DPA - Accurate Pricing Without an Appraisal

Supply and demand economics may seem simple, but as any seller knows, it can take a good deal of trial and error before finding the sweet spot. After a successful pilot with the Israel Diamond Exchange (ISDE), the DPA has proven itself to be one of the most accurate, data-driven, fully-automated pricing algorithms.
Our Diamond Pricing Algorithm helps alleviate any price-related anxiety, from both the seller's and buyer's sides. By tracking daily purchase prices and movement of the Diamond Financial Index, we provide a reliable, data-driven benchmark of any diamond's perfect price point, an unprecedented level of transparency that assures fairness on all ends. The Carats.io DPA for the first time, allows diamond dealers to use a sophisticated machine - learning based to accurately assess the value of their inventory.

The DPA has already priced over $1 Billion worth of diamonds!

Standardization
algorithmically discover the true market value of any diamond.

Tokenization
redeem usable tokens based on its market value.

Commoditization
use tokens to get a first time exposure to the diamond industry.

The Carats.io system incorporates the following components:
Carats.io streamlines price discovery by restricting inventory to diamonds certified by Gemological Institute of America.

Parameters of Pricing

Up until the 1920s, even those working in the jewelry industry had only a rudimentary understanding of precious stones. In 1931, to remedy this pervasive problem, the GIA was established as a nonprofit to train and certify jewelers, formulating the first set of modern standards for diamond grading. Today, the institute serves to protect both buyers and sellers of gemstones with an agreed-upon set of standards, and GIA certificates maintain their decades-old reputation as the most highly regarded qualification for diamond pricing.

Unlike grading systems devised by active gemstone suppliers, GIA certification is entirely impartial and uninfluenced by market forces.

GIA certificates evaluate the 4Cs of traditional price-list metrics (carats, clarity, color, and cut), as

well as aspects such as girdle, fluorescence, polish, and symmetry.

The Carats.io algorithm parses all grade parameters against well-known economic measures using sophisticated tools of statistical analysis, creating the most advanced and precise pricing methodology to date.

Our 14 pricing parameters are:

Ce

Certificate
Grading certification from the Gemological Institute of America.

Ca

Carat
Weight measurement. One carat is the equivalent of 0.2 grams.

Co

Color
Color grading. White diamonds are given high ratings for colorlessness, while colorful diamonds are rated based on intensity and purity.

Cl

Clarity
Imperfection grading. A high clarity or 'flawless' diamond won't have blemishes or inclusions that disrupt the flow of light.

Cu

Cut
Design grading. The man-made aspect of a polished diamond is graded for its proportions and design finish.

S

Symmetry
Symmetry measurement. A grading subsection of a diamond's cut, which refers to the alignment of its facets to one another and to its girdle.

S

Shape
Diamonds have both traditional and innovative styles, and the value of a diamond is influenced by its relation to conventional shapes.

Po

Polish
Polish grading. When cut, diamonds are polished smooth, to varying levels of quality. Over time, this smoothness can be further diminished by wear and transport.

Fl

Fluorescence
Ultraviolet glow. Certain high-quality diamonds may emit a soft glow under black light. This unique aspect can influence a diamond's value.

Gi

Girdle
The outer edge of a diamond. The girdle can range from thin to thick, and the valuation effect of a girdle's thickness exists in relation to the diamond's overall shape.

Cu

Culet
A small facet on the bottom of the diamond that protects the stone from chipping. Modern diamonds tend towards smaller culets or having no culets at all.

D

Depth
Refers to the height of a diamond, along with the ratio of height to diameter. Certain shapes differ in their desirable depth ratios.

T

Table
Refers to the width of the top area of a diamond, along with a ratio of the top area to the total diameter. Certain shapes differ in their desirable table ratios.

Co

Country
The diamond's country of origin. Regional rarity and history can affect diamond pricing.

Hedonic Regression

Hedonic regression breaks down a given good or service according to its individual components and allows us to assign value to each disparate part and provide a well-rounded assessment of the actual market price of that good or service. By definition, the word “hedonic” refers to pleasure; with hedonic regression, economists estimate the perceived pleasure derived from any one aspect of that good or service.

Particularly because diamonds are a popular consumer jewelry, the hedonic pricing method is well-suited to successfully assess their aesthetic value. Diamonds are priced according to numerous value-affecting qualities, and the aggregate value of a stone is set based on each individual quality, as well as the relationality of those qualities. For instance, certain shapes are more desirable in certain colors.

With Carats.io, each of these various characteristics is traceable with data readily supplied by our strategic partners. We begin by analyzing data on more than 250,000 unique GIA certified diamonds, then continuously monitor the daily breadth of market transactions, i.e. what diamonds with what grade parameters sell for what amount. We then use regression analysis to determine not only how these relational diamond qualities affect price, but furthermore, to assess the positive or negative effects on price by pair dynamics of grouped characteristics. We use this sophisticated system to understand the relationship between diamond qualities — for example, when a price-boosting characteristic shows no positive pricing effects when co-present with another particular parameter. In this respect, Carats.io demystifies relationships between grade and demand, a complicated correlation currently only understood by experienced appraisers or market analysts. By formulaically unraveling these knotty connections, our algorithm can uncover new and emerging correlations between diamond qualities.

While initial Carats.io training data consistently outputs accurate pricing, our system is built for improvement. Our machine learning algorithm updates itself as it gathers new data, allowing it to produce increasingly accurate price outputs.

The Carats.io Diamond Pricing Algorithm is among the most advanced pricing algorithms currently on the market. It has been assessed by industry experts and approved by a special examination committee.

Modeling Parameters for Regression

Despite its name, achieving linear pricing isn’t exactly straightforward. In fact, it takes a decent amount of mathematical adjustment to properly price the precious stones.

The Carats.io Diamond Pricing Algorithm uses a Taylor series to transform the complex regressions described above into a linear pricing structure. This way, we’re able to define these complicated, nonlinear relationships between diamond qualities with an easier-to-understand polynomial-based price.