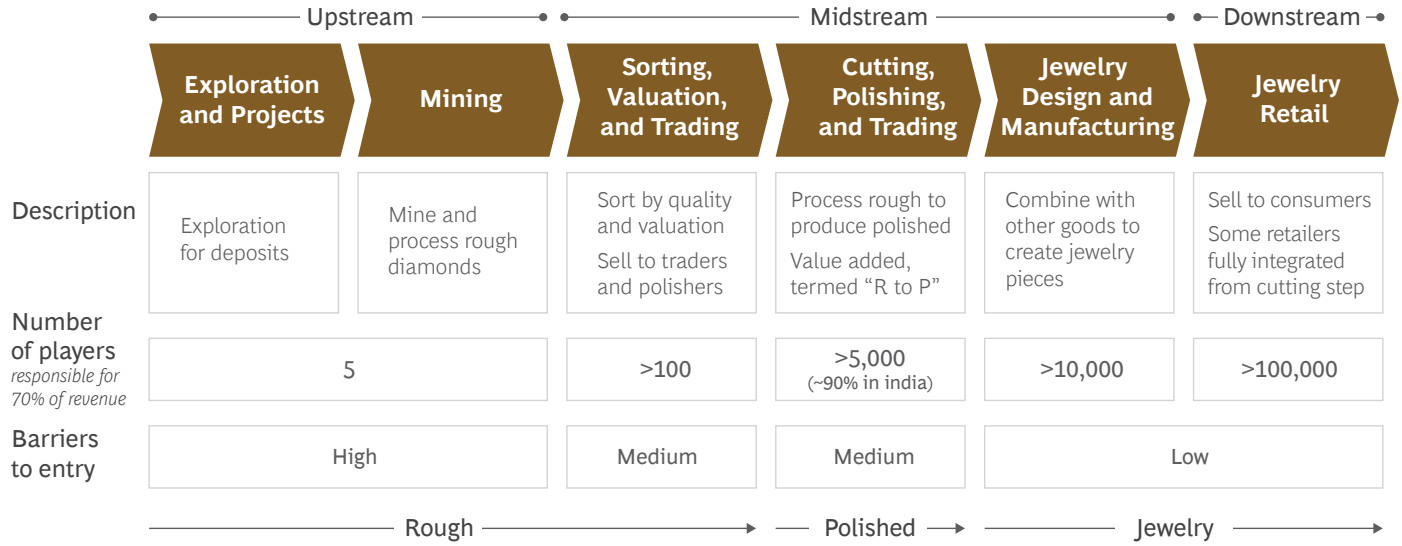
The Natural Diamond Value Chain

The diamond value chain starts with the physical extraction of diamonds, followed by a series of value-adding processes including sorting, cutting, polishing, and finally retailing. (See Exhibit 1.) All segments create value and, in the aggregate, inform diamond jewelry's retail value. The value chain is globalized, with different stages concentrated in specific regions or countries.

Upstream. The upstream steps of the value chain include the exploration and mining of rough diamonds. The largest diamond-producing countries include Russia, Botswana, Angola, Canada, South Africa, and the Democratic Republic of Congo.[1] Diamond mining can range from simple small-scale noncommercial artisanal mining to sophisticated large-scale commercial operations. The two largest rough diamond producers account for approximately 60% of supply by value.[1] Smaller producers comprise the remaining share of production.

1. Kimberley Process; De Beers Group; BCG analysis, 2024.

Exhibit 1 - The Natural Damond Value Chain Includes Extraction, Cutting, Polishing, and Retailing



Sources: BCG analysis; expert interviews.

There are four methods for mining diamonds, including open-pit, underground, marine, and alluvial. Open-pit mining is the most common method. However, many open-pit resources are becoming depleted, and surface diamond resources are now becoming scarcer. As a result, mining companies are looking to more costly underground mining for future expansion.

Midstream. Once rough diamonds are extracted, there are two rounds of sorting. First, they are sorted by industrial and nonindustrial grade, usually on site at the mine. Then they are transported to another location and sorted based on various characteristics such as size, color, and quality. This sorting is crucial for determining their potential value and the most suitable distribution channel. The sorting centers of the biggest producers are typically located in regions of mining operations or close to customers; for example, in Botswana, India, Israel, the US, Belgium, and Dubai.

Next, the sorted rough diamonds are cut and polished into a finished gem to enhance their appearance and value. This process requires skilled artisans and is labor-intensive, which adds to the final wholesale value of a polished diamond. Moreover, a significant portion of the rough diamond is lost during this stage—on average, 50% to 60% of its initial weight.[2]

India is the world's largest center for cutting and polishing rough diamonds, particularly for small and medium-sized diamonds. It accounts for 90% (volume) of polished diamond manufacturing globally.[3]

2. Essilux Group: Knowledge Base, 2024.
3. The Gem and Jewelry Export Promotion Council, "India's Time to Shine in the Global Gold Trade," 2021.

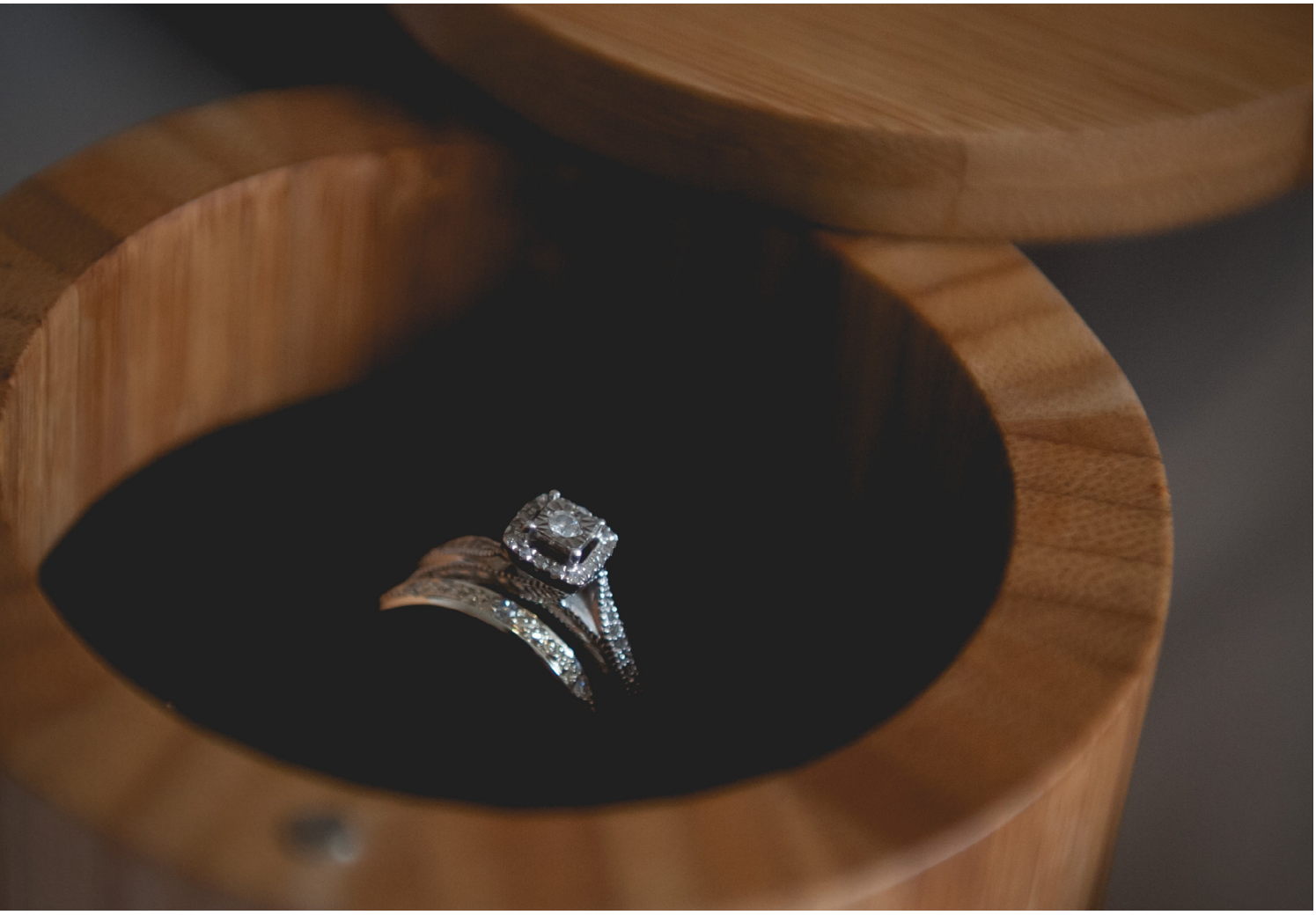
Cutters and polishers typically pay up front for rough inventories, often relying on debt financing to fund purchases. Funding was historically supplied by international banks but has increasingly shifted to India, consistent with the growth of the midstream industry there. Conversely, businesses often sell polished goods on credit, usually offering terms of 30 to 60 days.[4] Proficient inventory management is thus critical for sustaining financial viability.

Cut and polished diamonds are then set into jewelry, which accounts for almost all diamond demand in value. The remaining diamonds are used for industrial applications.[5] This stage involves design and craftsmanship to create finished products. Manufacturing takes place in a wide range of locations, from specialized hubs to local jewelers. Jewelry manufacturers do not normally own their own inventory of diamonds but rather work with either cutter-polisher- or retailer-owned stones.

Downstream. The final stage of the value chain involves the sale of diamond jewelry to consumers. The sale price is typically informed by the polished diamond wholesale price, the cost of additional non-diamond content (such as precious metals or other gemstones), retailer operating costs, and retailer margin. Retailers range from high-end brands to online platforms. Inventory levels required to fulfill retail orders have decreased over the past ten years as retailers have become more efficient at stock management, in addition to an increase in the share of online sales.

The major downstream consumer markets for diamonds are the US, China, and India, with the Gulf States and Japan making up the largest five markets. In 2023, the US accounted for more than 50% of natural diamond polished wholesale demand globally, followed by China and India with a combined 25% share of global polished wholesale demand.[6] Europe's top four markets—the UK, Germany, Italy, and France—account for 8% of total demand- based on sales to consumers resident in each country. Globally, regions vary strongly in maturity and demand landscape. The US is mature, with high ownership and larger diamond sizes. Although China and India have a higher share of smaller diamond sizes, consumers demand higher clarity and color. In India, for example, more than 85% of polished wholesale demand has historically been for high-clarity stones.[7]

4. Rapaport, "From Crisis to Crisis," 2021.
5. UBS, "Diamond 101," 2023.
6. De Beers Group, 2024.
7. De Beers Group, India consumer study, 2019.



Long-Term Fundamental Drivers Impacting the Diamond Industry

The outlook for the diamond industry is influenced by a variety of factors and differs by time horizon. The short-term outlook is influenced by midstream stock levels and midstream risk perception, as well as the propensity of retailers to restock before and after key sales periods. In contrast, the long-term outlook is driven by the long-run equilibrium of supply and demand, which is based on consumer demand and expected return on supply investments. This report focuses on the supply and demand fundamentals that impact the long-term outlook.

Supply Drivers

Understanding supply in the diamond industry requires a broader perspective than production alone. It is essential to consider the entire supply chain, recognizing that inventory decisions at various stages influence the final supply available to the downstream, particularly in the shorter term.

Diamond supply is predominately made up of newly mined stones, referred to as the "primary supply." Some secondary supply comes from existing stones reentering the value chain through diamond recycling.

Primary supply is determined by the underlying resource attributes and lifespan of the key diamond-producing mining deposits. It is also affected by mining companies' decisions about extending the lifespan of mines and investing in new (greenfield) or existing (brownfield) projects, as well as in new technologies that improve mining efficiency.

Secondary supply is from pre-owned polished diamonds, often referred to as "recycled diamonds." While the majority of recycled jewelry pieces are resold "intact," in some cases set diamonds can be removed and reenter the diamond value chain, to be "sold as new" in freshly crafted jewelry. In this case, diamonds are used either in their original state or after being repolished or recut. These augment the natural polished diamond supply but represent a small percentage of the total supply.

Primary Production

Long-Term Declining Production

The largest two diamond producers, De Beers and Alrosa, account for roughly half of the primary supply in terms of volume. In 2023, they contributed 25% and 27%, respectively, of the approximately 130 million carats (Mct) volume globally.[8] In terms of value, De Beers Group holds a larger share at 33%, compared to Alrosa's 25%[8], attributable to its greater relative production of larger-carat and higher-quality diamonds. The remaining share of supply is fragmented across several smaller producers and artisanal mines.

Across this industry landscape, annual supply volume has fallen since 2006, when production peaked around 160Mct. Production exceeded 150Mct again in 2017, but fell to 129 Mct in 2023. Annual global production is anticipated to fall to between 110 Mct to 120 Mct by 2033,[9] as future production increases are unlikely to offset the decreasing volumes from mines reaching the end of their productive life. (See Exhibit 2.) Catoca's Luele project in Angola, opened 2023 and forecasted to yield around 628 Mct over 60 years, is the only major new mine entering into commercial production this decade.[10]

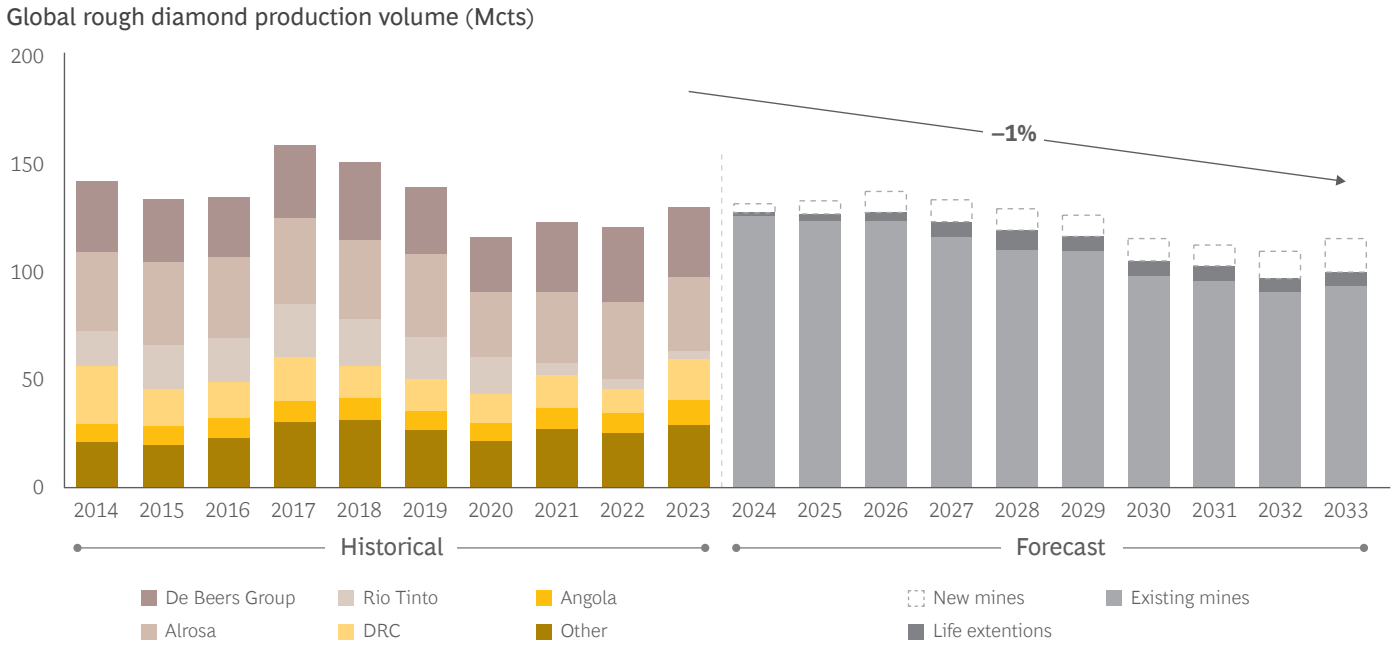
The supply of diamonds takes place on a global basis, with the provenance becoming more important. Immediately following Russia's invasion of Ukraine, the US banned imports of all sizes of diamonds that came directly from Russia. In 2024, the G7 countries are implementing new sanctions in phases, by size of diamond, from January through September. The sanctions are expected to cover all Russian diamonds and diamond jewelry, both directly and indirectly imported, of greater than 0.5 carats.[11] In addition, global brands also self-imposed their own bans on both the direct and indirect supply of all sizes of Russian diamonds. These actions banning direct and indirect supply are expected to have a greater impact than the initial direct bans.

New greenfield sites are unlikely to contribute any significant upside to the current ten-year supply forecast. Mine exploration budgets are heavily suppressed and have fallen to 20% of 2007 levels:[12] approximately $200 million in 2023 versus approximately $1 billion in 2007. In addition, lengthy mine-development timelines will prevent significant volume increases over the next ten years, even if diamond values increase. For example, the Luele mine was discovered in 2013 but production did not start until 2023.

Despite this long-term outlook for greenfield sites, supply elasticity from existing mines based on prevailing diamond demand is possible. Cyclical supply from mines higher up the diamond cost curve is more sensitive to fluctuations in demand. Periods of depressed demand often result in supply pauses (sometimes permanently) from such mines. Conversely, positive demand conditions increase the financial viability, resulting in (re)opening or life-extension projects.

8. De Beers Group; BCG analysis, 2024.
9. Kimberley Process; BCG analysis, 2024.
10. Reuters, "Angola's New Diamond Mine Opens Against Backdrop of Weak Demand," 2023.
11. US Treasury; European Commision, 2023.
12. S&P Capital IQ, 2024.

Exhibit 2 - Modest Decline in Primary Supply of Natural Diamonds Expected over the Next Ten Years



Sources: Kimberley Process; De Beers Group; BCG analysis.

Note: Mct = million carats.

For this reason, the currently depressed demand environment has put downward pressure on supply. More mines are suspending production or shut down earlier than expected (for example, De Beers's Snap Lake mine paused production in 2015 and began active closure in 2022[13]). A continued negative price outlook could drive additional declines in supply as more projects face delays or are discontinued due to low financial viability.

Conversely, a potential sustained positive price outlook could promote some cyclical supply with higher operational capability to be maintained. This could potentially resulting in an overall flatter supply forecast.

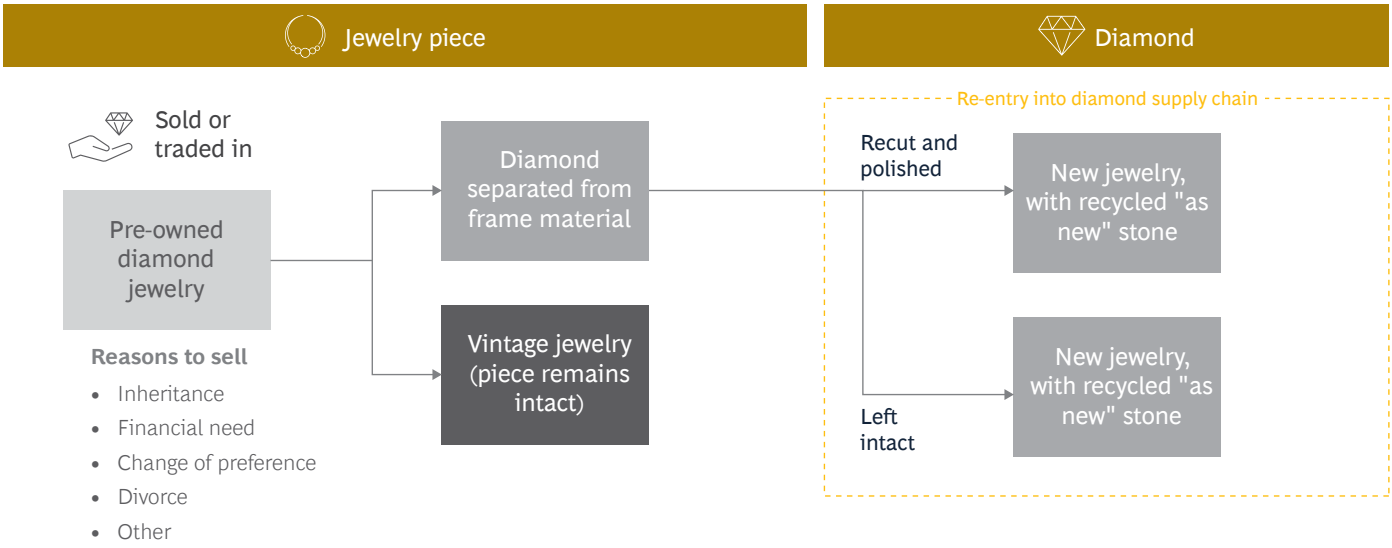
Secondary Supply

Recycled Diamonds Maintain a Small Share of Volume

Recycled diamonds have always contributed to the natural polished diamond value chain, albeit at a low level relative to the primary polished supply. Recycling begins when diamond jewelry owners sell or trade in their items for various reasons, such as not wanting inherited pieces, a change in preferences, or financial necessity. The jewelry can then be directly resold as pre-owned vintage pieces (especially if it is branded) in the secondhand sector, bypassing the upstream and midstream natural diamond value chain. Alternatively, the metal in the jewelry can be melted down and the diamonds "sold as new" in freshly crafted jewelry, either in their original state or after being repolished or recut. This augments the natural diamond supply (but represents only a small percentage of total supply). (See Exhibit 3.)

13. De Beers Group, "Victor and Snap Lake Mines Enter Final Stages of Closure," 2023.

Exhibit 3 - Pre-owned Diamond Jewelry Can Reenter the Value Chain in a Variety of Ways



Source: BCG analysis.

Non-inheritance-related diamond recycling, typically stemming from changes in preference or life events such as divorce or financial necessity, is estimated to account for approximately 80% of recycled diamond volume today. Given that no significant changes in the sale and purchase rates of used diamond jewelry are anticipated, these non-inheritance recycling drivers are likely to persist and continue to fluctuate with the price of diamonds, albeit with a limited incremental impact on the long-term supply development through to 2033. Inheritance, on the other hand, will grow as the initial generations who owned diamonds age. For instance, in Japan, individuals over age 60 possess more than half of the country's diamonds; in the US, the first generation of diamond engagement rings (DER) at scale (the generation where >50% brides received DER) could be inherited in the next 20 years, driving an increase in the inheritance-based recycling volume.[14]

Yet, the proportion of diamonds removed from recycled jewelry and sold "as new" has steadily declined in recent years (compared to recycled pieces being sold "as is"), from approximately 60% of the total recycled jewelry PWP value in 2015 to approximately 30% in 2021.

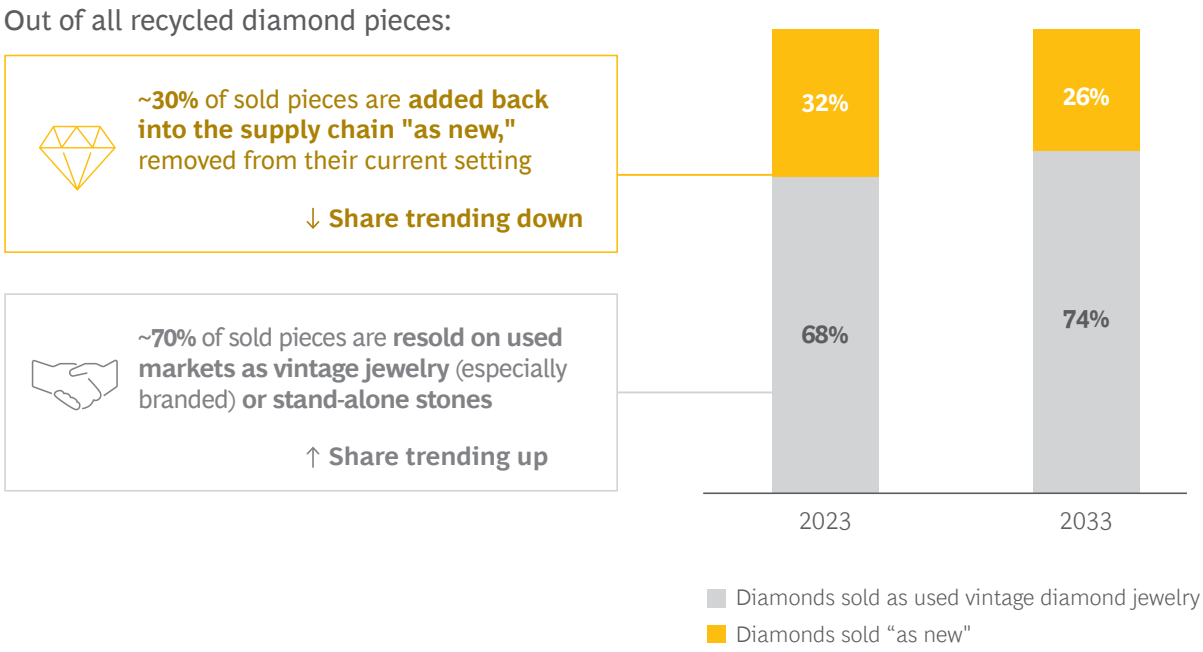
This trend is expected to extend into the future, albeit at a slowing pace, thus limiting the share impacting the diamond supply chain. (See Exhibit 4.) The increased focus on vintage pieces is driven by buyers and sellers alike. Sellers can often capture more value from vintage jewelry than removed stones. Reintroducing diamonds into the value chain reduces their value by 30% to 40%,[15] owing to costs associated with the dealer margin, melting and logistics, testing and proving authenticity, and recutting or polishing. Once the stones enter the market, they must compete on price with newly mined diamonds. In addition, unlike with gold, there is no way to trade recycled stones and a lack of transparency on the price of recycled stones. Buyers, on the other hand, increasingly value the unique design, affordability, and sustainability aspects offered by vintage jewelry. This increases the value of vintage jewelry compared to that of pure recycled material.

Finally, the trend is supported by an increasing number of online consumer-to-consumer platforms that make trading of secondhand vintage jewelry simpler. These channels are highly sought after by vintage jewelry shoppers.

14. De Beers Group; Japan Ministry of Finance Trade Statistics; BCG analysis, 2024.

15. Paul Zimnisky, "Recycling Could Save the Natural Industry," 2019.

Exhibit 4 - Share of Vintage Sales out of All Recycled Diamond Pieces Forecast to Increase



Sources: De Beers; BCG analysis.

Overall, the impact of recycled diamonds on supply in terms of PWP value is expected to remain stable, contributing less than 10% of the supply of natural polished diamonds. Total recycled diamond volume is forecasted to grow at a CAGR of approximately 2% through to 2033, mostly driven by an increase in inheritance across mature markets, as well as an overall larger global "installed base" of diamonds to feed recycling going forward. However, there will be a decreasing share of diamonds removed from their settings and reentering the value chain compared to pieces resold on used markets as vintage jewelry. This dynamic is reflected in the supply forecast in this report.

Value Chain and Stock Levels

Stable Midstream inventories expected to remain, while efficiency reduces Downstream inventory

Natural diamond inventories are held across all stages of the diamond value chain at varying levels. Inventory management dynamics directly influence diamond price formation in the short term by impacting the immediate supply availability. Midstream and downstream inventory levels are particularly relevant as demand flows up through the value chain.

Midstream. In the short term, midstream inventories fluctuate, largely driven by prevailing market conditions, short-term views on the market outlook, and financing. Longer term, structural midstream inventory levels are dictated by the need to manage stock for operational purposes. Although efficiency and scale gains in the midstream have generally reduced stock levels from those observed in the early 2000s, lead times for processing and sales require cutters and polishers to generally maintain a minimum inventory level. However, this floor is occasionally breached in very sharp demand-recovery scenarios.

Downstream. Historically, retailers have held structurally higher inventory levels than midstream players to ensure that a wide range of products are available to consumers. However, the growth of more efficient major brands and retailers and the rise of online retail have reduced stock-to-sales ratios, albeit at a slowing rate. While stock-to-sales ratios could continue to decline, they are increasingly nearing their technical inventory floor (for example, approximately 90 days for major brands), absent a fundamental change in downstream industry structure.

Demand Drivers

Demand for diamonds over the long term is influenced primarily by affordability, which is closely linked to key economic fundamentals such as the growth of GDP and PDI. Additionally, the desirability of diamonds, both within the jewelry sector and relative to other nonessential goods and experiences, plays a significant role.

Historical data shows a close correlation between the demand for luxury goods, including diamonds, and real GDP and PDI. Affordability will continue to be supported in the long term by GDP and PDI expansion.

However, a closer examination by country reveals a more nuanced picture. In the US, diamond demand has recently been somewhat stronger than PDI growth would indicate. The natural diamond sector was notably robust after COVID-19 restirctions eased, benefiting from a rebound in weddings (a 12% increase in 2022 over the long-term average[16]) and a heightened emphasis on emotional gifting and self-reward. Conversely, in China, natural diamond demand has not kept pace with PDI growth. The country's share of global diamond polished wholesale demand increased from 4% in 2000 to a peak of 18% in 2015 but receded to 12% in 2022.[17]

Beyond the economic fundamentals, diamonds' desirability among consumers is strong relative to alternative goods. However, diamonds face increased competition within the jewelry sector and from other discretionary goods and experiences (for example, leather goods, travel, and technology). (See Exhibit 5.)

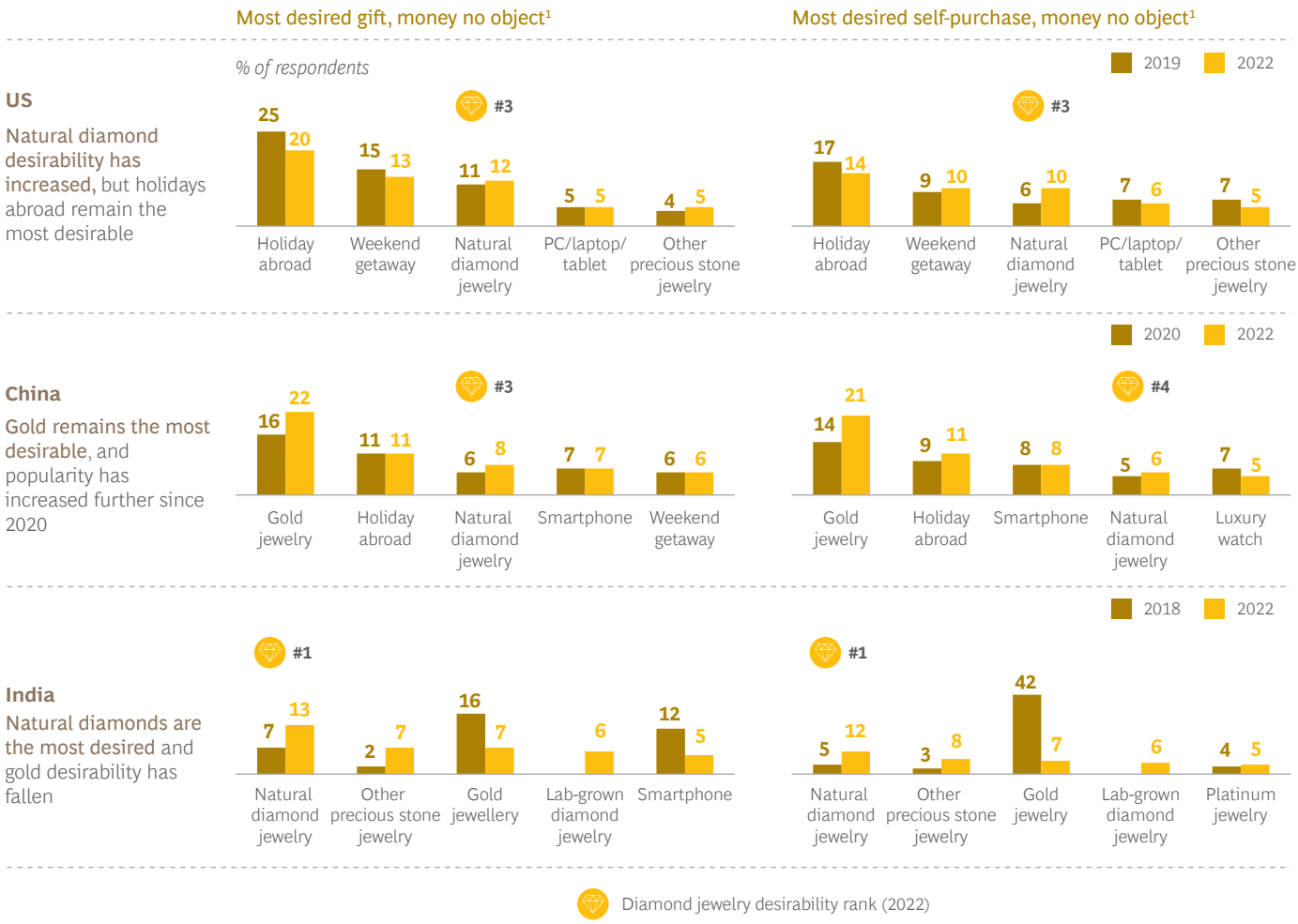
In the US, consumer analysis shows that diamonds' desirability remains high within the broader competitive set. However, their desirability within the jewelry industry has decreased over time. (See Exhibit 5.) Natural diamond demand has reduced following the entry of LGDs. In China, gold retains the highest desirability, with its popularity further increasing since 2020. In India, natural diamonds have surpassed gold in consumer desirability.[18]

16. Wedding Report: Covid-19 Wedding Market Update, Global, 2021.

17. De Beers Group data, 2024; BCG Analysis, 2024.

18. De Beers Diamond Acquisition Study: US 2021 and 2023 (18,000 respondents), China 2023 (10,000 respondents), India 2023 (9,000 respondents).

Exhibit 5 - Desirability for Diamonds Remains High, but Faces Competition with Jewelry and Other Discretionary Goods



Sources: De Beers Diamond Acquisition study: US 2021 and 2023, India 2022, China 2022.

[1]Survey question: If money was no object, which one of these items would you most like to receive as a gift or would you most like to buy for yourself?

The future trajectory of luxury goods, including diamonds, is increasingly influenced by millennials and Gen Z. By 2026 they will represent approximately 75% of the luxury goods market.[19] These younger consumers have a higher average spend per person. They also prioritize innovation, brand visibility, and sustainability in their purchasing decisions; and are more open to adopting new ownership models—for example through renting or buying secondhand luxury items.[20]

The regional and generational differences underscore the importance of understanding the specific growth drivers influencing diamond demand beyond macroeconomic factors.

19. BCG Fashion & Luxury market study, Global, 2023.

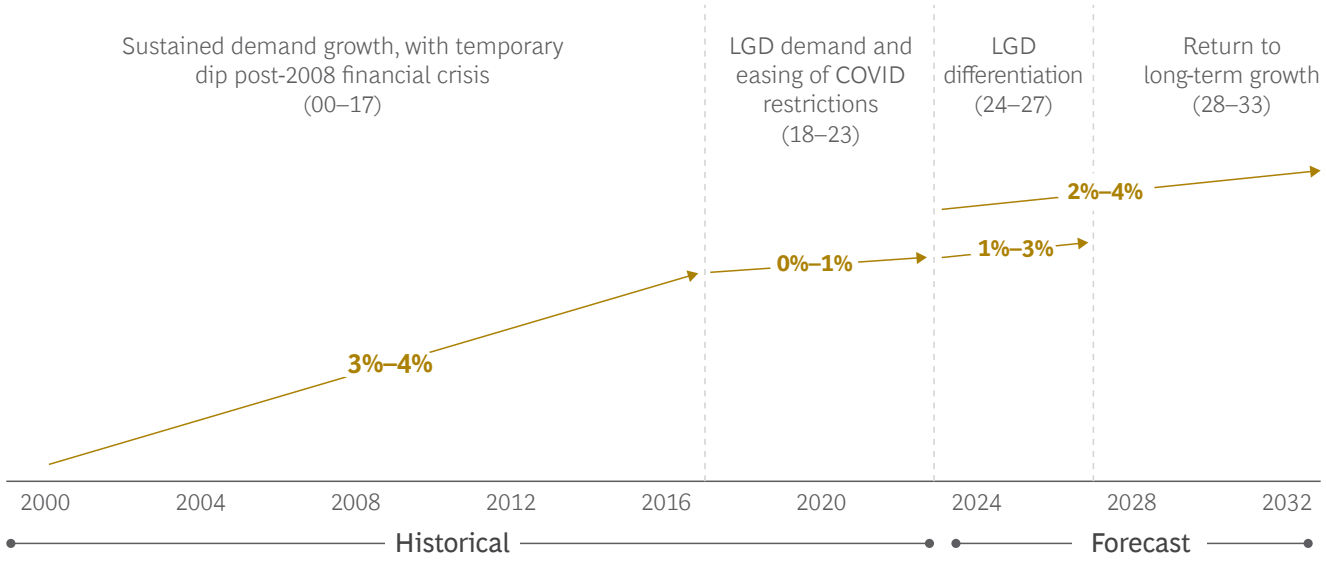
20. BCG True-Luxury Global Consumer Insight Survey (12,000 respondents across 12 countries), 2023.

There is a growing consumer emphasis on brand and design in jewelry selections, particularly in the US. The growth of brands is expected to continue driving overall diamond jewelry growth.



Exhibit 6 - The Most Likely Range for Annual Demand Growth fom 2023 to 2033 Is CAGR 2% to 4%

Natural diamond PWP ($ billions); historical actuals 2016–2023; forecast 2024–2033



Sources: De Beers Group; BCG analysis.

Note: PWP = polished wholesale diamonds.

Three Dynamics Influencing Diamond Demand Growth

The demand for natural diamonds, in terms of polished diamonds wholesale price (PWP), is projected to increase at a CAGR of 2% to 4% nominal from 2023 to 2033. (See Exhibit 6.) This growth, and its potential upsides and downsides, will be shaped by three principal dynamics over the next decade:

The continuing rise of brands, which is driving growth in diamond jewelry and capturing a larger share of value in diamond jewelry sales.

LGD demand, including the timing and extent to which LGD and natural diamonds will differentiate within these ten years.

The relative desirability of diamonds versus gold, other gemstones, and alternative discretionary spend among the growing middle class in Asia.

Polished Wholesale Price

Polished wholesale price (PWP) is the wholesale value of the diamond content in a piece of diamond jewelry sold at retail. It is a measure of the value of the natural diamond industry.

Diamond jewelry value and PWP value do not necessarily move together as retail prices tend to be "stickier."

Unlike other commodities, which typically measure demand in terms of volume, total demand for diamonds is measured using PWP.

The Continuing Rise of Brands

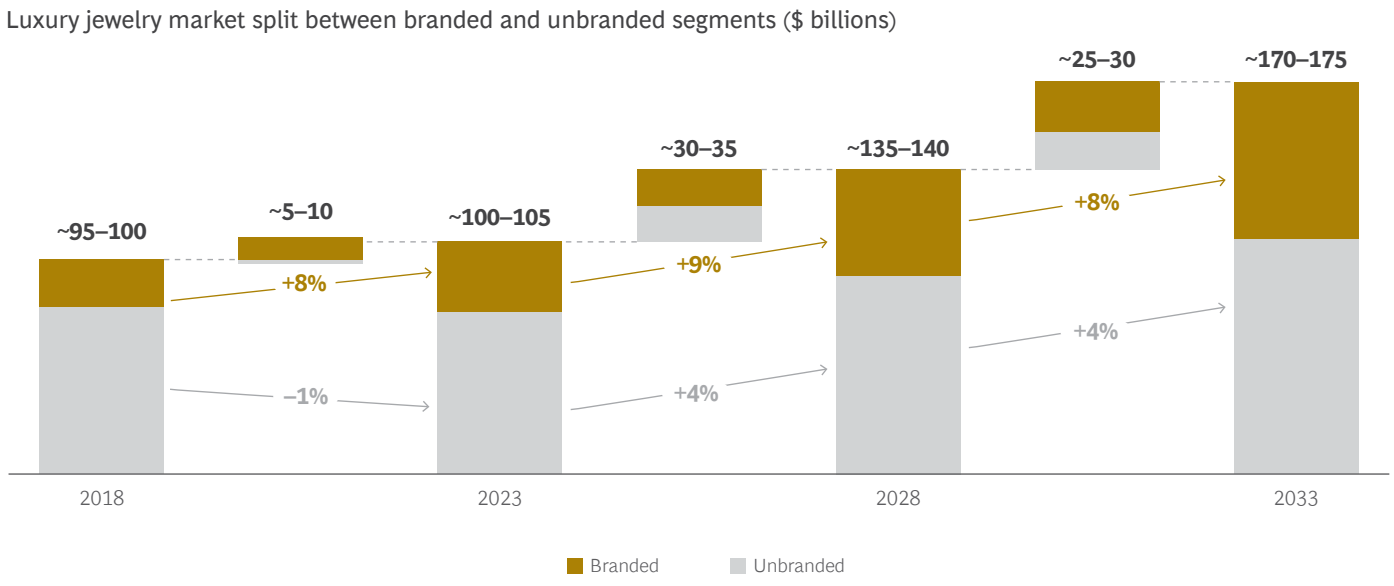
THE BRANDED SEGMENT WILL CONTINUE TO DRIVE DIAMOND GROWTH, CAPTURING A LARGER SHARE OF VALUE IN DIAMOND JEWELRY SALES

Branded jewelry has been a key driver of global luxury jewelry growth, with 8% CAGR over the last five years compared with a 1% decline for unbranded.[21] (See Exhibit 7.) The branded segment will likely capture more than 50% of future revenue from 2023 to 2033. This growth is supported by significant marketing investments from leading brands. For example, the marketing spend of the top four brands as a percentage of sales rose from 8% in 2006 to 12% in 2022.

In addition, there is a growing consumer emphasis on brand and design in jewelry selections. Among Chinese consumers in 2022, for instance, 92% of diamond jewelry acquisitions were branded (based on pieces), with Chinese brands accounting for almost four out of five acquisitions.[22] In the US, the share of branded jewelry acquisition in 2021 was highest among younger generations: 76% for Gen Z and 72% for millennials versus 64% for Gen X and 38% for baby boomers.[23]

The growth of brands is expected to continue driving overall diamond jewelry growth. However, this may affect the diamond content used in jewelry. To maintain their higher profit margins, brands often use fewer diamonds in their pieces, with diamonds serving as high-end price anchors. To fully capitalize on the preference for branded jewelry, the diamond industry needs to enhance the diamond content of branded offerings, ultimately resulting in higher PWP value as a share of the total diamond jewelry industry.

Exhibit 7 - Historic Growth in Jewelry Fueled by Brand Growth—Trend Is Expected to Continue



Source: BCG 2023 Fashion & Luxury industry study; BCG analysis.

21. BCG Fashion & Luxury market study, Global, 2023.
22. De Beers Diamond Acquisition Study: China 2023 (10,000 respondents), US 2021 and 2023 (18,000 respondents).
23. De Beers Diamond Acquisition Study: China 2023 (10,000 respondents), US 2021 and 2023 (18,000 respondents).

Lab-Grown Diamonds

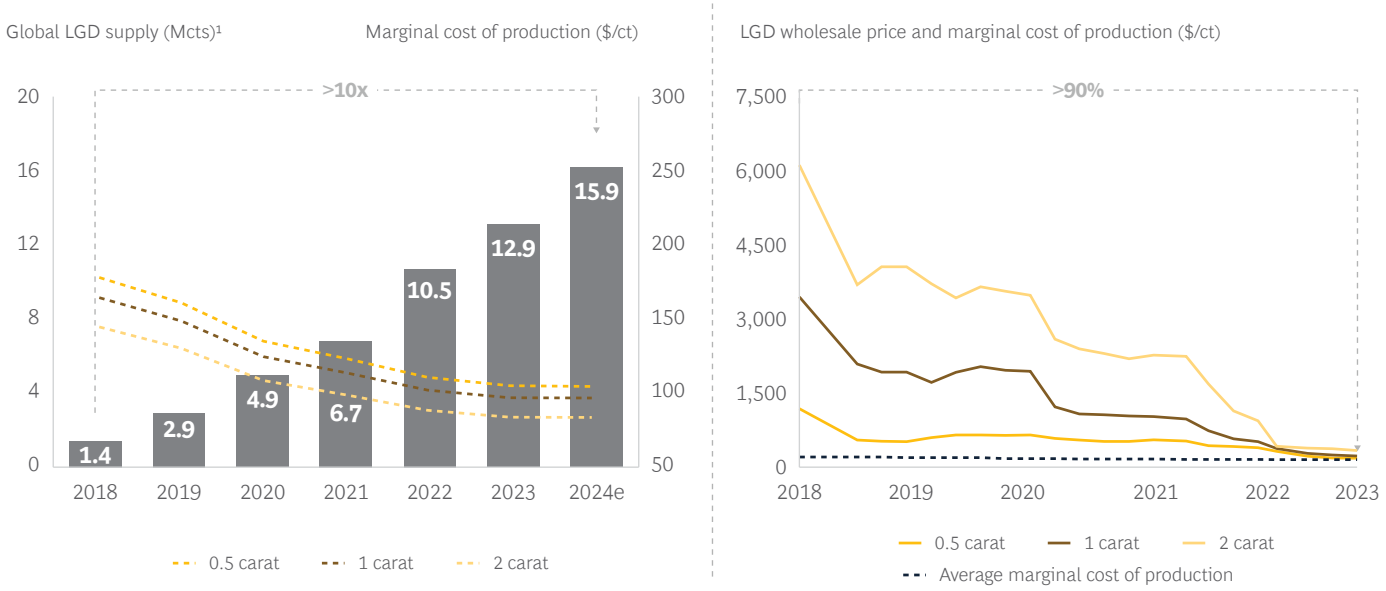
THE EXTENT AND TIMING OF LGD DIFFERENTIATION WILL DEPEND ON THE TRAJECTORY OF FUTURE PRICE CHANGES AND THE POSITIONING OF LGDS AND NATURAL DIAMONDS

LGDs have the same chemical, physical, and optical properties as natural diamonds, but are created in a controlled laboratory environment using high pressure high temperature (HPHT) and chemical vapor deposition (CVD) methods. In contrast, natural diamonds are recovered after forming naturally below the earth's surface over billions of years. Both HPHT and CVD methods are commonly used to produce LGDs. However, CVD is becoming more popular for producing gem-quality synthetic diamonds, while HPHT is used more for industrial applications. LGDs have been seen as a significant challenge to the natural diamond industry over the last five years (albeit during a period in which the pandemic also disrupted demand), with some uncertainty over the future of LGDs within the diamond jewelry sector.

The supply of LGDs has surged over recent years, increasing more than tenfold since 2018.[24] (See Exhibit 8.) Supply growth has been fueled by technological innovations, lower barriers to entry (for example, costs of CVD reactors have significantly decreased) and supportive government policies in India.

Prior to 2020, LGD producers enjoyed considerable profits due to low marginal production costs (around $150 per carat) and high wholesale prices (around $3,000 per carat).[25] This motivated substantial capital expenditures on LGD reactors, which spurred rapid supply growth and the development of new technologies.

Exhibit 8 - LGD Supply Has Rapidly Grown over 10x in the Past Six Years, Driven by Technological Innovation and Government Support, While Wholesale Prices Declined by over 90%, Nearing Marginal Cost of Production



Sources: De Beers Group; Paul Zimnisky; Edahn Golan; BCG analysis.

Notes: LGD = lab-grown diamonds; Mcts = million carats; e = estimate.

¹Excluding melee diamonds.

24. Paul Zimnisky, "What a Mature Lab-Grown Diamond Jewelry Market Could Look Like," 2022.
25. Edhan Golan data, 2024; BCG analysis, 2024.

However, in recent years, profit margins have narrowed. Marginal production costs have decreased to less than $100 per carat, while wholesale prices have fallen to approximately $200 per carat.[26] As a manufactured product, there are no limitations to the supply of LGDs beyond the economics of the business model (in contrast to the supply of natural diamonds). Despite narrowing profit margins, supply growth has continued, bolstered by government support in India (including subsidies, tax cuts, and discounted energy prices), the recoupment of initial investments, and volume growth compensating for unit margin decline.

Driven by the decline in the wholesale prices of LGDs, some producers are exploring new strategic directions:

- WD Lab Grown Diamonds, the second largest US LGD producer and known for high-quality stones, filed for bankruptcy protection in 2023 and has since pivoted to manufacturing industrial-grade LGDs.[27]

- Diamond Foundry, a major US producer accounting for around 20% of the global LGD output, has diversified from jewelry to industrial applications, notably in the semiconductor sector.[28]

- Lusix, an Israeli LGD producer, has recently had to "rethink and recalibrate" its strategy. Originally focused on lab-grown rough, it is now moving downstream to provide premium polished stones and looking to develop high-tech applications for synthetic diamonds.[29]

Although the high profits LGD producers once had have declined, current wholesale price levels continue to deliver reasonable margins, particularly for larger producers in India, where production continues to grow. With suppliers still incentivized to increase production even if wholesale prices continue to decrease, continued supply growth is expected, which will support further price competition.

Demand for LGDs has accelerated, now accounting for more than 10% of the global combined natural and synthetic diamond jewelry demand in terms of value.[30] This rise can partly be attributed to incentives for retailers to switch customers from natural diamonds to LGDs, as the margin on selling an LGD was initially higher than for a natural diamond. In promoting LGDs, retailers highlighted the opportunity to buy a larger, higher-quality diamond at the same or lower price point (the retail discount for a 1.5 carat LGD relative to a natural diamond increased from 40% in 2018 to 80% as of Q1 2024[31]). Some retailers also emphasized LGDs as a sustainable purchase. Owing to these retailer incentives and the resulting growth in awareness among consumers, LGDs have affected the demand for natural diamonds.

To date, the LGD category is primarily US-centric, with the country accounting for approximately 75% of LGD retail sales.[32] In the US, perceived value for money has bolstered demand, particularly among younger consumers who have traded up to buy a bigger or higher-quality stone for the same budget. The highest demand impact has been in the bridal segment. LGDs represent more than 20% of diamond engagement ring demand value, compared with approximately 10% of the total diamond jewelry demand.[33] The retail conversation has been critical to converting US consumers from natural diamonds to LGDs. Signet's CEO stated in March 2024 that "we see some customers coming and wanting a lab-created because they have realized that they can get a bigger carat size for their same budget. And then we have some customers, the biggest percentage, who come in looking for the advice of our expert jewelry consultants to really help them make that choice."[34] This is supported by research indicating that more than 70% of decisions to buy LGD happen in stores.[35]

Conversely, in China, LGDs have not gained the same traction as in the US. This reflects the fact that LGDs have a low resale value and Chinese consumers see diamonds as a source of wealth for future generations. In addition, LGDs have seen insufficient marketing and distribution scale, with most being offered and sold online only.

26. Edhan Golan data, 2024; BCG analysis, 2024.
27. Financial Times: "US Lab-Grown Diamond Producer Files for Bankruptcy," 2023.
28. Diamond Foundry, "World's First Single-Crystal Diamond Wafer," 2023.
29. JCK, "Lusix, Much-Touted Lab-Grown Diamond Producer Shifts Strategy," 2024.
30. Edahn Golan, "The Case for Shifting Product Mix Away from LGD and Back to Natural Diamonds," 2024.
31. Paul Zimnisky, "Sample of Man-Made Diamond Prices Relative to Natural," 2024.
32. DNB Markets; Pandora research report, 2024.
33. Edahn Golan, "The Case for Shifting Product Mix Away from LGD and Back to Natural Diamonds," 2024.
34. De Beers Group, US Retail Sentiment Study. Based on retailers that stock LGD, Q4 2023.
35. Signet Investor Presentation and Q&A, March 2024.

In India, LGD penetration remains marginal. Gift-givers at weddings, the primary consumers of diamond gifts, tend to buy diamonds for their perceived cross-generational value and better resale prospects. Currently, LGDs are only distributed in independent retailers or sold online. However, awareness is increasing, partly due to the growth of LGD manufacturing in India. Further penetration of LGDs in India will likely depend on the perception of natural diamonds as a source of cross-generational value.

Although LGDs initially had attractive margins for retailers, incentives have been changing. The absolute achievable margin on LGDs has fallen, owing to declines in LGD retail prices. Since 2018, increased supply and a continual drop in wholesale prices have led to steep retail price reductions for LGDs—approximately 70% since 2018.[36] Larger mid-market retailers, such as Signet, actively participated in the LGD market, accelerating penetration. More recently, other mass channels have emerged, such as Walmart. In order to gain market share, several retailers aggressively reduced prices of LGDs. Other retailers followed suit to compete, driving the average LGD retail price down. As a result, to achieve comparable absolute margins to selling a natural diamond, retailers now must persuade consumers to buy ever larger LGD stones. At the same time, consumers are becoming increasingly aware that not all LGDs represent a sustsainable purchase and have not held their value over time.

At the higher end of the diamond market, luxury brands have not adopted LGDs at scale. The top four luxury jewelry brands continue to support and exclusively use natural diamonds and openly state this to consumers. For example, LVMH's luxury jewelry brands continue to promise and promote naturality. Some fashion houses have experimented with the incorporation of LGDs in select lines, often through the use of different colors or shapes to position LGDs differently from natural diamonds.

Looking ahead, retail prices for LGDs are projected to decrease further, although the rate of decline is slowing. Deepening discounts support even greater differentiation between LGDs and natural diamonds. The extent and timing of LGD differentiation will depend on the trajectory of future price changes and the relative positioning of LGDs and natural diamonds, including the ability to detect the differences between them. These factors will affect retailer margins and, in turn, influence their incentive to promote LGDs and shape consumer perceptions of LGD desirability compared with that of natural diamonds.

Retailer Incentives. More than 70% of consumer conversion to LGDs over natural diamonds occurs in-store,[37] with retailers incentivized by the higher profit margins. As the retail prices of LGDs continue to fall and wholesale prices level off near the marginal costs of production, the incentive for retailers to promote natural diamonds is expected to increase.

In the past, even as retail prices decreased, retailers still saw growth in absolute profits as consumers traded up and opted for LGDs with higher clarity and carat sizes for the same original budget. This was also promoted by the overall increase in LGD sales volumes.

Year-over-year LGD jewelry sales and gross profit have been on the rise from 2018 to 2023. However, in the US as of December 2023, the pace of decline in retail prices surpassed the rate of volume growth, leading to a decrease in revenue from LGD loose stones compared to the previous year. This decline has continued for four consecutive months. In March 2024, retail sales of loose LGD by value fell by 5.6% year over year.[38]

The average gross margin for loose LGDs has increased from approximately 50% in 2021 to approximately 60% to 65% today,[39] which is higher than for mined diamonds (approximately 35% to 40%).[40] However, the retail prices are much lower for LGDs than natural diamonds, resulting in a lower unit gross profit value of $1,000 for a 1- to 1.49-carat loose LGD in 2023, compared to more than $2,600 for a loose natural diamond of the same size.

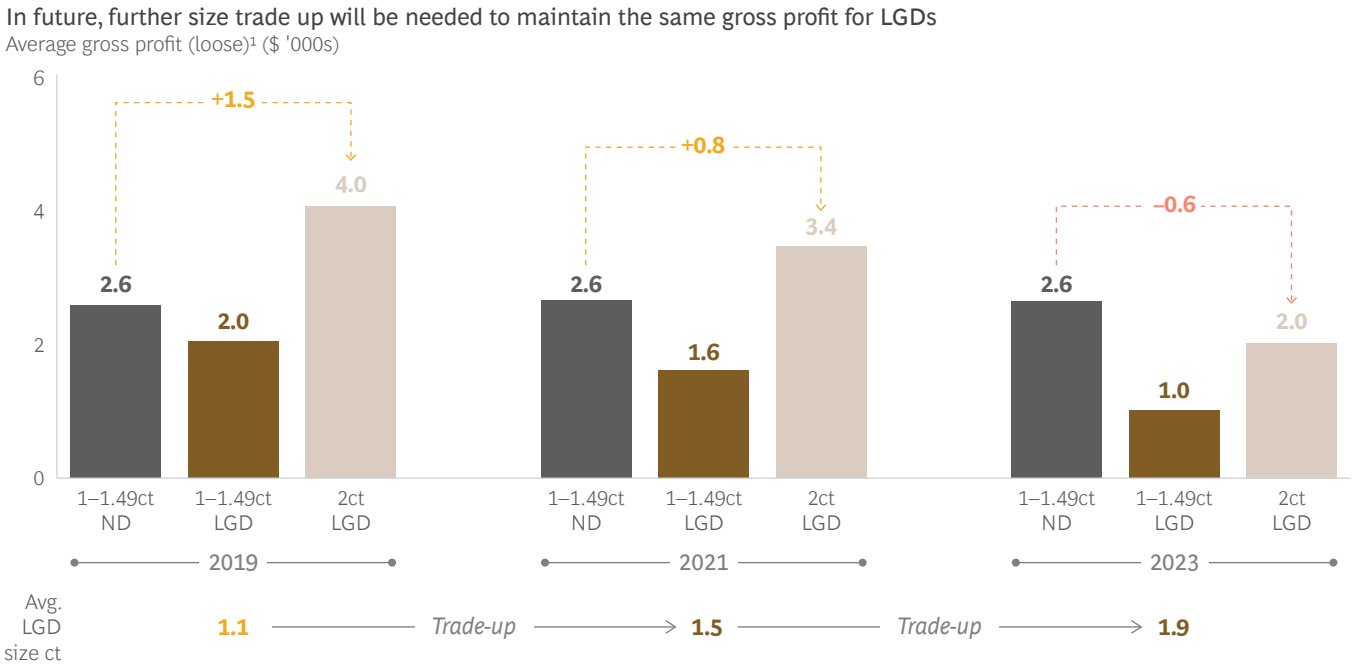
36. DNB Markets, based on surveys of prices by category sampled from prominent online diamond retailers, excluding Lightbox, 2024.
37. Signet Investor Presentation and Q&A, March 2024.
38. Tenoris, "March Sales Weak, LGD Revenue Issues Continue," 2024.
39. Edahn Golan, "The Case for Shifting Product Mix Away from LGD and Back to Natural Diamonds," 2024.
40. Tenoris market comments, 2023.

Despite retail price declines, retailers have been able to increase their gross profit through consumers trading up to larger sizes of LGDs. For example, purchasing a 2-carat LGD instead of a 1- to 1.49-carat natural diamond. However, in 2023, driven by accelerated retail price reduction, the gross profit for a 1- to 1.49-carat loose natural diamond exceeded a larger 2-carat LGD by over $600.[41] Therefore, larger-carat sizes will be needed to maintain the same unit gross profit value for LGDs.

With the continuing decline in retail prices, from 2024 onward, retailers now need to trade consumers up to a 3-carat and above LGD in order to achieve the same gross profit as a 1- to 1.49-carat loose natural diamond. (See Exhibit 9.) With LGD retail prices continuing to fall given oversupply, the trade-up required increases to very large sizes (for example, 5 carats) by 2026. Yet there are indications that consumers' willingness to trade up is limited. Currently, the maximum size that consumers typically trade up to is 2 to 3 carats. In 2023, the average stone size purchase for lab-grown diamond engagement ring pieces was 1.9 carats.[42] The extent of size trade-up is constrained by both budget and limits on consumer preferences for very large stones. For lower-priced diamond simulants (lab-grown moissanite, white sapphire, or cubic zirconia), the sub-4-carat range is the most popular, with the risk that sizes above 3 to 4 carats could be seen as fake.[43] Given this margin decline of LGDs and limited further compensation through consumers trading up their diamond size, a retailer's incentive to focus on selling LGDs over natural diamonds will decrease.

Consumer Perceptions. Demand for LGDs is driven by consumers' attraction to acquiring a larger or higher-clarity diamond at a lower price point. Consumer interest in LGDs remains relatively modest (approximately 25% of women in the US and 5% in China), but it is rising in the US[44] and India (particularly for self-purchase).[45] The rate of LGD unit sales growth continues to climb, although the pace is slowing.[46]

Exhibit 9 - In 2023, the Gross Profit for a 1- to 1.49-Carat Loose Natural Diamond Exceeded a Larger 2-Carat LGD by over $600



Sources: ERA independent US Point-of-Sales data; BCG analysis.

Note: ND = natural diamond; LGD = lab-grown diamond.

[1]Loose round D-I FL-SI.

41. ERA independent US Point-of-Sales data, 2024; BCG analysis.
42. De Beers Group data, 2024; BCG analysis.
43. Tenoris, as per DNB markets; Pandora research report, 2024.
44. De Beers Group, US Retail Sentiment Study. Based on retailers that stock LGD, Q4 2023.
45. De Beers Diamond Acquisition Study: US 2021 and 2023 (18,000 respondents), China 2023 (10,000 respondents), India 2023 (9,000 respondents).
46. Edahn Golan, "The Case for Shifting Product Mix Away from LGD and Back to Natural Diamonds," 2024.



The extent and timing of lab-grown diamond (LGD) differentiation will depend on the trajectory of future price changes and the positioning of LGDs and natural diamonds, as this will affect retailer margins and therefore the incentive to promote LGDs and shape consumer perceptions of LGD desirability compared with that of natural diamonds.

Many industry stakeholders recognize the differing attributes of the LGD and natural diamond categories. For example, the price points are now recognizably distinct, the two have different perceptions of retained value, and there is an infinite supply of LGDs compared to a more limited supply of natural diamonds. In addition, LGDs are driving new purchase occasions within the fashion jewelry segment and there is increasingly differing brand positioning and channel separation. Notably, leading luxury brands are not using LGDs in their jewelry. As these attributes continue to contrast, consumer perception could shift, leading to a differentiation between LGDs and natural diamonds as distinct categories, with LGDs seen as more of a fashion jewelry purchase and natural diamonds remaining within fine jewelry. Given consumer interest in LGDs is primarily occurring in-store, a key consideration will be whether major jewelry retailers continue to sell both categories in the same store environment. Greater differentiation between natural diamonds and LGDs may be most pronounced in the bridal segment, where the traditional value of natural diamonds may contrast more distinctly with the perceived attributes of LGDs.

The long-term success of LGD jewelry relative to natural diamonds is likely to be influenced by the marketing strategies employed by both sectors and also the ability to detect the difference between LGDs and a natural diamond. There is an opportunity for the natural diamond industry to enhance the desirability of their mined stones over LGDs, especially in the bridal and gifting segments. For example, the industry could emphasize the rarity and unique nature of natural diamonds, as well as their ethical and environmentally sound sourcing credentials and the socioeconomic development benefits from natural diamond mining. Such factors are increasingly significant to millennial and Gen Z consumers, who prioritize sustainability and ethics in their purchasing decisions.

Desirability Among the Growing Middle Class in Asia

China continues to favour gold, while in India the desirability of diamonds and other gem jewelry is increasing

The future success of diamonds in Asia is closely tied to several key factors:

Growth of GDP and PDI. The jewelry sector in India, for instance, is expected to expand by approximately 10%, propelled by an expanding middle class benefiting from increased per capita income (PDI per household forecast to increase 130% by 2033[47]) and a growing number of higher-income households.

Desirability. Although consumers in China and India have historically favored gold, recent trends show a divergence in consumer preferences between the two nations.

47. Oxford Economics, Global, 2024.

In China, gold has continued to perform strongly over diamonds. From 2018 through 2022, gold ownership in China increased by approximately 30 percentage points, while diamond ownership remained flat.[48] This trend is likely driven by economic uncertainty, gold's established reputation as a secure investment asset,[49] and record prices, reestablishing it as a desired store of value with appreciation potential. According to 2023 surveys by the People's Bank of China, household saving intentions remained near-record highs,[50] favorably impacting gold. Consequently, in 2023, China surpassed India to become the largest gold jewelry market globally in terms of volume, with annual gold jewelry demand of 630 tonnes versus India at 560 tonnes.[51] In mainland China and Hong Kong, pure gold remains the most favored jewelry. This trend is expected to persist amid continuing economic uncertainty. In addition, Gen Z consumers are more attracted to gold jewelry compared to other age groups. And younger Chinese consumers continue to purchase gold jewelry products as a symbol of Chinese tradition and heritage. Further, they perceive gold as having enduring investment value preservation.[52]

In contrast, India has seen an increase in the purchase of gem jewelry compared with plain gold. This has been partially driven by gold demand decline, given higher gold prices and lower investment relevance among younger generations. Although the 18-to-24 age group in India acknowledges gold's long-term value, they do not regard it as the most desirable choice.[53] This is especially true among urban young women, who feel less emotionally connected to gold than older generations.

However, the more prominent driver has been the accelerated desirability for modern jewelry designs among the younger, Western-influenced generation. Compared to 2018, Indian consumers in 2022 spent almost three times more on diamond jewelry, rising from an average of approximately $560 to approximately $1,500.[54] Millennials and Gen Z accounted for more than 75% of diamond jewelry share value.[55] Looking forward, with gold prices expected to remain elevated and the younger population gaining purchasing power, this trend is likely to continue.

Retail Strategies. The push for diamonds over gold by retailers is likely to be important in driving overall demand in the region. In India, local brands and retailers are particularly important in the purchase of jewelry, with international brands having less impact. Footprint expansion plans, combined with target product mix by major local retailers, will likely influence whether gold, diamonds, or other gemstones become more prominent. Currently, retailers are incentivized to promote diamond sales, given the generally healthier profit margins for diamonds. It is therefore important to note that while India can be a significant driver of natural diamond demand growth in the coming decade, the natural diamond industry must take an active approach to continue to build desirability in India and promote the inclusion of natural diamonds within retailer expansion plans.

In China, the natural diamond purchase journey increasingly includes a digital element, particularly for research, but physical stores remain dominant (96% of diamond purchases are made in a physical store). In China, mega-chains—including Chow Tai Fook and Chow Sang Sang—represent approximately 50% of retail demand.[56] In 2021, the Natural Diamond Council announced a strategic partnership with Chow Tai Fook to "convey the value of natural diamonds to Chinese consumers,"[57] and an increasing number of Chinese brands are promoting engagement rings.

However, according to a World Gold Council survey, most Chinese retailers anticipate further growth in gold inventory, with the inventory shares of diamond and platinum products trending lower. The soaring popularity and recent tightening in supplies of coloured gem and pearl products has led 21% of surveyed retailers to plan to increase their stock of these items.[58] Only a few retailers experienced growth in diamond and platinum product sales in 2023, which partially explains the declining share of these items in their inventories.

48. De Beers Group, Diamond Acquisition Study: China 2023 (10,000 respondents).
49. World Gold Council: Jewelry Market Insights, China, 2023.
50. People's Bank of China: Urban Depositor Survey, China, 2023.
51. World Gold Council: Demand Trends, Global, 2023.
52. Chow Tai Fook: Jewelry Consumer Trends Report, 2023.
53. World Gold Council: Gold Market, Reform and Growth, India, 2023.
54. De Beers Diamond Acquisition Study: China 2023 (10,000 respondents), India 2023 (9,000 respondents).
55. Edahn Golan, "The Case for Shifting Product Mix Away from LGD and Back to Natural Diamonds," 2024.
56. De Beers Diamond Acquisition Study: China 2023 (10,000 respondents), India 2023 (9,000 respondents).
57. Natural Diamond Council, "Natural Diamond Council Announces Strategic Partnership with Chow Tai Fook," 2021.
58. World Gold Council: Jewelry Market Insights, China, 2023.48.

The Impact of Recycling

Inheritance could emerge as a factor affecting demand towards end of next decade

Financial distress and divorce will continue to be contributors to supply of recycled jewelry. However, inheritance is expected to emerge as a factor toward the end of the next decade (see the Secondary Supply section for recycling impact on natural diamond supply). Among new inheritance owners, one-tenth intend to sell their inherited diamond jewelry.[59] Therefore, while the supply impact of inheritance is expected to be limited, inheritance has the potential to impact demand trends due to inherited vintage jewelry pieces being kept and worn by recipients.

Sales of vintage items can either stimulate the used marketplace only (buyer would not consider buying new) or they can substitute the otherwise planned purchase of new diamond jewelry. Considering that the majority of inherited jewelry is retained, approximately 20% of the total value of inherited jewelry is likely to influence the purchasing behavior of the new owners, displacing their new diamond jewelry demand within the investigated period.[59]

Based on the distribution of diamond ownership in the respective age groups, the incremental impact of inheritance-based recycling from vintage sales and displaced demand is expected to increase in the 2030s and plateau after 2040.

The Future of Demand

The US will continue to be key for future value growth, with India emerging as the second largest diamond-consuming country

Based on the future demand dynamics shaping the industry over the next ten years, the US is anticipated to remain the biggest contributor to the diamond industry's future value growth. (See Exhibit 10.) India is emerging as the second largest diamond-consuming country, overtaking China in terms of total value based on polished wholesale prices.

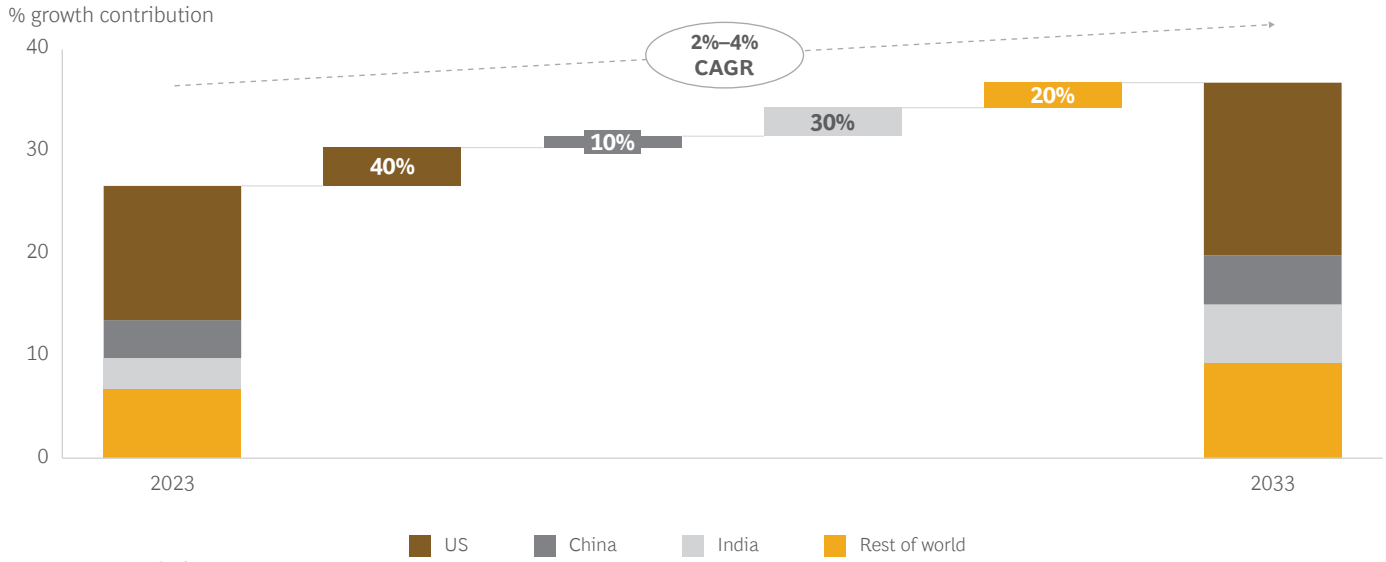
The US is expected to grow at a CAGR of approximately 1.5% to 3.5% from 2023 to 2033. Weddings will continue to constitute a major portion of this demand, despite the demand for LGDs continuing. However, as LGD prices continue to decrease, the most likely consequence is greater differentiation of LGD and natural diamonds. This would lead to a decrease in preference for LGD versus natural diamonds in the latter half of the decade and incremental LGD growth within the fashion jewelry segment as more mass-market retailers continue to push LGDs. Moreover, the projected rise of inheritance during the 2030s is likely to influence demand patterns.

China's demand is expected to be challenged in the near term owing to consumer caution, with a tendency to invest in gold due to its perceived stable investment value. China is expected to grow at a CAGR of approximately 1% to 4%, through 2033.

Exhibit 10 - The US Is Anticipated to Remain the Biggest Contributor to the Industry's Future Value Growth; India Is Emerging as the Second Largest Diamond-Consuming Country

Total demand for polished diamond by geography 2033

PWP natural diamond demand ($ billions); historical actuals 2023; forecast to 2033



Source: BCG analysis.

Note: PWP = polished wholesale price.

59. De Beers Group; BCG analysis.

India is forecasted to experience robust demand growth of approximately 5 to 8% CAGR through 2033. The growth will be underpinned by rising disposable incomes, a strong jewelry demand, expanded retailer operations, and a further building of desirability for diamond jewelry catalyzed by the diamond jewelry industry.

To increase the market share of natural diamonds within the jewelry and discretionary goods sectors, industry participants must reinforce the desirability of natural diamonds across key diamond-consuming countries. This can be achieved through strategic brand collaborations, targeted marketing efforts, and other demand-strengthening initiatives.

> "Natural diamonds are still highly desired. Gen Z are interested, engagement with social content related to natural diamonds is still high, and diamonds are often talked about in popular culture. Future success or failure will be about natural diamonds remaining high on that tree of desirability of products. This part is within control of the industry to drive demand."
> — *Natural Diamond Council CEO, April 2024*

Stakeholders in other product categories have cultivated desirability through coordinated marketing campaigns. For instance, the growth in demand for Bordeaux fine wine from 2003 to 2022 can be attributed to exclusive promotional events that showcased the superior quality and reputation of Grands Crus.[60] Another example is Woolmark's success in boosting global demand for Australian wool. Approximately 90% of merino wool used in fine apparel originates from Australia.[61] Woolmark achieves this by positioning Australian wool as a premium fiber, educating brands about its benefits, and closely monitoring long-term and emerging consumer trends. Notably, their recent "Wear Wool, Not Fossil Fuel" campaign emphasizes wool's role in sustainable circular models that minimize waste and pollution compared with synthetic fibers.[62]

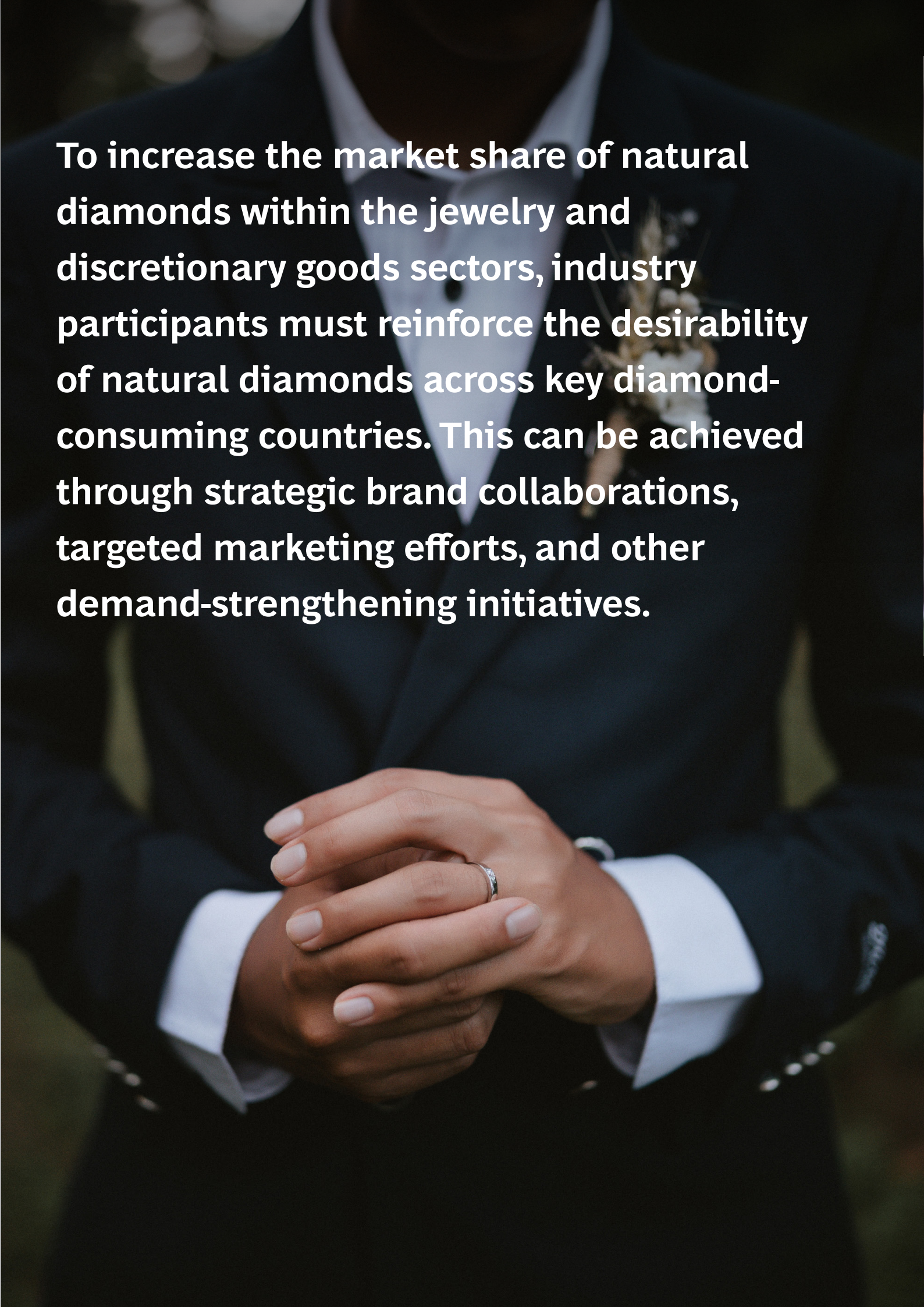
In the US, a pronounced shift toward branded jewelry has made category-level marketing more challenging within the diamond jewelry sector. International brands have significantly increased their marketing investments (more than fourfold since 2008 across the top four brands), fueling a robust 9% CAGR for the branded luxury jewelry sector from 2010 to 2022.[63] As a consequence of this brand-driven growth, diamond category marketing has experienced a sharp decline in its share of voice—from 25% in 2006 to only 5% in 2022—versus the top four brands.[64]

Looking ahead, strategic collaborations with large brands and retailers will be critical for the US diamond industry to enhance desirability and promote the use of natural diamonds. The industry can strengthen US demand for natural diamonds through targeted lobbying efforts and educational initiatives. These efforts should emphasize the unique qualities of natural diamonds in contrast to alternatives like LGDs.

In India, iconic brands have made limited inroads. A large share of the sector is made up of local brands, unbranded pieces, and gold jewelry rather than diamond jewelry. The diamond category has a higher category share of voice. This presents an untapped opportunity to activate marketing in support of the category within India. Collaborating with local retailers can also promote the desirability of natural diamonds, especially given retailers' expansion plans.

In China, collaborating with the major Chinese retailers could also support growth as they plan to expand while also increase profitability. Promoting new occasions for the category beyond bridal will be critical in China as the number of marriages declines, partly driven by younger generations postponing marriage or choosing not to get married. Having a strong presence online and across social media channels will be important to ensure diamonds are highly desired among a maturing Gen Z population.[65]

60. Livex Fine Wine 100; Dimson, Rousseau, and Spaenjers, "The Price of Wine," 2015; Union Grand Crus Bordeaux; BCG analysis, 2024.
61. Woolmark, "Where Wool Comes From," 2024.
62. Woolmark, "Wear Wool, Not Fossil Fuel," 2022.
63. BCG Fashion & Luxury market study, Global, 2023.
64. Natural Diamond Council and De Beers marketing data; Cartier, VCA, Tiffany, and Bulgari company reports, 2006 and 2022.
65. De Beers Group, Diamond Acquisition Study: China 2023 (10,000 respondents).



To increase the market share of natural diamonds within the jewelry and discretionary goods sectors, industry participants must reinforce the desirability of natural diamonds across key diamond-consuming countries. This can be achieved through strategic brand collaborations, targeted marketing efforts, and other demand-strengthening initiatives.



Future Outlook for the Diamond Industry

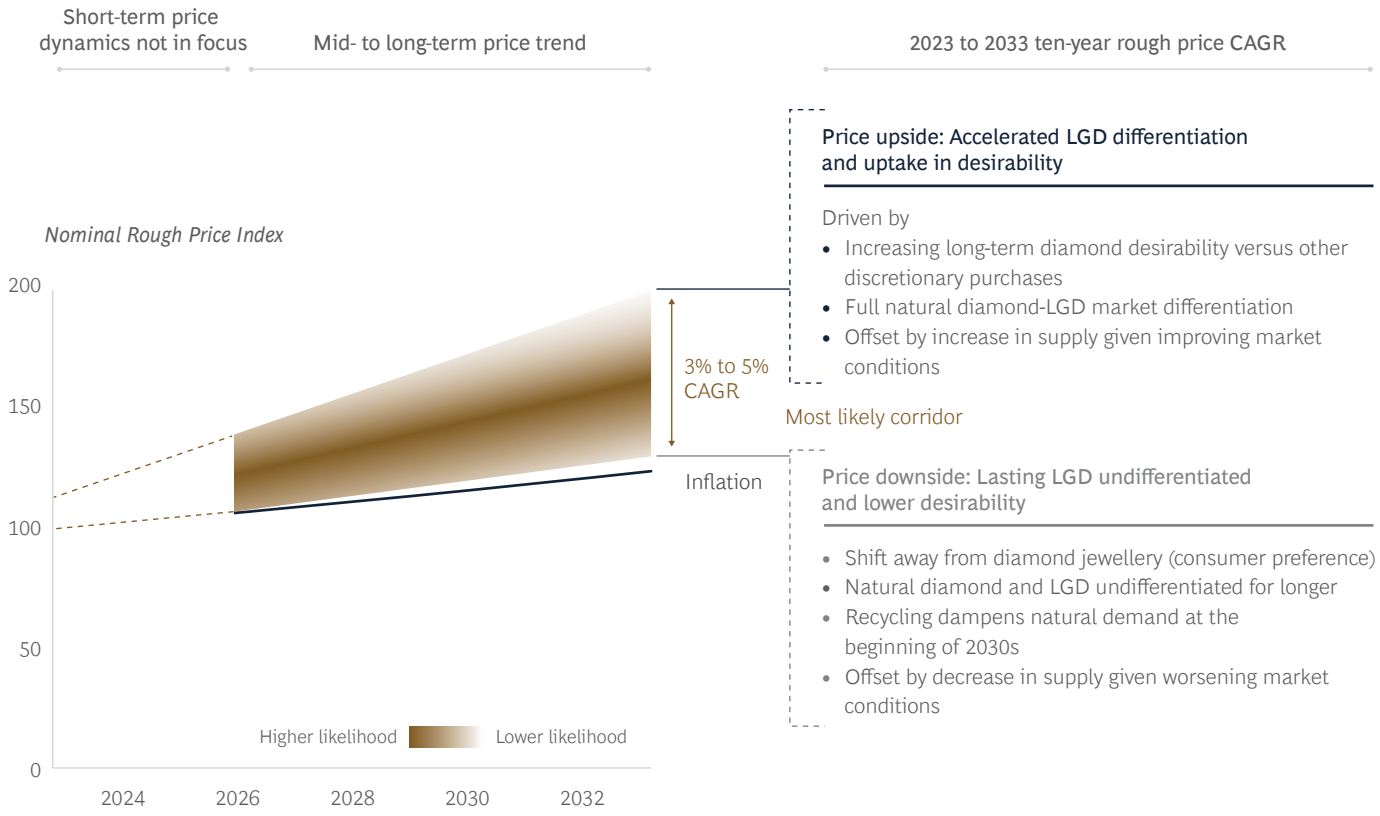
Long-Term Outlook

Most Likely Growth Corridor over the Ten-Year Period

Given the complexities and specificities of the diamond value chain, there are several ways to translate long-term supply and demand fundamentals discussed in this report into a potential outlook for the industry (including for rough diamond values). Considering growing long-term demand and the likely constrained supply environment, a likely scenario for long-term nominal rough values indicates growth in the corridor of 3% to 5% CAGR from 2023 to 2033. (See Exhibit 11.)

This growth is supported by economic foundations that bolster affordability and industry initiatives, such as marketing, to reinforce desirability in the US resulting in differentiation between natural diamonds and LGDs and building of desirability in Asia. The anticipated supply constraints further contribute to expectations of growth in values in the longer term, recognizing that values have been more challenged in the past years.

Exhibit 11 - A Possible Scenario for Long-Term Nominal Rough Price Indicates Growth in the Corridor of 3% to 5% CAGR



Sources: De Beers Group; BCG analysis.

Note: Long-term inflation assumed 2%–2.5%; LGD = lab-grown diamond.

While long-term growth is expected, short-term volatility may arise from purchasing behaviors in the midstream. The most likely scenario above assumes that the factors adversely affecting diamond prices between 2020 and 2024—such as LGD demand, economic uncertainty, and midstream destocking—will subside. Consequently, prices are projected to rebound to a pattern of long-term growth, albeit this upswing will be stronger from 2028 to 2033, coinciding with anticipated tighter supply constraints and the waning effect of LGD substitution.

The long-term growth outlook falls within the long-term range historically observed in the industry—while higher than the less than 1% annual growth rate (nominal) observed from 2013 through 2023, it remains below the higher historical growth rates (5% to 6% CAGR, nominal) observed in the preceding decade (2003 to 2013).

Stress Testing the Outlook: Beyond the Most Likely Corridor

As with any outlook on supply and demand drivers, one may want to consider the set of assumptions on supply and demand fundamentals that would need to eventuate to result in industry scenarios outside the most likely range. While natural diamond supply is likely to change in light of anticipated values over the long term, the key drivers to stress test remain on the demand side.

Downsides to the Most Likely Industry Outlook

A less positive (but lower probability) industry outlook could occur if the industry saw major demand discontinuities in the coming decade that cause consumers to shift away from the category. New consumer categories could emerge, perhaps underpinned by innovative marketing approaches. Social norms (particularly in markets with lower historical natural diamond marketing) could shift away from the wearing of fine jewelry as an outward display of wealth and success. Geopolitical factors could rapidly affect consumer purchasing behaviors, given the relative geographical concentration of natural diamond supply.

Extending the horizon further, the development of organized platforms for recycling and a rise in demand for secondhand jewelry (in conjunction with inheritance) could put additional pressure on demand. And while differentiation between LGDs and natural diamonds is the most likely consequence of continued LGD price decline, it remains difficult to assess the long-term impact the emergence of LGDs has had on natural diamond desirability.

The fact that many of these potential downsides relate to desirability underpins the unique opportunity the industry has to shape its future.

Upsides to the Most Likely Industry Outlook

As there are lower-probability downsides, there are also upsides for the industry on both demand and supply drivers. The obvious upside is a rapid and successful full differentiation between LGD and natural diamonds, particularly in the US, coupled with LGD differentiation in other markets. There is a strong opportunity to shape desirability in high-growth and emerging markets. Small share gains compared to gold and other gems in China would have a large positive impact.

There are also several potentially large economies (for example, Indonesia, Turkey, and Brazil) whose middle class's income and wealth will grow substantially in the next decade. The diamond industry has historically focused on a small number of geographies. Yet in India, the growing middle class has spurred the diamond industry's growth.

If other emerging markets follow a growth trajectory similar to India's (reaching approximately 0.1% of their national PDI), there could be an additional upside for the global diamond industry of $7 billion PWP by 2033, which would represent approximately 20% incremental demand above the most likely corridor. And in many of these markets, technology and marketing innovation (including using social media and GenAI) means driving desirability may not need to follow the same path the US followed over decades fifty years ago. Innovative industry, brand, and retailer collaborations will be critical.



Final Reflections

After several dynamic years that have seen the rise of LGDs, COVID-19, and the sharp boom as pandemic restrictions eased, the diamond industry now faces a critical moment. Macroeconomic fundamentals—income, wealth, and disposable income—and emerging middle-class growth are important. But unlike most non-luxury commodities, desirability is key to the long-term industry outlook. Demand, underpinned by some of the world's most recognizable historical marketing campaigns, faces recent challenges. The industry structure is changing. Yet through analysis of the supply and demand fundamentals, one can see a positive outlook for the industry.

New natural diamond supply remains limited. The industry has an opportunity—unique among mined products—to catalyze industry participants across the value chain to continue to restore the attractiveness of natural diamonds and stimulate new demand in new demographics, growing emerging markets, and new purchase occasions. This is a unique characteristic of the natural diamond industry. And it is a uniquely important point in time for the industry to collectively set a clear strategic direction to benefit from this.

New natural diamond supply remains limited. The industry has an opportunity—unique among mined products—to catalyze industry participants across the value chain to continue to restore the attractiveness of natural diamonds and stimulate demand in new demographics, growing emerging markets, and new purchase occasions.



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