



Valuation of Diamonds

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Consultants Ltd.**

Gaborone, July 2007

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WWW International Diamond Consultants

- Independent consultants to the diamond industry
- Formed January 1996 by Richard Wake-Walker and Charles Wyndham
- Neil Buxton joined in 1998
- Over 100 years industry experience



WW's Services

- Developments in the diamond world
- Supply / demand scenarios
- Price Forecasts
- Diamond valuation and modeling services
- Instruction and training in sorting and valuing diamonds
- Marketing consultants for rough and polished diamonds
- Tender diamonds from Letseng and Cempaka



The Lesotho Promise





WWW's – Government Work

- DICAN - Federal Government of Canada (DIAND)
- Democratic Republic of Congo
- The Gokhran of Russia
- Almazjuvilirexport
- UK Foreign Office
- South African Diamond Board
- Royal Canadian Mounted Police
- Geological Survey of Finland



Clients including

Aber Diamonds
AfriCan Mining
Alexkor
ANZ Bank
Archangel Diamond Corp.
Ashton
BM Diamond Corp.
Brazilian Diamonds
CIBC
Contact Diamonds
Consolidated African Mines
DiamonEx
Dubai Multi Commodities
Centre
European Diamonds

Falconbridge
Franco Nevada
Gem Diamonds
Global Witness
Kensington Resources
Lesotho Diamond Corp.
Letseng Diamonds
National Bank Financial
Norton Rose
Partnership Africa Canada
Mine Gem
Mountain Province
MPH Consulting
Namakwa Diamonds
Peregrine Diamonds

RBC
Rhonda
Rio Tinto
Scotia Bank
Shore Gold
SLDC
Southern Era
Tahera
TD Newcrest
Teck Cominco
Tiffany
Uralkali
Winspear



Diamonds are Different

Question:

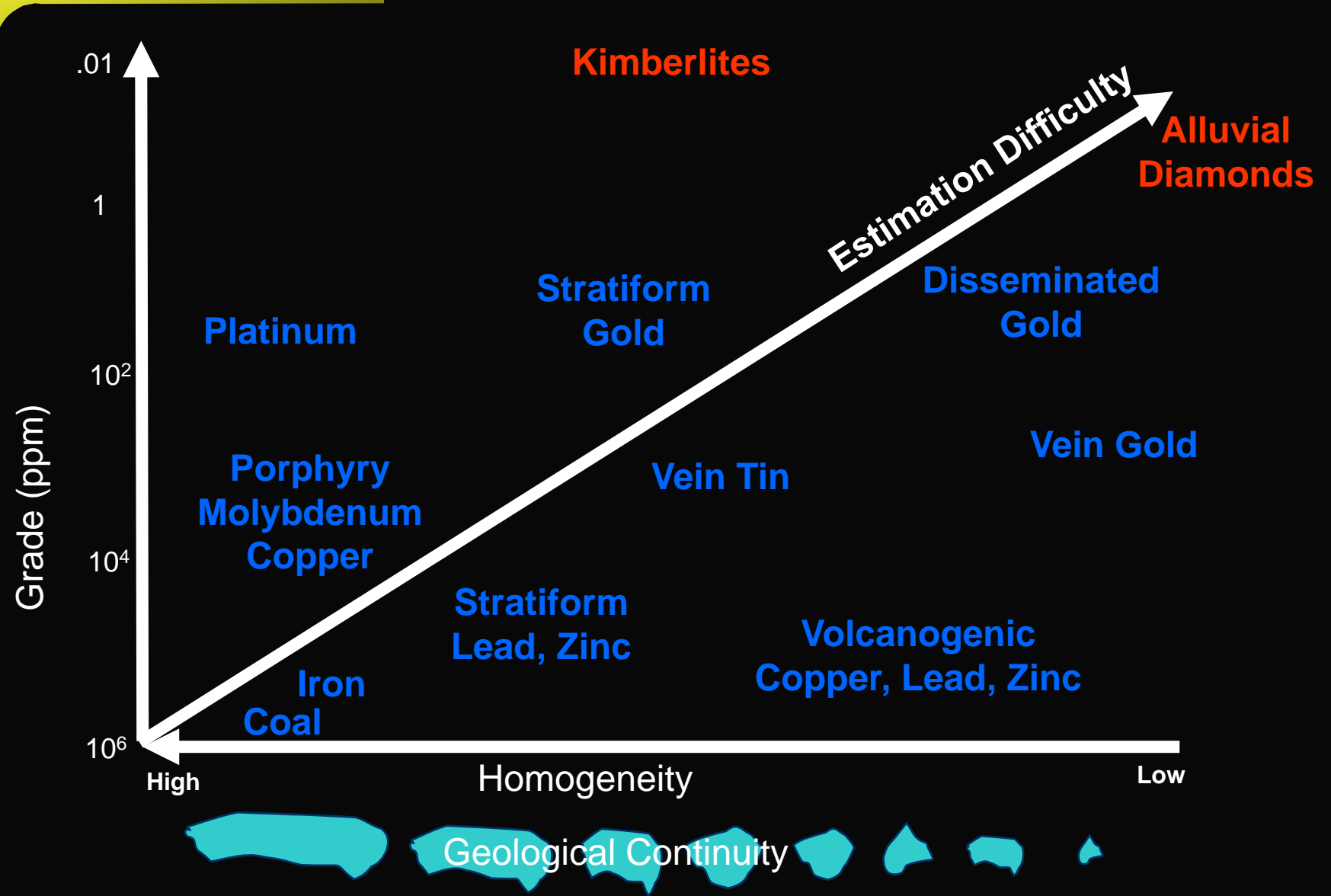
In a diamond mine when would an increase in the average price (\$ per carat) have a negative impact on the mine's economics?





Valuation and Modelling of Bulk Samples

- Ashton
- Brazilian Diamonds
- Contact Diamonds
- DiamonEx
- Diavik
- Falconbridge
- Gem Diamonds
- Gope Exploration
- Kensington
- Tahera
- Snap Lake
- Shore Gold
- Peregrine Diamonds

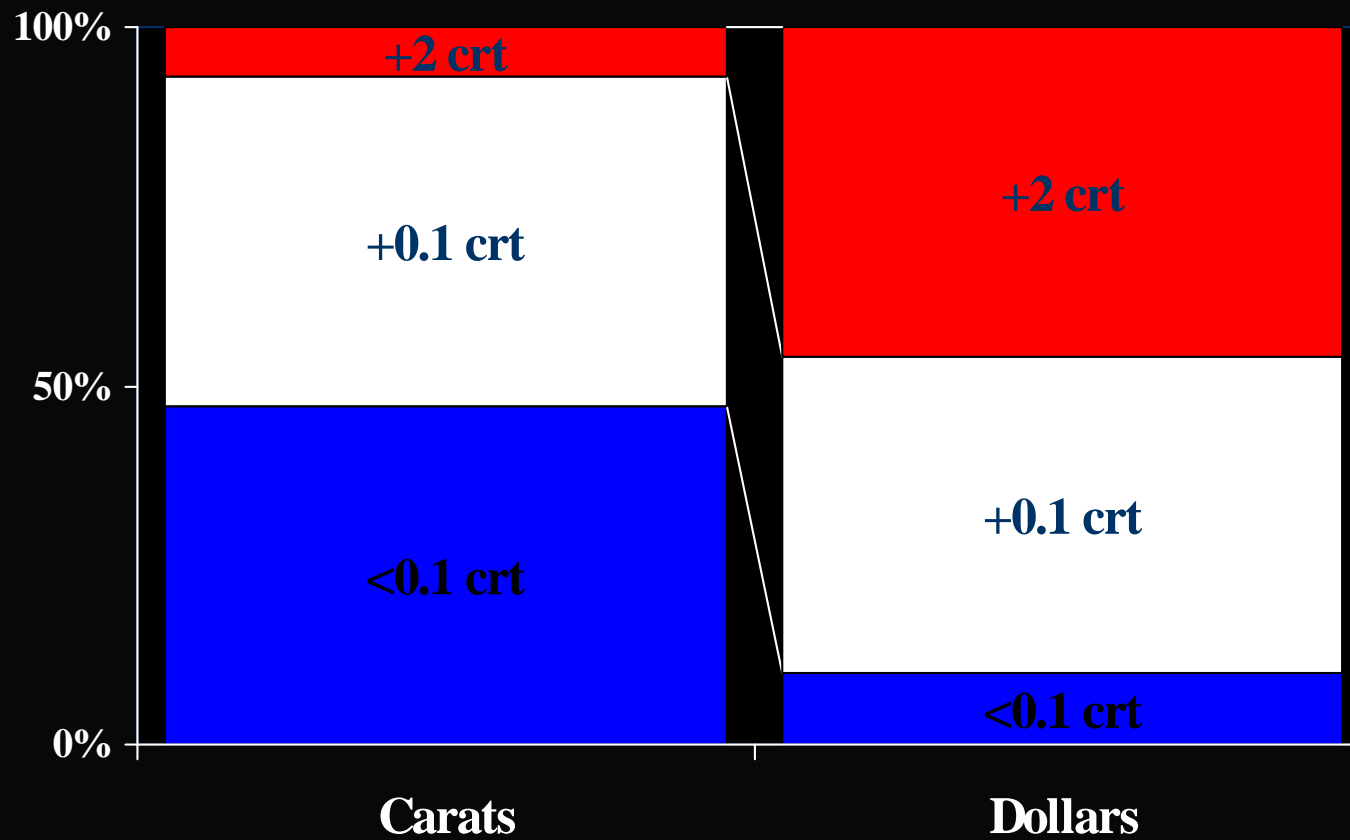


Source: De Beers

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A Carat and Value Profile



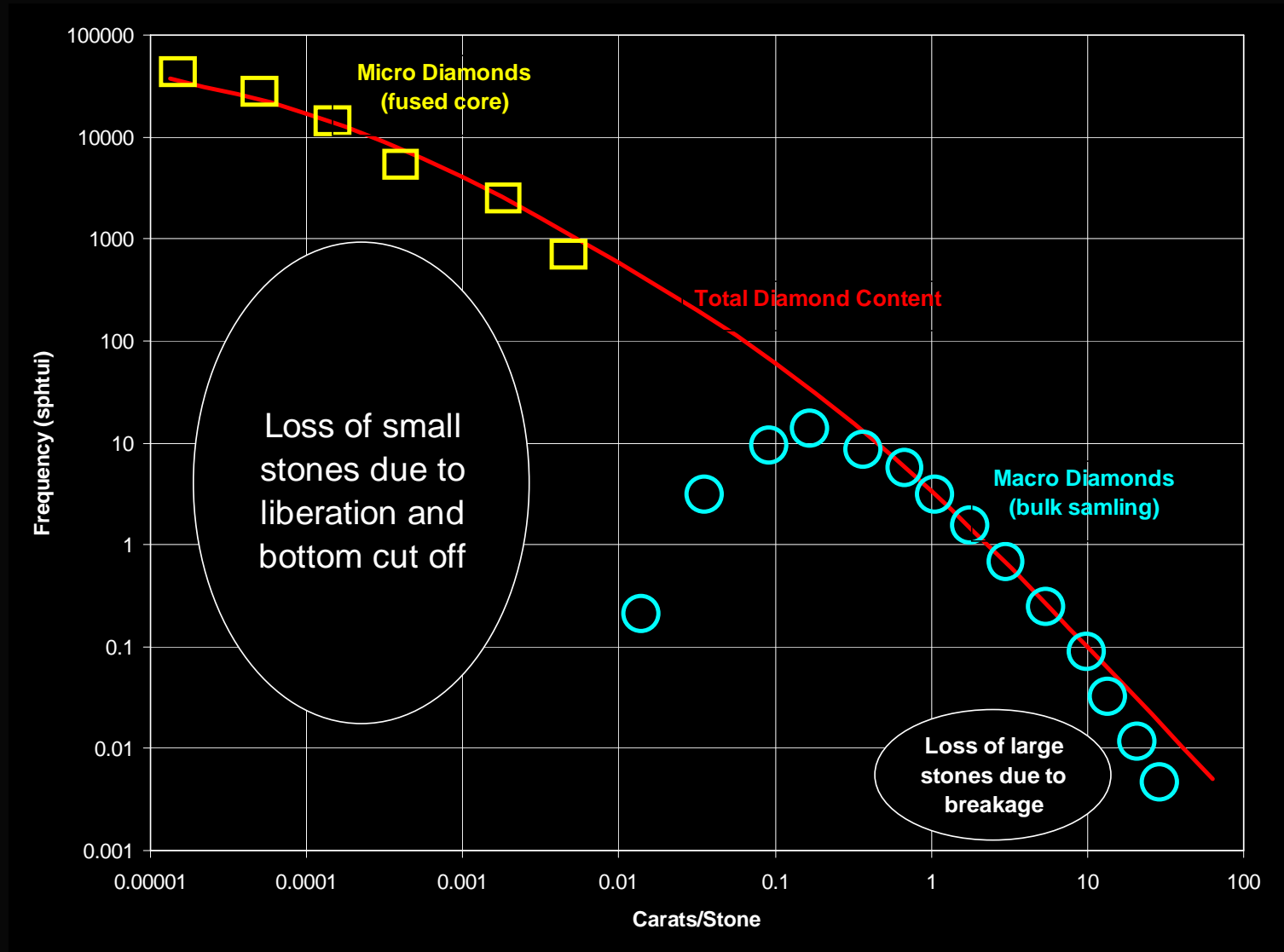


Stages of Diamond Sampling

Indicator Minerals		Indicates diamond potential
Initial Sampling	200 kg	Micro diamonds recovered to indicate grade (crts/tonne)
Mini Bulk Sample	200 cts	Confirm macro grade (crts/tonne) Initial value estimate (\$/crt)
Bulk Sample	2000 cts	Confirm value estimate (\$/crt)



Micro-Macro Relationship



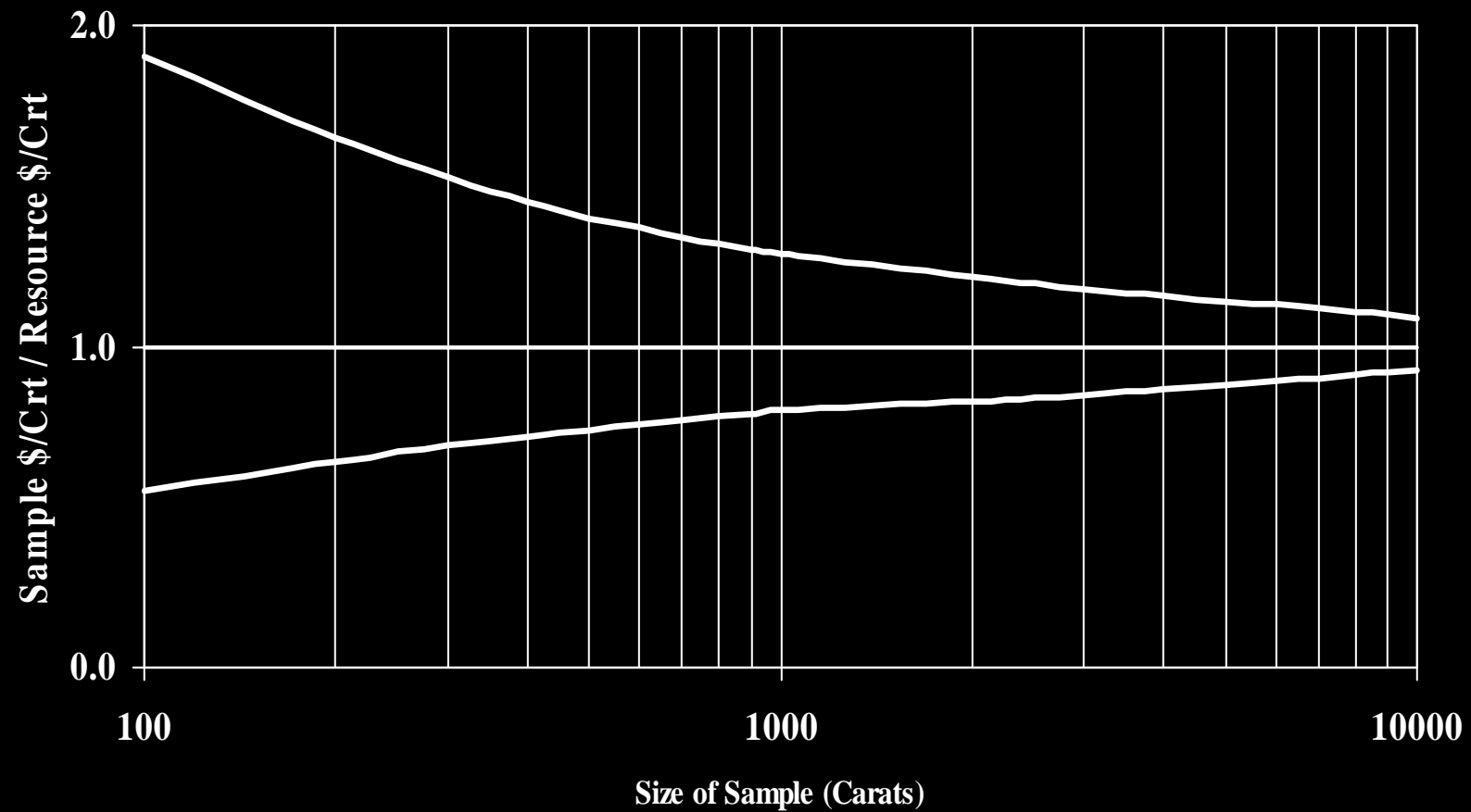


Revenue per Tonne

$$\begin{array}{ccccc} \text{Dollar} & & \text{Carats} & & \text{Dollar} \\ \text{per} & = & \text{per} & \times & \text{per} \\ \text{Tonne} & & \text{Tonne} & & \text{Carat} \end{array}$$



Confidence Limits in the Sample \$/carat





Average Price (\$/carat)

Two components:

Size Frequency Distribution
(no. of carats per size class)

Value Profile
(\$/carat per size class)

Both need analysing and may require modeling

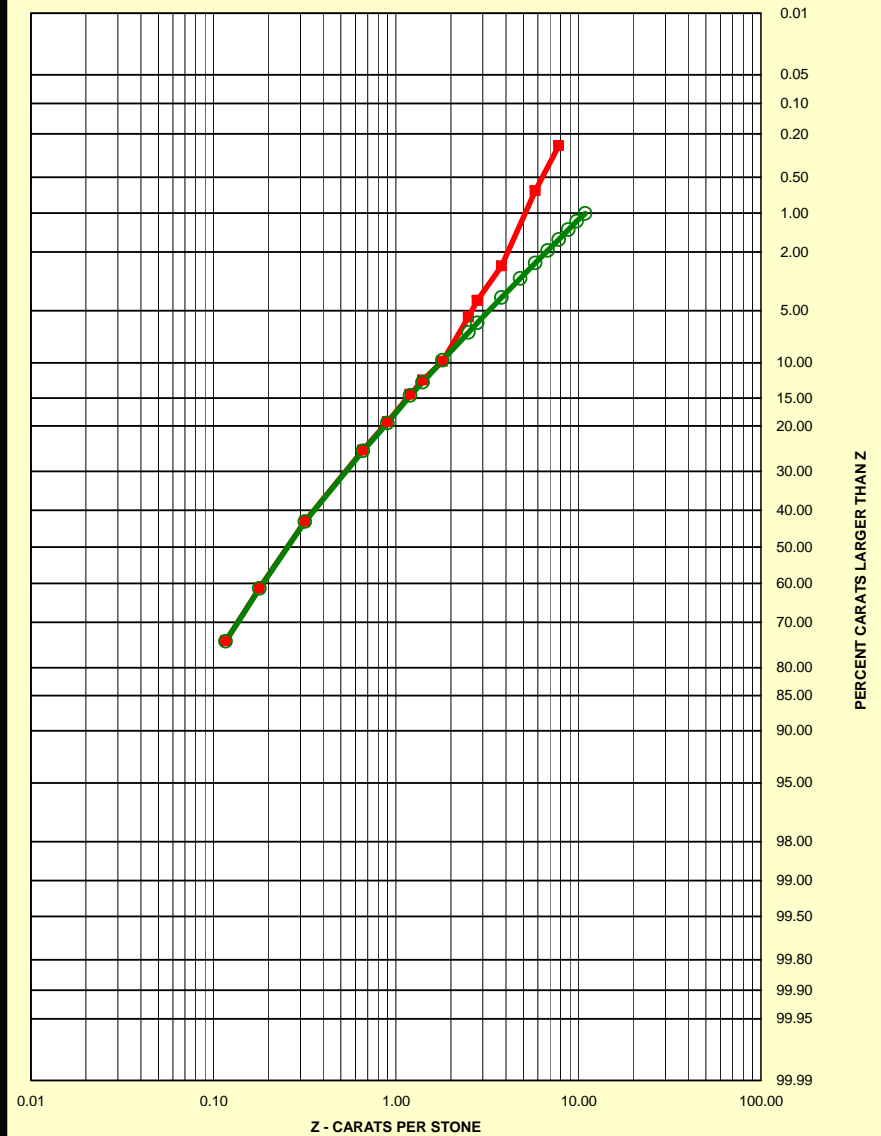


Size Frequency Distribution (SFD)





Size Frequency Distribution (SFD)

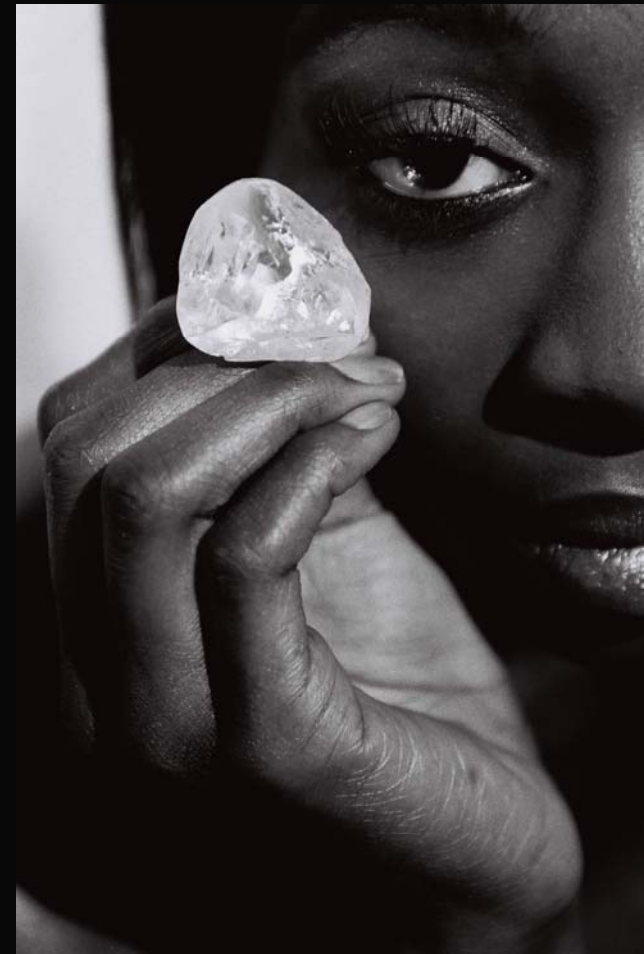




Incidence of Large Stones

- Diamond breakage
- Security
- Size of sample

- Model is important for crusher gap settings and upper screen size decisions





Recovery of Small Stones

- Bottom cut-off used in sampling
- Liberation characteristics
- Process efficiency
- Model is important for bottom cut-off decisions





Modelling the SFD

- Model both the large stone and small stone recovery
- With this model commercial decisions regarding bottom cut-offs and crusher settings can be taken



Micros vs Macros

- Valuation of micro diamonds is virtually meaningless
- Shape colour and quality can be totally different
- Need macro diamonds to estimate the \$/carat

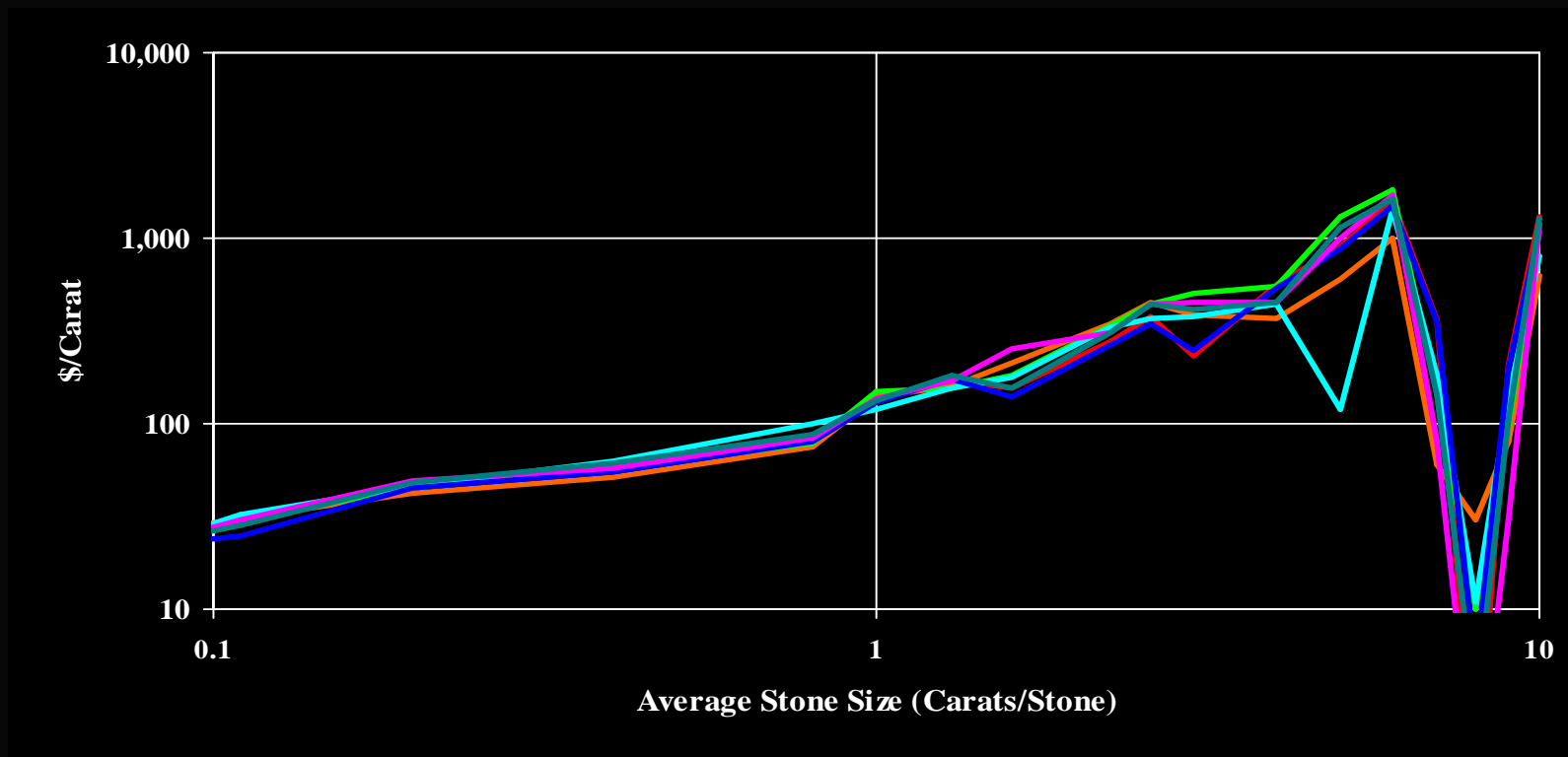


Valuation of the Sample

- Number of different independent valuers
- Diamantaires values reflect their areas of expertise
- Valuers must understand what value is required
- Variable results



Different Independent Valuators





Why the Variability?

- Valuing diamonds is not scientific
- There is no benchmark
- Areas of specialisation

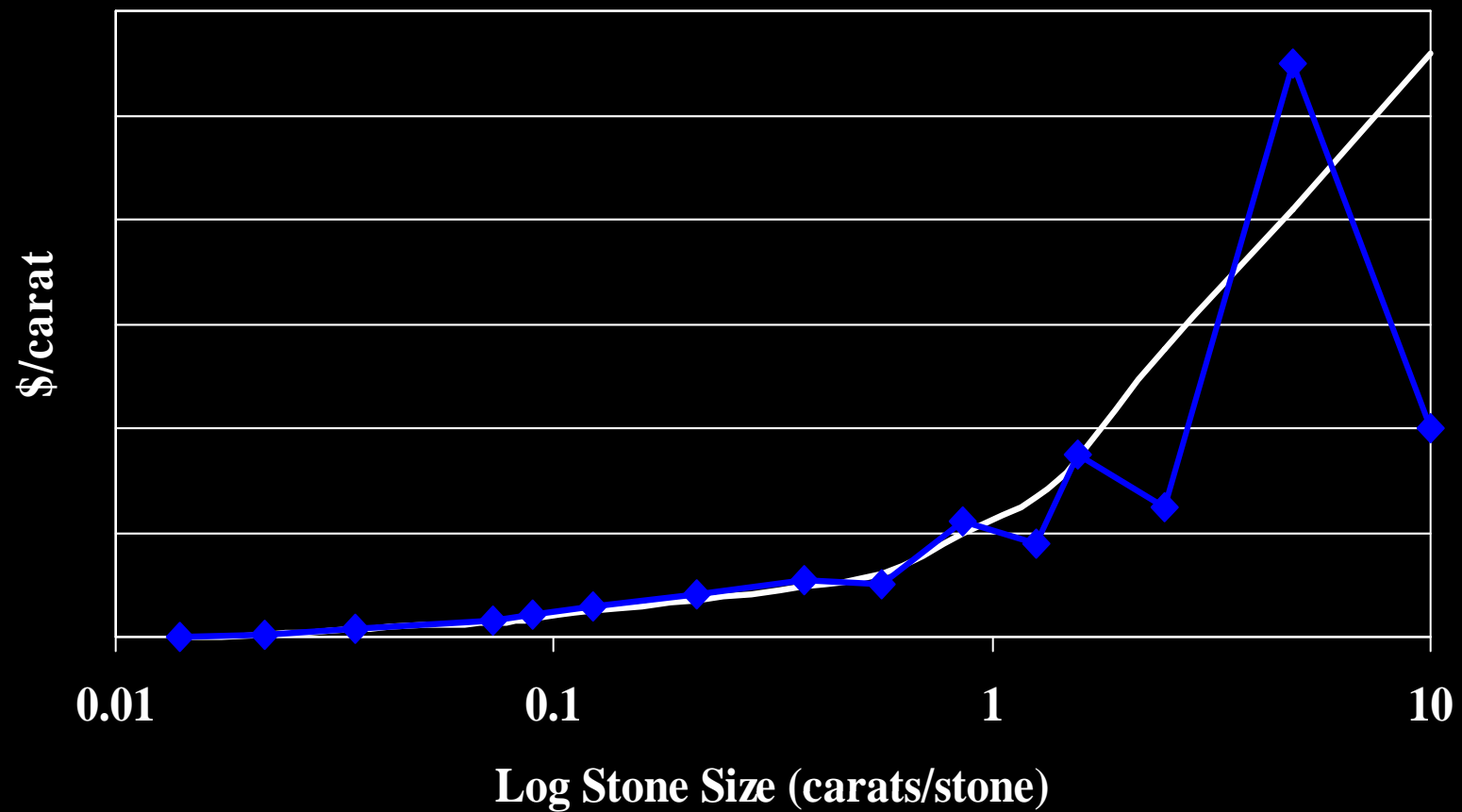


Price List vs. Market Price (Spot)

- Price list = Producers' price list
- Market = Valuers' “market” price list
- The question is: Does the producer's price reflect its final selling price, and how accurate is the valuator's price list?

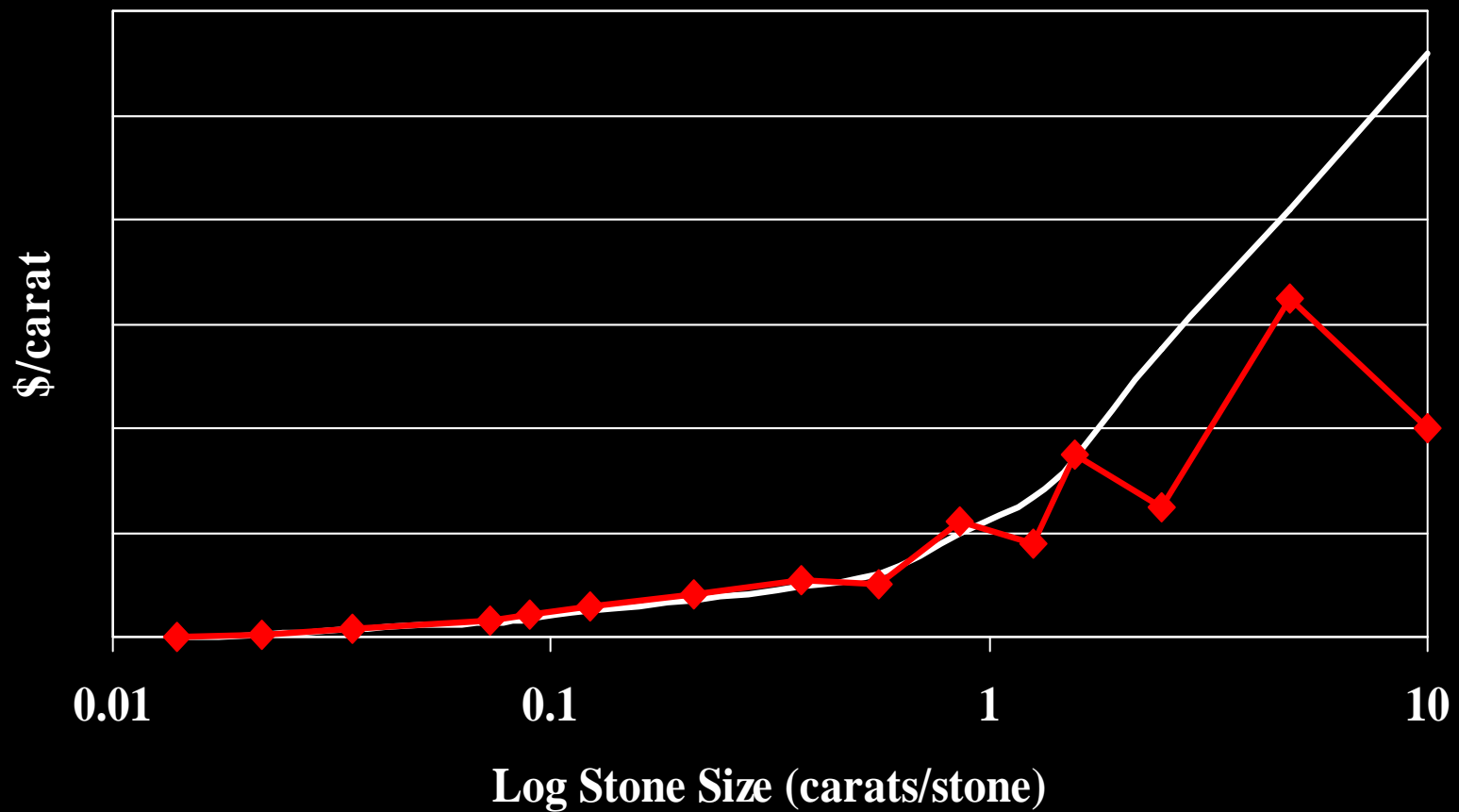


Dollar per Carat Vs Size



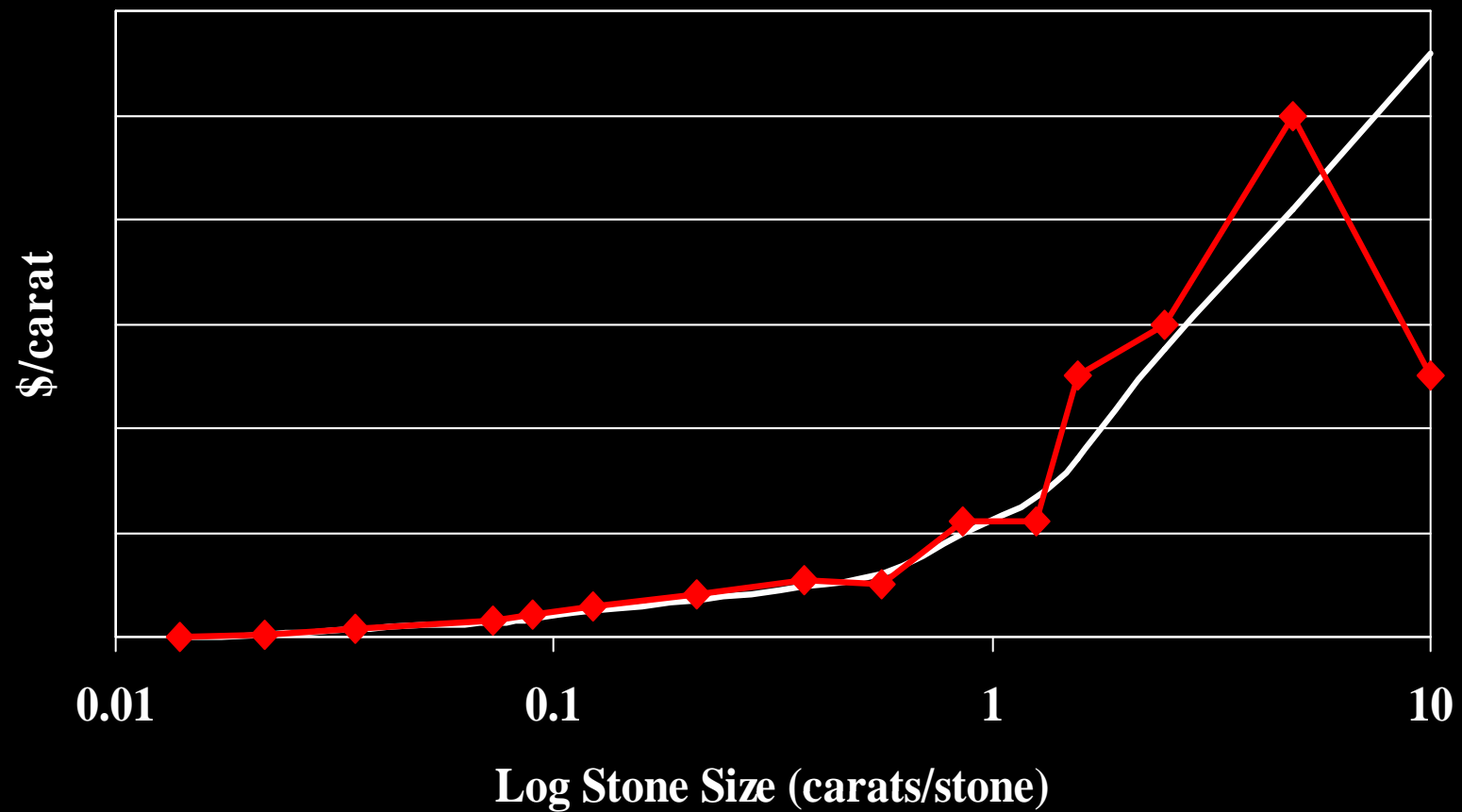


Dollar per Carat Vs Size





Dollar per Carat Vs Size



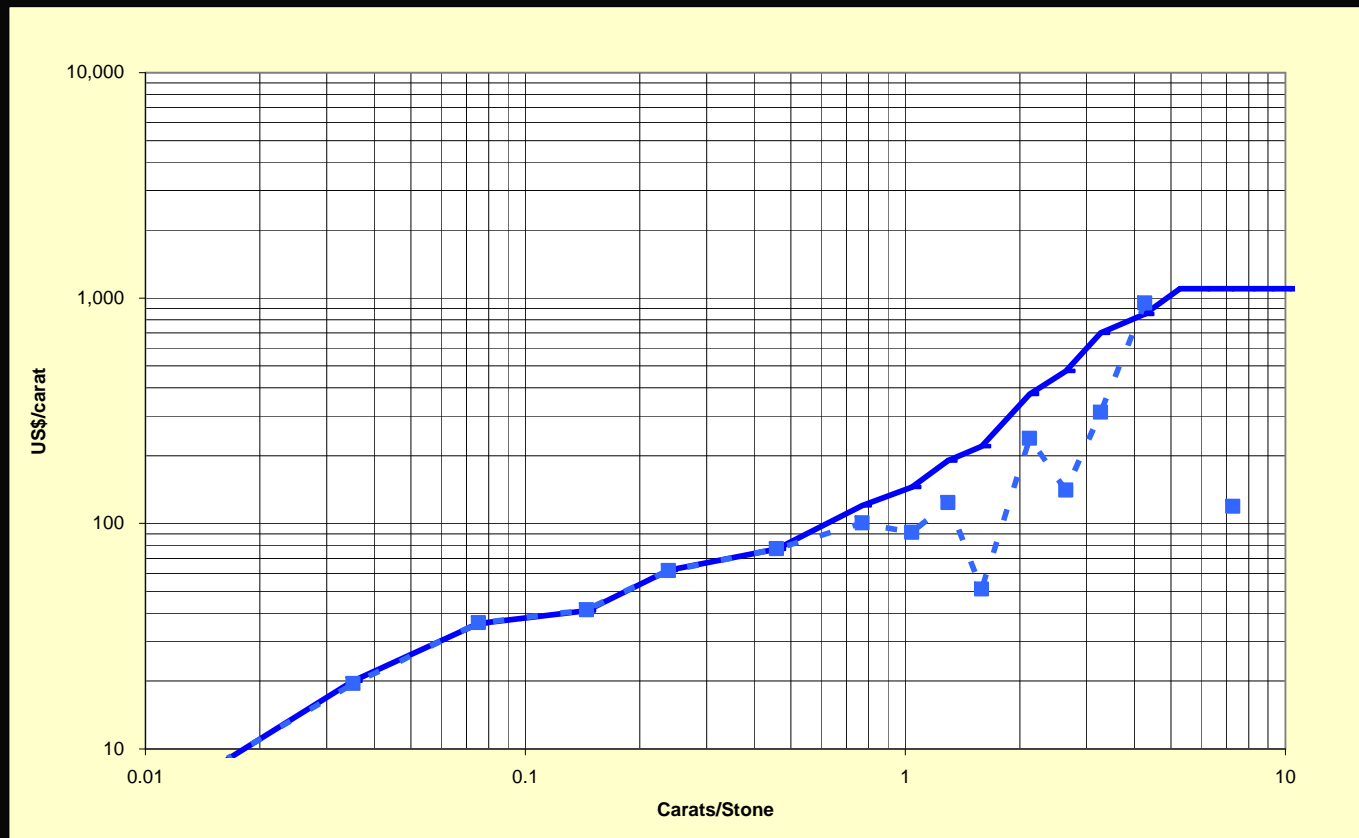


Why the Variability?

- Size of the sample
- Diamond damage
- Diamond breakage
- Recovery efficiencies
- Security

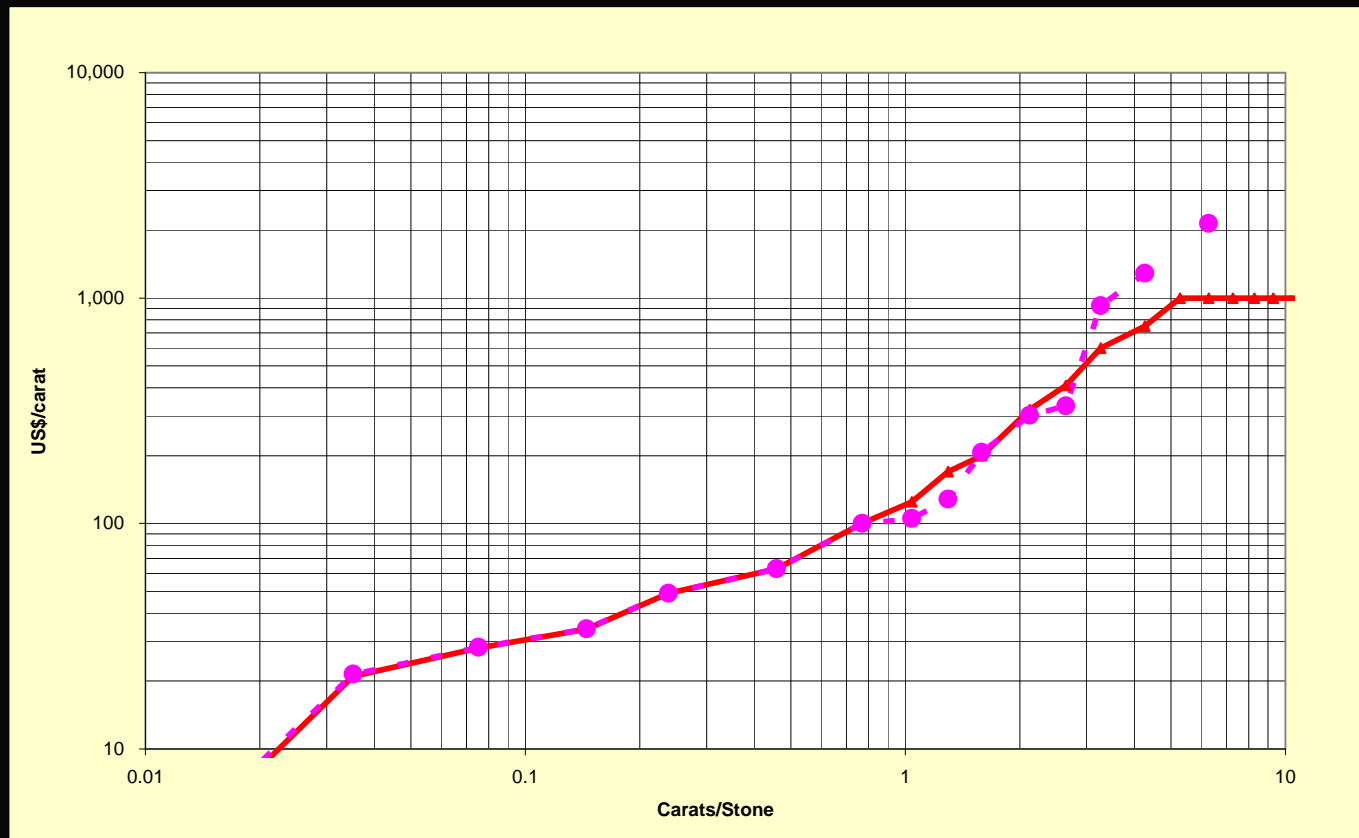


Values per Size Class



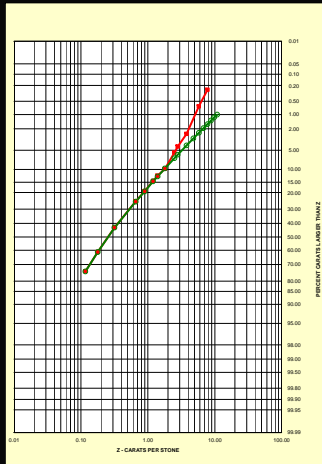


Values per Size Class

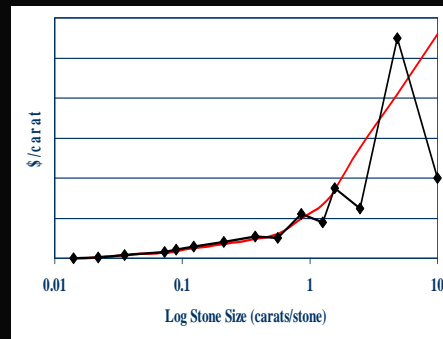




Revenue Estimation



+



= \$/carat

- As with grade estimation revenue estimation also requires a competent person
- Modelling may increase or decrease the average price



Confidence in Revenue Estimation

- Size of Sample
- Each resource is unique
- Samples per geological zone
- Valuation is not scientific
- Modelling improves confidence
- Can give an indication of upward and downward potential



Diamonds are Different

Question:

In a diamond mine when would an increase in the average price (\$ per carat) have a negative impact on the mine's economics?





Diamonds are Different

Answer:

If there is poor recovery of small stones:

\$/carat increases

grade decreases

\$/tonne decreases

revenue to the mine decreases

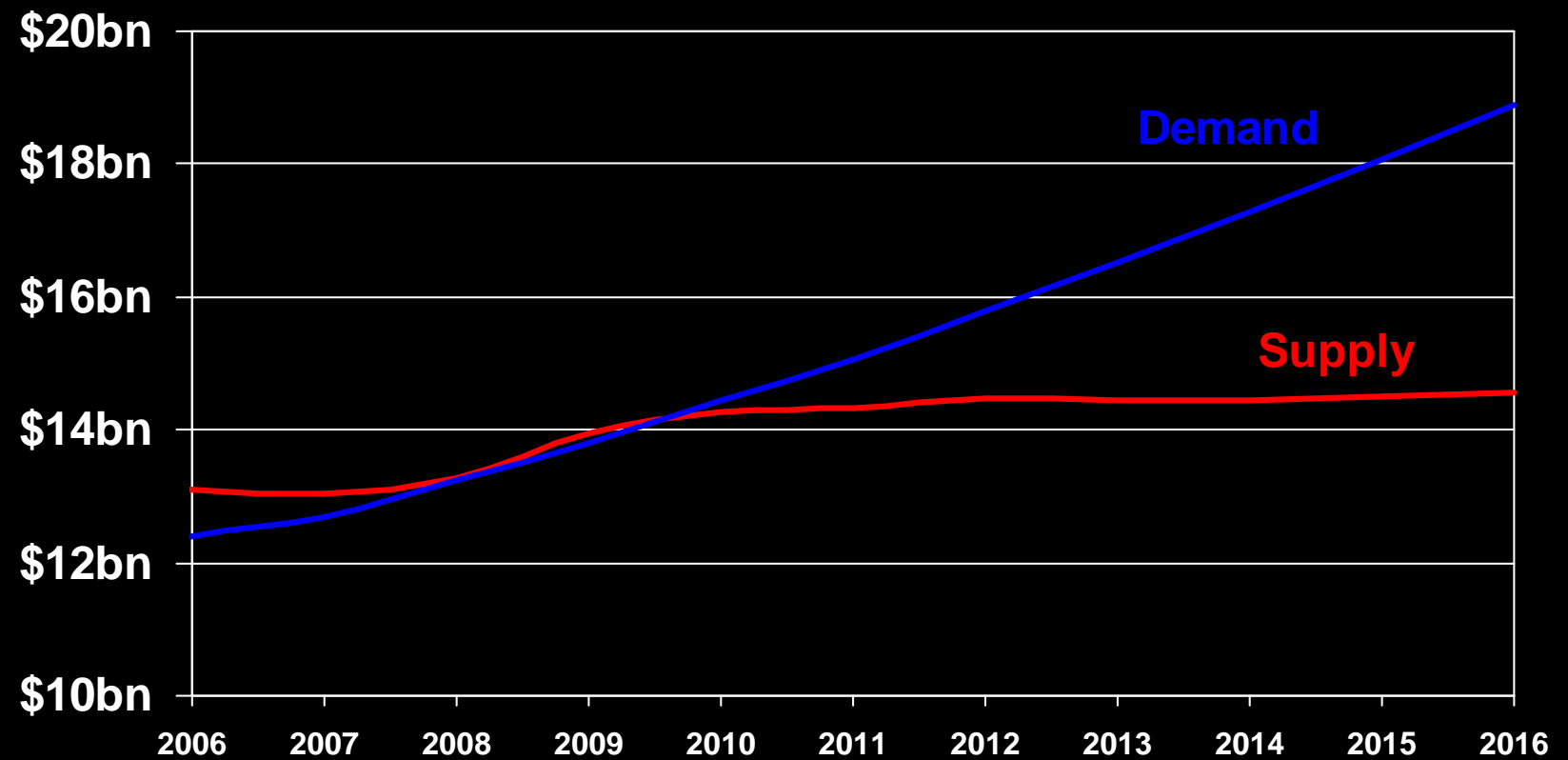


Press Release - Example

- 227 carats @ \$301 / carat = \$344 / tonne
- Includes 11, 9 and 6 carater
- 3 largest = 10% of weight and 75% of value
- Remainder = \$83 / carat @ \$95 / tonne
- WWW modelled value = \$105 / carat

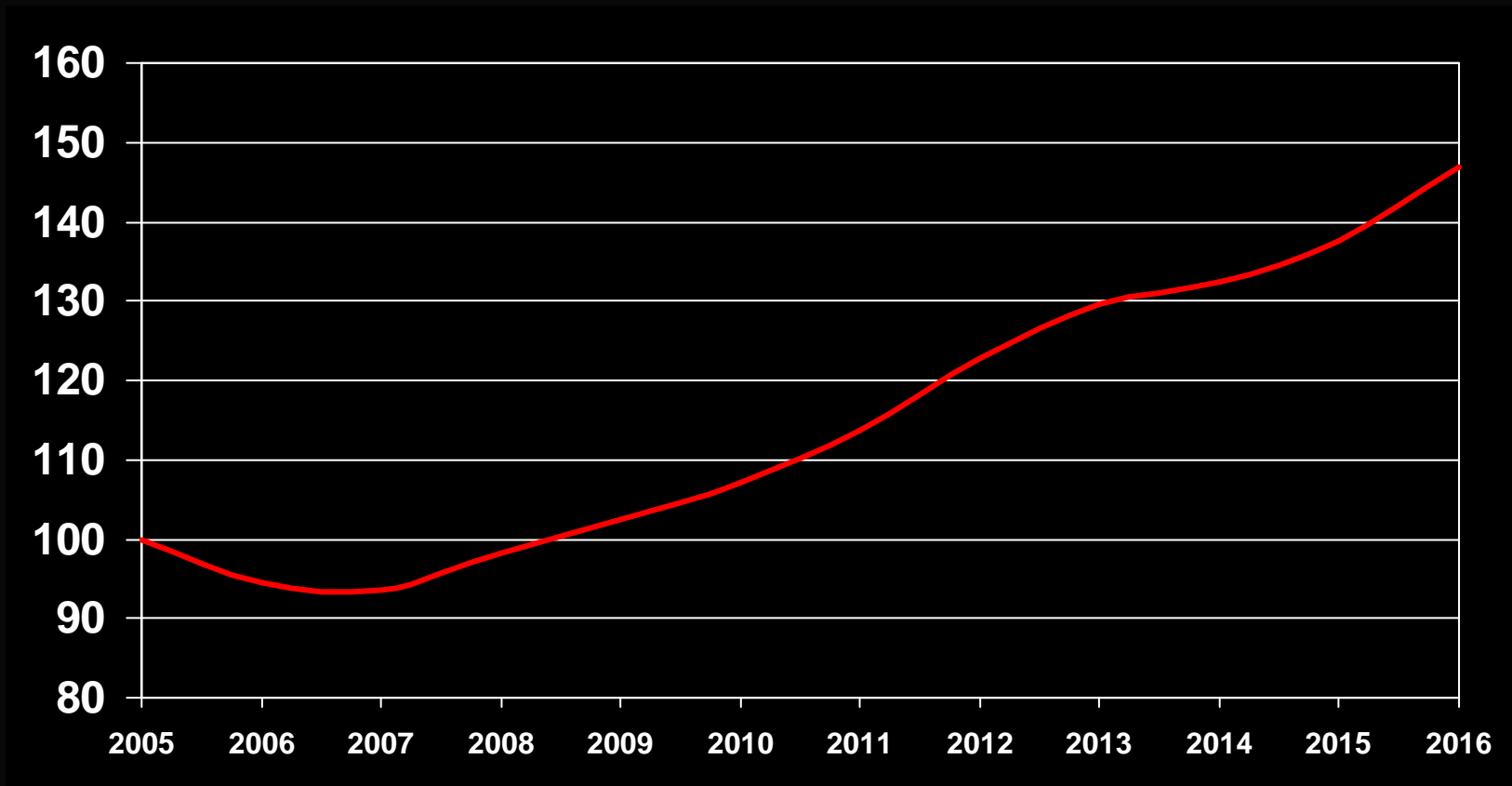


Supply / Demand





Rough Price Index





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