

# 2022 Pipeline

## Embracing Reality: Hybrid Diamond Jewelry

By Pranay Narvekar  
and Chaim Even-Zohar

Our office secretary was overjoyed. The right man had finally popped the question and sealed it with a beautiful diamond ring. She showed it to all her co-workers. In the center was a large lab grown diamond, surrounded by dozens of small natural stones. What would you call such a piece of jewelry? Is it mostly natural, partly lab grown, mixed, or something else entirely?



In our 2022 pipeline, we are adapting to reality and coining a new term - Hybrid Diamond Jewelry - to describe a piece of jewelry that features both natural and lab grown diamonds.

To ensure transparency and maintain consumer trust, it is essential for retailers to offer a choice between three types of diamond jewelry: natural, lab grown, and hybrid. The popularity of hybrid diamond jewelry will slow the pace of growth for pure lab grown diamonds, offering a transparent in-between alternative.

The hybrid label could herald the end, more or less, of the undisclosed lab grows that have tarnished the reputation of the entire diamond market. De Beers' Lightbox brand may maintain its niche in the more affordable ranges. Hybrid diamond jewelry is already becoming a niche of its own. And it's a beautifully appealing niche - just ask our delighted office secretary. Hybrid jewelry allows retailers to cater for a range of consumer preferences, while maintaining trust in their products.

Our industry is changing fast, and we are responding to that change by splitting our Diamond Pipeline 2022 into two separate pipelines - natural and lab grown.

The gem-quality lab grown diamond business is now a distinct, separate and growing part of the industry. We believe it is important to differentiate accurately between the natural and gem-quality lab grown diamond pipelines.

Chaim Even-Zohar published his first Tacy Pipeline back in 1988. Under the new management of Pranay Narvekar, we are embracing new realities. The natural diamond jewelry retail market in 2022 totalled \$73.85 billion. The lab grown retail market mushroomed to \$12.24 billion. We can't say exactly what share hybrid diamond jewelry represents out of the \$86.09 billion global diamond retail market, but we do know it's growing.

Diamond content in a natural diamond jewelry piece represents 25% of the retail price, compared to 17% in lab grown diamond jewelry, according to our Pipelines. We estimate a figure of around 20.5% for hybrid pieces.

We believe the hybrid diamond jewelry market, at retail polished values, is worth \$2.2 billion to \$2.6 billion. It could be more, but certainly not less. Most of that is from lab grown companies seeking to "upgrade" their product for marketing purposes. That would value the diamond jewelry retail market at around \$73.00 billion, lab grown diamond jewelry retail sales at \$10.69 billion, and 2022 hybrid diamond sales at \$2.4 billion.

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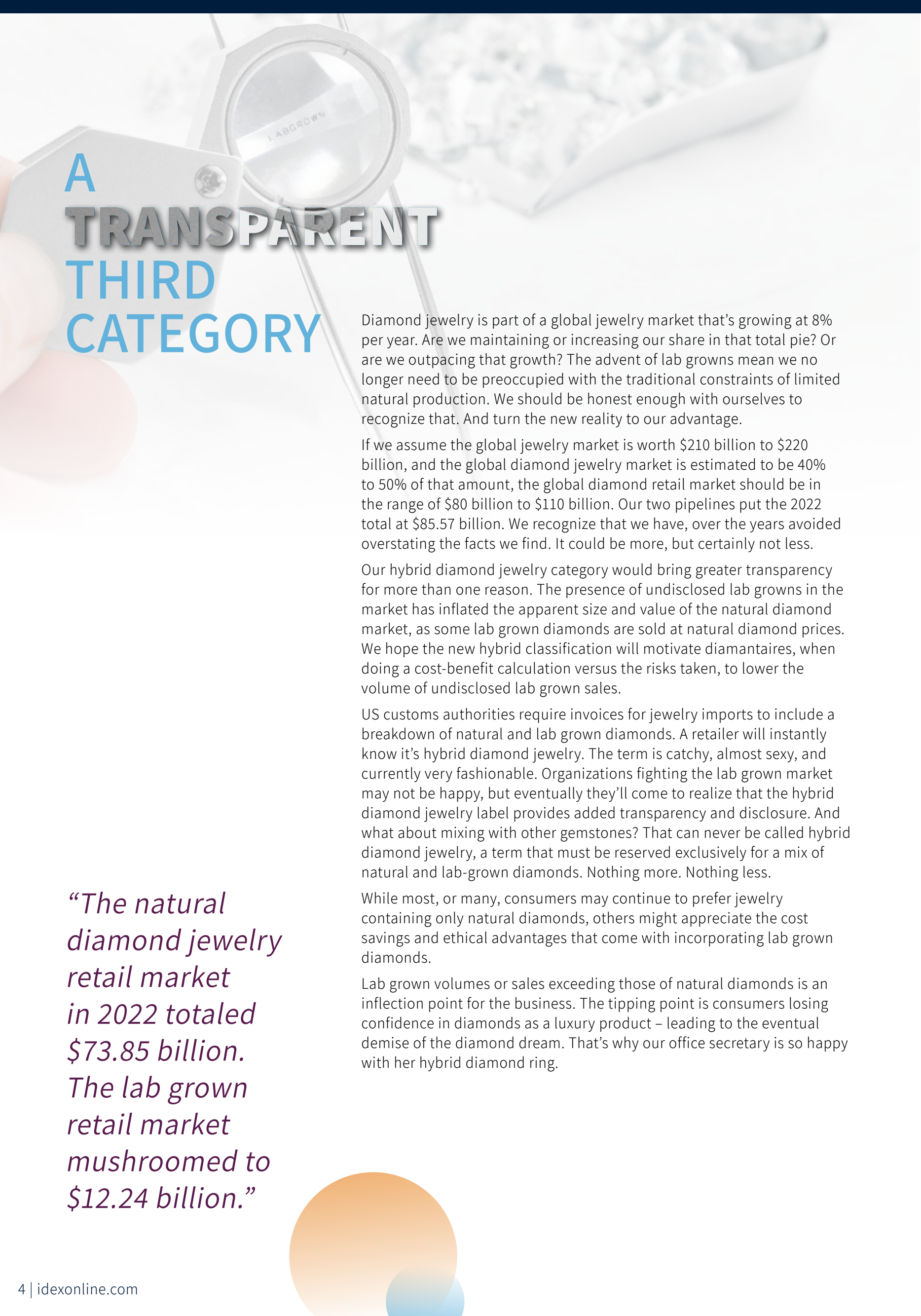
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MORE THAN DIAMONDS



# A TRANSPARENT THIRD CATEGORY

Diamond jewelry is part of a global jewelry market that's growing at 8% per year. Are we maintaining or increasing our share in that total pie? Or are we outpacing that growth? The advent of lab grows mean we no longer need to be preoccupied with the traditional constraints of limited natural production. We should be honest enough with ourselves to recognize that. And turn the new reality to our advantage.

If we assume the global jewelry market is worth \$210 billion to \$220 billion, and the global diamond jewelry market is estimated to be 40% to 50% of that amount, the global diamond retail market should be in the range of \$80 billion to \$110 billion. Our two pipelines put the 2022 total at \$85.57 billion. We recognize that we have, over the years avoided overstating the facts we find. It could be more, but certainly not less.

Our hybrid diamond jewelry category would bring greater transparency for more than one reason. The presence of undisclosed lab grows in the market has inflated the apparent size and value of the natural diamond market, as some lab grown diamonds are sold at natural diamond prices. We hope the new hybrid classification will motivate diamantaires, when doing a cost-benefit calculation versus the risks taken, to lower the volume of undisclosed lab grown sales.

US customs authorities require invoices for jewelry imports to include a breakdown of natural and lab grown diamonds. A retailer will instantly know it's hybrid diamond jewelry. The term is catchy, almost sexy, and currently very fashionable. Organizations fighting the lab grown market may not be happy, but eventually they'll come to realize that the hybrid diamond jewelry label provides added transparency and disclosure. And what about mixing with other gemstones? That can never be called hybrid diamond jewelry, a term that must be reserved exclusively for a mix of natural and lab-grown diamonds. Nothing more. Nothing less.

While most, or many, consumers may continue to prefer jewelry containing only natural diamonds, others might appreciate the cost savings and ethical advantages that come with incorporating lab grown diamonds.

Lab grown volumes or sales exceeding those of natural diamonds is an inflection point for the business. The tipping point is consumers losing confidence in diamonds as a luxury product – leading to the eventual demise of the diamond dream. That's why our office secretary is so happy with her hybrid diamond ring.

*“The natural diamond jewelry retail market in 2022 totaled \$73.85 billion. The lab grown retail market mushroomed to \$12.24 billion.”*

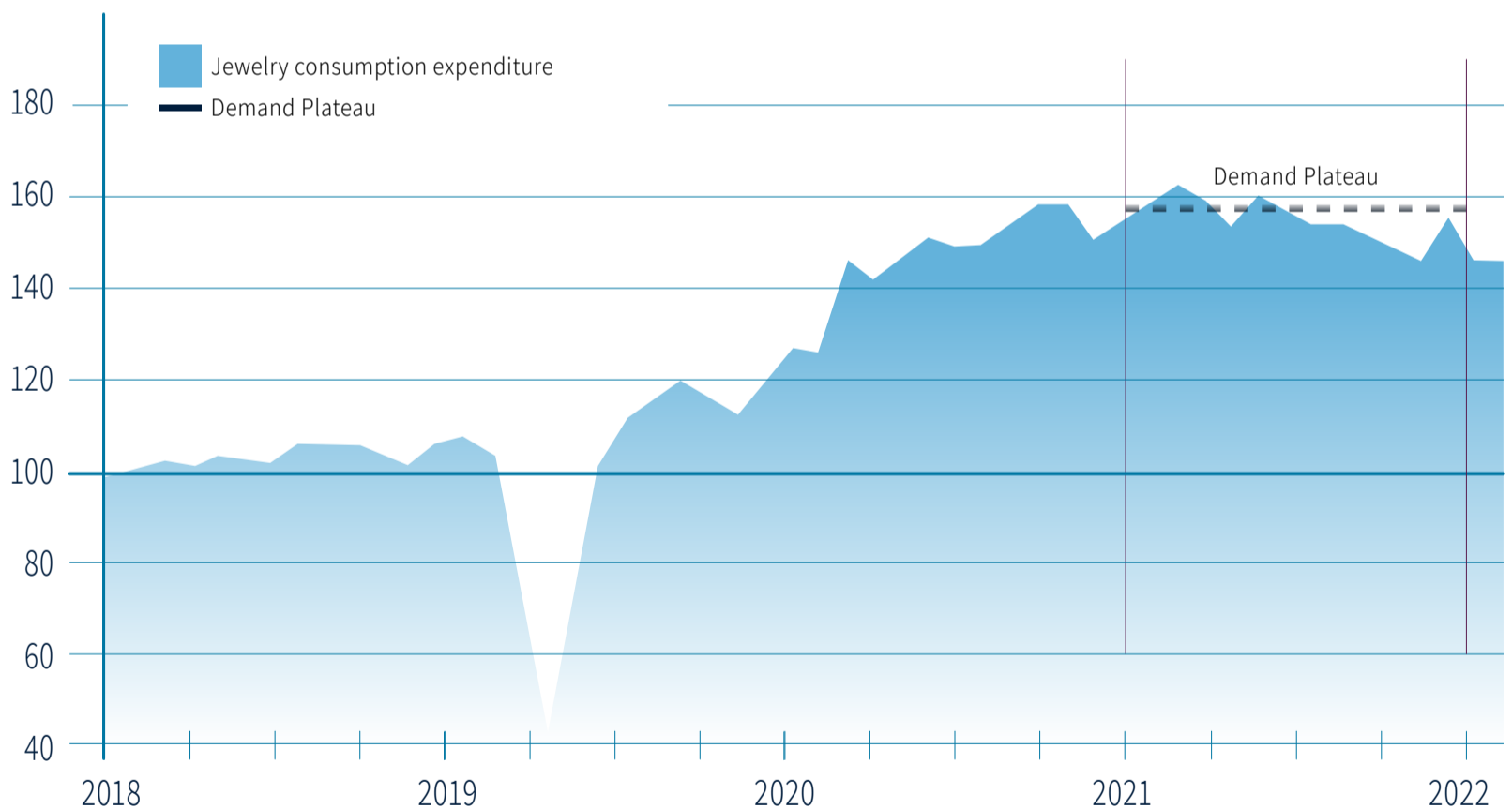
# 2022 MACRO TRENDS AND TRANSITION

Retail demand for diamond jewelry has been fueled in recent years by the US government's \$5.7 billion of Covid stimulus. More than half was handed out in 2021, driving demand for all goods, not just diamonds, well into 2022.

Data from the US Bureau of Economic Analysis clearly shows a year-long plateau in US diamond jewelry sales from September 2021. Sales then started to drop and are currently about 7% lower, a decline that was apparent by Q3 2022. The authors have written previously about the expected slowdown in the US retail jewelry market and its impact on rough and polished diamonds.

## Jewelry Consumption Expenditure Index

Source: Bureau of Economic Analysis, U.S. Department of Commerce



Demand actually exceeded expectations and the decline was lower than expected. Banking experts estimate that the US consumer used the stimuli to increase savings, but those savings are expected to run out by the end of 2023.

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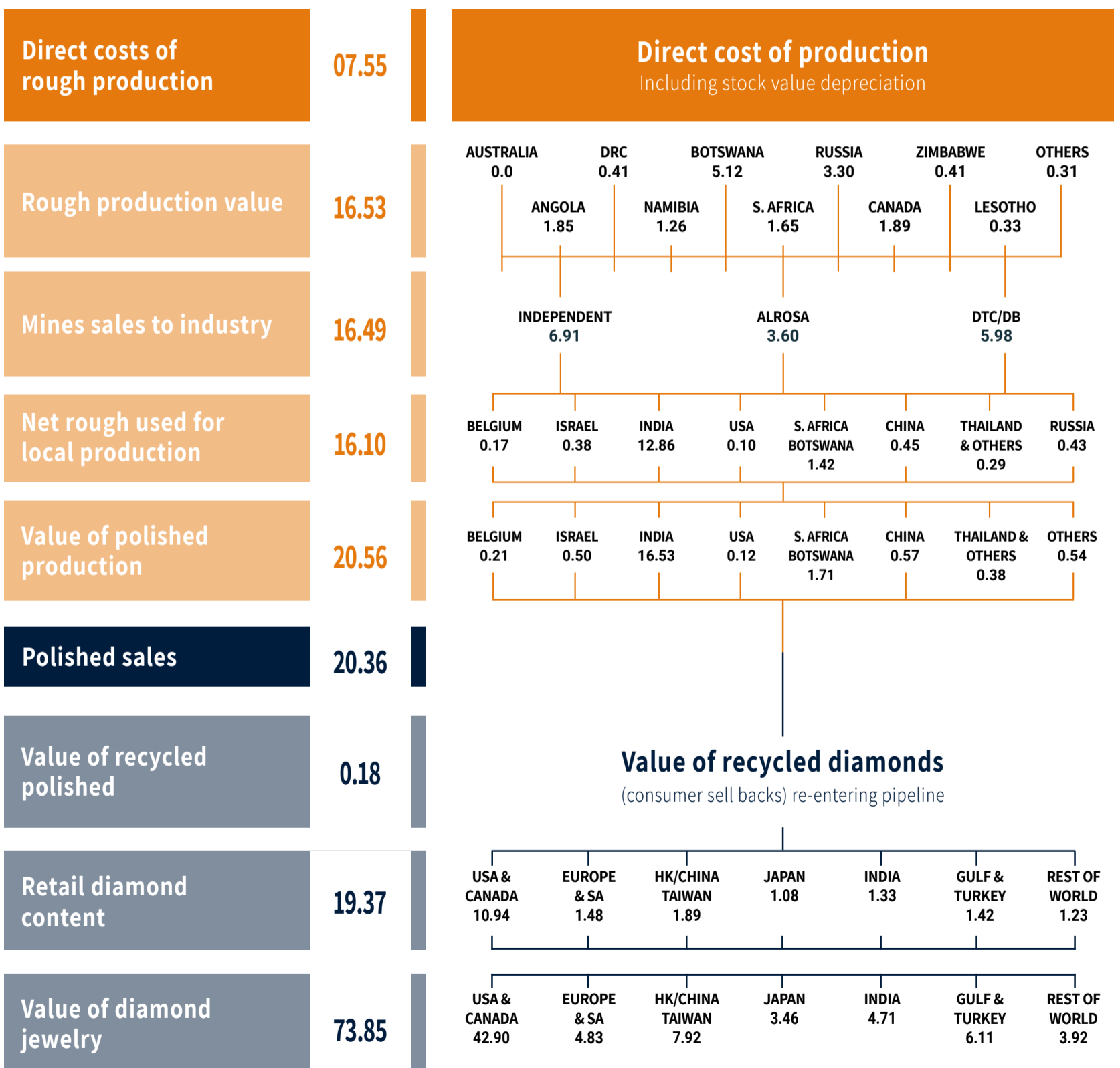


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MORE THAN DIAMONDS

## TACY'S 2022 DIAMOND PIPELINE

In US\$ billion | Prepared by Pharos Beam Consulting LLP



# NATURAL DIAMOND PIPELINE

High inflation, coupled with low unemployment, buoyed the jobs market in the US, despite the US Fed raising the interest rate by a record 4.25% in 2022. Inflation and salary increases boosted consumer confidence. Overall jewelry demand grew by about 3%, but demand for natural diamond jewelry actually dropped.

The US dollar also strengthened significantly during 2022, with the dollar index being up about 12% for the year. A higher US dollar adversely affects demand from countries with currencies not pegged to the dollar. Together they represent 35% to 40% of total demand.

In China and Hong Kong, demand for jewelry was severely affected by lockdowns imposed as part of the government's zero Covid policy. The overall economy also faced headwinds, as imports into the US were affected by both the growing tensions between the country as well as lower export orders due to geopolitical uncertainty. Hong Kong also had far fewer tourists from mainland China. Overall the market in the region contracted by nearly 20%.

India was one of the bright spots, with the market growing by nearly 7%. The economy remained strong, despite a weak rupee.

The overall global jewelry demand remained positive - about 1% higher at \$86.09 billion - despite weakness in some countries.

In the first couple of months of 2022, rough and polished demand and price increases rivaled those seen in the first half of 2008 and of 2011. However, these increases were clearly market exuberance.

The market for natural polished diamonds actually dropped as demand for lab grown jewelry cannibalized natural diamond demand. After accounting for the bull-whip effect of stocking, polished demand dropped by about 8% to \$20.36 billion.

## FRAGMENTATION OF

# ROUGH SUPPLIES

The Ukraine war, and the subsequent sanctions on Alrosa, helped the industry digest the excess purchases in the first couple of months as rough supplies were interrupted. As the industry recovered and new supply mechanisms from Russia were developed, the market was able to accept the supplies.

Rough diamond supplies, which had been very global in nature before the war, started to become fragmented. Large clients, based on political or societal compulsions, started asking mid-stream suppliers to ensure there were no Russian-origin diamonds in the goods supplied to them. The sword of sanctions by the G7 continues to hang over the industry to date.

This provided a boost for proponents of traceability and origin within the industry, which we believe remains an issue of cost. It will cost the midstream \$1 billion to \$1.5 billion to implement it across the pipeline. Small stones remain the challenge, mainly due to the sheer volume, with an estimated billion such stones polished every year. Customers willing to pay the price will be able to get the transparency they desire.

Overall, total rough production during 2022 was over 125m carats, with both De Beers and Alrosa increasing production for their respective reasons. In terms of value, total mine sales were about \$16.49 billion or about 6.6% above those in the previous year.

Polishing started to become unprofitable by the second half of the year, as demand dropped. After a highly profitable 2021, polishers were able to sustain some rough buying, in the hope that prices would moderate. This weakness continued into 2023, as polishers eventually started to reduce the amount of natural rough they put into production.





**LAB GROWN  
PIPELINE**  
FROM  
SUPPLY-  
LED TO  
DEMAND-  
DRIVEN

The structure of the lab grown industry is much more vertically integrated than its natural counterpart. Most of the new CVD capacity in India is by companies already in the natural diamond business. They polish most of their own rough, as opposed to CVD producers in other countries, which sell their rough to Indian polishers. HPHT technology-based rough is predominantly used for small diamonds in China, which has the infrastructure to produce industrial quality diamonds.

Companies with distribution capabilities not only polish their rough, they also produce and sell jewelry, set with their own lab grown products, direct to retail companies.

In many cases sales are on memo, as retailers are averse to taking risks with lab grown stocks. This vertical integration also means values are more dependent on internal transfer prices within the companies as they move through the various stages of production and jewelry. As a result, we have skipped a few stages in our lab grown Pipeline.

The lab grown industry had its own transition during 2022, shifting from a supply-led industry to a demand-driven one. In 2020 and 2021 the lab grown segment was growing its market share, as the market ballooned, leading to explosive growth. It sold almost everything it could produce during those years. Companies that had taken the leap of faith and invested in lab grown technology 3-4 years ago, benefitted from that growth.

By mid-2022, just as the retail growth in the US plateaued, lab grown production capacity increased but penetration in retail stores started to slow. More than two thirds of stores began carrying lab grows, leading to slower stocking demand. The bull-whip effect of the slowing stocking demand further impacted demand for polished lab grown diamonds. Prices across all polished lab grown categories dropped as a result by about 50% to 65% during the year.

The US accounted for over 82% of the retail lab grown jewelry market. While it is the main market for natural diamonds as well, the lab grown market share reached about 19%. It was initially expected that lab grows would fit into the fashion jewelry market. But that wasn't the case. They penetrated the bridal jewelry market first, driven by ever larger stones produced using the CVD technology.

Lab grown demand in other countries is still nascent. Consumers in China and India put more emphasis on resale value of the product, and have yet to wholeheartedly adopted lab grows. Overall, the retail jewelry market for gem quality lab grows is estimated to be about \$12.24 billion or about 14% of the total global retail jewelry market.

The total value of lab grown which was polished globally is estimated at around \$2.78 billion, with most goods polished in India due to the lower labor costs. Most smaller stones are polished in India, although a few producers polish larger stones elsewhere.

Gem quality rough producers are more evenly distributed. China produces the most carats due to its greater reliance on HPHT technology, but India has seen some of the largest investment in new CVD capacity, with many natural diamond companies diversifying into lab grows. Indian banks have also been more open to financing the establishment of lab grown production facilities.

US production is dominated by three or four companies, including De Beers, which has its facility there. These companies currently seem to be the leaders in terms of production technology.

Gem quality lab grown production is estimated at \$1.38 billion. There could be valuation differences in this estimate, as in many cases these are internal transfers with the companies. Total lab grown production is estimated at about 26 to 28 million carats.

The authors have previously stated their strong belief that lab grows are not a diamond business and that it regarding them as a separate business could lead to better business management. As the lab grown market transitions from a seller's market to a buyer's, extra-normal profits from the lab grown pipeline will disappear, leading to eventual consolidation within the sector, as companies combine to stay afloat and stay relevant. Vertical integration can maximize benefits of planning efficiencies.

# LAB GROWN

## TACY'S 2022 DIAMOND PIPELINE

In US\$ billion | Prepared by Pharos Beam Consulting LLP



Note: The Lab Grown pipeline only considers the gem quality lab grown diamonds and does not cover the diamonds grown for industrial purposes.

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# LAB GROWN INDUSTRY VICTIM OF ITS OWN SUCCESS

In the US bridal market, retailers sold larger lab grown stones as a same-price alternative to smaller natural stones. Retailers were able to capture the same consumer spend, while making much better margins (up to 70%) on the products. Happy customers felt they'd got an upgrade. That explains how lab grown stones have penetrated over 25 per cent of the bridal market. But this approach can cause longer term problems.

As lab grown diamond prices continue to fall, retailers now need to sell bigger lab grown stones than last year – to reach a similar transaction dollar value. This has a potential to leave older customers very dissatisfied. Retailers who may have made false promises about lab grown stones should beware. It may not take long for some enterprising lawyer in the US to file class action lawsuits against retail jewelry companies for mis-selling lab grown stones.

Retailers have also benefitted from drops in wholesale lab grown prices, leading to better margins. In 2023, price wars are likely to extend into the retail space. All you need is a large retailer or online seller to come out with aggressive price points for lab grown staple products (like studs or solitaire rings) to trigger a price war.

Ultimately, retailers focus on their gross margin per square foot. Slashing prices, even with better margins, means they'd need to sell many more pieces to make up for the loss in value. This might not be easy, especially when highest value sales have been in bridal jewelry, and a decline in weddings and engagements is expected this year.

Lab grown jewelry margins and profitability ratios are likely to achieve parity with natural diamond jewelry within a couple of years, but retailers will now need to sell much higher volumes (or significantly larger sizes), to even maintain their gross income.

## INFLECTION

There was great fear and anxiety in 2014-2016, as parcels of natural diamonds “peppered” with lab grown stones started appearing in the midstream. With the advent of reliable and affordable detection machines, those fears and anxieties subsided. De Beers' Lightbox foray gave the lab grown industry the credibility it craved and opened up the path to the growth seen in the last few years.

Companies that started dealing in lab grown diamonds and jewelry are now seen to have made a smart choice. Disclosed lab grown stones are now part and parcel of an industry that has passed its inflection point. In fact, the volume of polished lab grown stones >0.2 carats (i.e., pointers and above sizes) produced, exceeded the production of polished from natural diamonds for the first time last year.

Market growth in 2021 masked the real damage it had suffered – something the authors lamented in the 2021 Pipeline. The diamond industry was, at the time, living in hope that lab grown stones would find their own level in the market both in terms of price and market segment. And that natural and lab grown diamonds could co-exist and grow in their respective areas. Was this consensus view realistic, or were the initial fears and anxieties about lab grown stones actually justified?

## TIPPING POINT

The diamond market, both natural and lab grown, is based on the fundamental assumption that consumer desire for diamonds will continue. That desire stems from the perception of diamonds as a luxury. Given the current situation, we need to question whether that perception of diamonds will continue in the future.

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*“The DNA of luxury, therefore, is the symbolic desire to belong to a superior class, which everyone will have chosen according to their dreams, because anything that can be a social signifier can become a luxury. By the same token, anything that ceases to be a social signifier loses its luxury status.”*

*quote from [The Luxury Strategy: Break the Rules of Marketing to Build Luxury Brand](#), by Kapferer, J.N. and Bastien, V.*

Natural diamonds have always been seen as the symbol of luxury. The biggest and the brightest of them have been flaunted by royals and celebrities, and wars have been fought over their possession. Diamonds became the ultimate symbol of wealth and power, the ultimate social signifier.

This aspirational nature of diamonds was cultivated by De Beers through over 80 years of marketing campaigns and by limiting supplies through the cartel system (limiting supply of products is equally important to retain their perception of luxury). Establishing a bond between diamonds and emotional moments in the consumer's life, together with the “three months' salary rule” for wedding rings cemented their position as a social signifier.

The wider availability of smaller and lower quality diamonds (the so-called Indian gem quality) democratized diamonds. But larger and higher quality stones retained their luxury appeal due to their continued scarcity. Just as luxury brands offer lower-priced accessories so that consumers can experience the brand, lower-priced jewelry allowed consumers to experience and build up their diamond dream. The size and quality of diamonds worn became a social signifier.

The industry has been confronted with the vagaries of demand and supply in the two decades since the De Beers cartel dissolved. Diamond prices initially stagnated and have actually fallen by over 25% since their 2011 peak, despite Covid-induced price rises.

Lab grown inroads to the larger stone market have threatened the very status of diamonds as a social signifier. Our office secretary was overjoyed with her hybrid jewelry (and would even have been smiling with lab grown jewelry). Lab grows have made large diamonds accessible to the middle classes, and in doing so they have challenged the very notion of diamonds as

a social signifier. This will have implications for not only natural diamonds but lab grows as well.

We believe that in the next year or two, consumers will be able to buy a pair of earrings – each with two 5-ct solitaire lab grown diamond studs – for less than \$2,500. The natural diamond equivalent would cost 100 times as much at today's prices.

Look what happened to Coach handbags or Ralph Lauren clothes when they became more widely available, and regarded simply as a premium product, rather than a luxury. Such easy availability could threaten the very notion of a diamond being a luxury. To again quote from the Kapferer and Bastien book: **“Luxury objects are objects of luxury brands. Only diamonds are luxury objects appreciated without brand. What counts is their size and purity. For everything else, there is no luxury without brands: even an emerald is ‘from Colombia’, a ruby ‘from Burma’, a caviar ‘from Iran’.”**

The worst-case scenario is that we reach a point when any diamond jewelry is automatically assumed to be lab grown. Diamond size would no longer be a social signifier. And without visible branding, the diamond would have no aspirational value. Will celebrities still want to flaunt their diamonds when they no longer signify wealth? Will our secretary still be as pleased to get hybrid jewelry? Will this be the end of the diamond dream?



# STORES CLOSING BUSINESS SHRINKING

The impact of the tipping point, i.e. diamonds not being considered a luxury by consumers, will be felt right across the chain, from retail to rough and by both the natural and lab grown diamond pipelines. Consumers will still buy diamond jewelry, both lab grown and natural, but price points and volumes will be much lower. Consumer desire for natural diamonds will shrink. Most buyers will be perfectly comfortable buying lab grown jewelry, with price points similar to other accessories.

Many retailers would, as a result, end up selling predominantly lower-priced lab grown jewelry. They'd need to sell far higher volumes to achieve the same gross margin dollars. This would pile the pressure on retail jewelry shops and could spur a fresh round of store closures in the US. In China and India the retail impact would be less severe, as they mainly sell gold jewelry.

Luxury brands would, however, carry on buying natural diamonds and paying the prices. Maintaining their image, and the perception that they use only the best materials, would outweigh any savings. But their loyalty to natural stones would account for only a fraction of total supply, and only in very specific areas.

In extreme cases, there could be a single flat price for polished diamonds, regardless of whether they're natural or lab grown.

Certifying lab grown diamonds would become irrelevant, and the business of certifying larger natural stones would also shrink. With average prices at \$150 per carat or less, it would be uneconomical to certify polished lab grown diamonds.

The mid-stream may, at least superficially, appear to be the most resilient. All diamonds, regardless of origin need to be polished. But that may not be the case. The cut-throat competition for lab grown diamonds could bring down labor costs, with a per-piece rate above a certain size. With low rough prices, speed and cost become much more important than polishing yields. Machines would be used to polish CVD stones, and the lower volume of natural stones would not be able to sustain the current number of polishers.

Mining would see the greatest disruption. Mines with high operating costs or a product mix skewed towards smaller diamonds would face closure, leading to a drop in natural carat production. It would become impossible to finance new mines or upgrade older mines, leading to the gradual tapering in natural diamond production. Recycling of diamonds from the consumers could become the largest mine.

Growers too, would have to compete to ensure the lowest cost of production, or be priced out of the market. Over time, growing would adopt a cost-plus model for the pricing of rough.

This is an extreme, nightmare scenario. The reality may not be quite so bad, but it could well be worse than our existing assumptions.

*“Diamonds prices initially stagnated and have actually fallen by over 25% since their 2011 peak, despite Covid-induced price rises.”*

# 2023 PROJECTIONS

In 2022 itself, we forecast tough times for the industry in 2022. We believe the rest of 2023 will be tough, but we predict some respite in Q4. Assuming a mild US recession and a flat Chinese market, we expect the global natural diamond jewelry market to slow by 5%. To put this in perspective, the 2008 crash saw retail demand fall by 10% to 12% globally. But a deep US recession, rather than a mild one, could be catastrophic. A 5% drop in global natural diamond jewelry translates into a drop in polished demand of 11% - or about \$18.1 billion in sales. This also means that the rough market will be down by nearly 20% - to about \$13 billion of rough sales. The industry should batten down the hatches and wait out the storm.

We believe mines currently have built-up stocks of about \$1 billion. They would need to drop prices or reduce production to work through those stocks.

## CONCLUDING REMARKS

The current fall in demand for diamonds is nothing but a market cycle, albeit a severe one. The industry shored up its balance sheet during the last few years and should be able to weather the downturn - unless there's a severe recession.

For the lab grown industry, this is the first downturn in its relatively short life. It might be more difficult for companies that have either invested heavily or are leveraged. Margins will continue to come down and are likely to remain low. Lab grown retailers in the US will probably face their year of reckoning, as falling prices erode top lines.

The real concern remains whether customers will continue to perceive diamonds as a luxury. That is why we believe that our third category of hybrid diamond jewelry may halt, or even reverse the erosion of faith in our product. If that faith wavers, both the natural and lab grown industries will suffer. The day when consumers no longer aspire to own a diamond, if it ever comes, would be the death of the diamond dream.



Pranay Narvekar



Chaim Even-Zohar