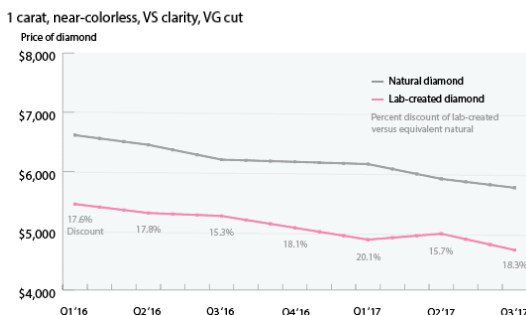


**Marketing – miners have the upper hand.** Man-made diamonds as jewellery are marketed as less expensive alternatives to mined diamonds that are sourced in a more eco-friendly and socially conscious way. However, we believe that the cultural significance of natural diamonds and the miners’ better-established presence in the diamond industry give miners a significant advantage at the moment. Some of the major competitive factors include the following:

- **Price – man-made polished diamonds are ~15%-40% less expensive.** At the moment, we are not convinced this discount is sufficient to entice a typical consumer to switch to a product that is less well established, particularly for a major gift purchase that has an emotional element (e.g., an engagement ring). However, we could see this discount increasing as production technology improves. That said, it is possible that even the current discounts are not sustainable (most producers are private companies and it is unclear whether they are currently profitable).
- **Product awareness – man-made diamonds are often confused with simulants.** Man-made diamonds are frequently referred to as “synthetic”, which often leads to the misconception that they are not actual diamonds. In the United States, man-made diamonds must be referred to in marketing material as “synthetic diamonds,” “laboratory-grown diamonds,” or similar terms (which aren’t overly enticing).
- **Promotional effort – miners are better financed and co-ordinated.** The DPA’s initial focus appears to be aimed at promoting the qualities of “real” diamonds, particularly to North American millennials, through its “Real Is Rare” campaign. In contrast, we do not believe lab-based producers currently have a highly co-ordinated (or well-financed) marketing strategy.
- **Distribution – incumbents have an advantage.** Miners have the upper hand over the producers of lab-grown diamonds because of their historical (and contractual) relationships with (and influence over) the downstream customers that control the distribution of the product – for example, major producers may be able to reduce rough-diamonds sales to customers that deal in man-made stones.
- **Re-sale value – no market for man-made diamonds.** To our knowledge, there is no active re-sale market for man-made diamonds, whereas used natural diamonds typically are readily saleable, often for close to the full market price. Perceived value may be a key decision factor for many consumers.
- **Perception of source – man-made diamonds can be sold as more “ethically sourced.”** Some consumers have negative connotations of the natural-diamond supply chain, such as environmental and social concerns related to mining, and even negative feelings toward the historical De Beers monopoly. Man-made diamonds may resonate with consumers on this basis (even if the facts may not fully conform to this perception). De Beers is developing a blockchain platform to track diamonds through the pipeline, which could help address uncertainty over a diamond’s origins.

**Exhibit 14: Man-Made Discount to Natural Stones**



Notes: Data gathered via sampling of online retailers starting at the end of March 2016. Percent discount is based on lab-created diamond versus equivalent natural diamond in the same period in U.S. dollars. Quarter marked at the end of the period, except for Q3'17, which is as of August 24, 2017, and assumes continuation of trend through the end of the period.

Source: Paul Zimnisky Diamond Analytics.

**Exhibit 15: Natural Diamonds vs. Man-Made Diamonds**

Competitive Factor	Natural	Man-made
Price	High	~15-40% lower
Product awareness/terminology	High	Low
Promotional effort	Well-financed/coordinated	Limited/ad hoc
Distribution network	Well established	Limited
Re-sale value	Relatively High	No
Ethically-sourced? (typical consumer perception)	Maybe	Yes

Source: Scotiabank GBM.