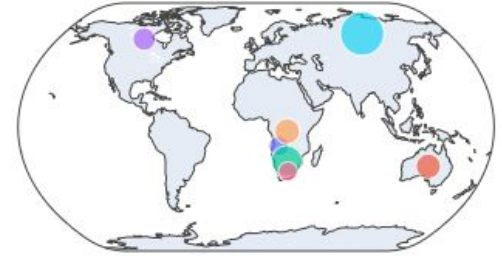**Christoph Lamprecht, Priya Subramanian, Serkan Tezgel**

Agenda

1. **The Situation**

2. **The Complication = Focus of our Analysis**

3. **Diamond Market Analysis**

   - **Production Analysis**

   - **Price and Characteristics Relation**

4. **Findings**

5. **Recommendations (Summary)**

1. The Situation

Motivation

Scenario:

You are about to start a Diamond Mining / Selling Company on global scale or you're already a Diamond Distributor looking for Consulting and sustainable decision support.
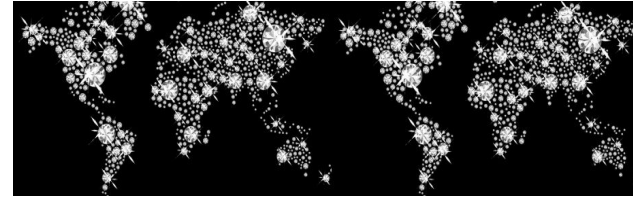
1. The Situation

Diamond Market

- Prone to economy crises
- **Downward trend** in diamond production
- Persistent Customer demand for diamond jewelry (gift, marriage symbol)
- **Economic uncertainty** for the future
- Full recovery expected between 2022-2024.

(Resource:Global Diamond Industry Report 2020-21, Bain & Company)

2. The Complication

Our Focus

You want to find out:

- Which **product segment** would be **most profitable**
- What supplier **countries** are the most sustainable choice for investment
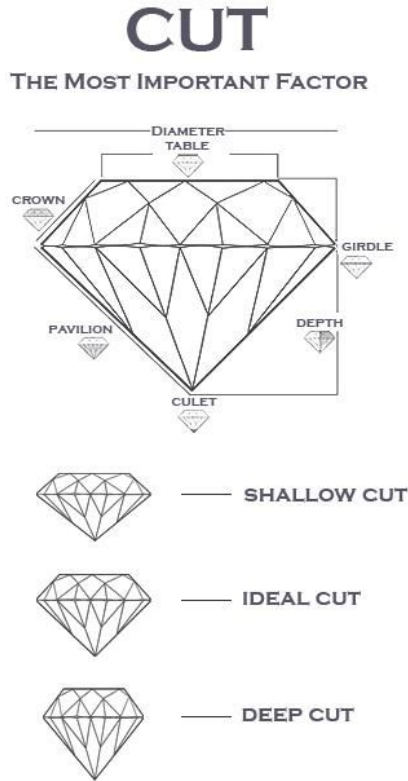
We aim to answer these questions by providing:

- Analytics of historical production data in order to estimate future development
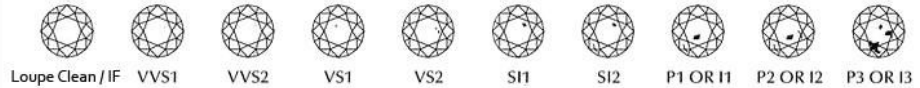- Better understanding of Global Diamond Production dynamics and trends from 1970 to 2015.
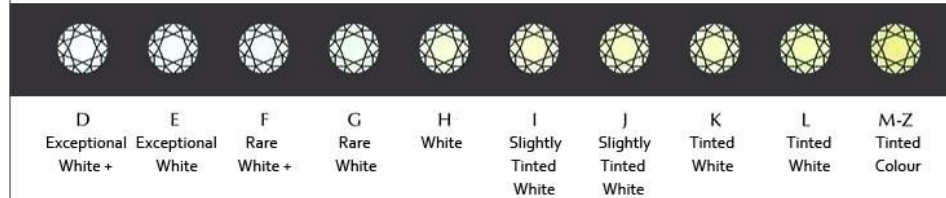
Diamonds' Characterics

4C'S of Diamonds

CUT
THE MOST IMPORTANT FACTOR

DIAMETER
TABLE
CROWN
GIRDLE
PAVILION
DEPTH
CULET

SHALLOW CUT

IDEAL CUT

DEEP CUT

CLARITY
International Grading Scale

Loupe Clean / IF | VVS1 | VVS2 | VS1 | VS2 | SI1 | SI2 | P1 OR I1 | P2 OR I2 | P3 OR I3

COLOUR
International Grading Scale

D	E	F	G	H	I	J	K	L	M-Z
Exceptional White +	Exceptional White	Rare White +	Rare White	White	Slightly Tinted White	Slightly Tinted White	Tinted White	Tinted White	Tinted Colour

CARAT
Size Indication Scale

3.00 CARAT	2.50 CARAT	2.00 CARAT	1.75 CARAT	1.50 CARAT	1.25 CARAT	1.00 CARAT	0.50 CARAT	0.25 CARAT
9.4mm	8.8mm	8.2mm	7.8mm	7.4mm	7mm	6.5mm	5.2mm	4.1mm
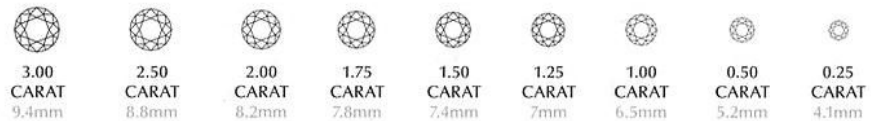
Production Analysis: General Overview

15 Countries with Production > 1M ct

Decline 2000

Increase in early 2000s
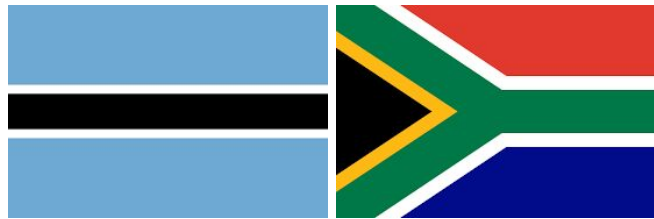
Production relatively stable

7
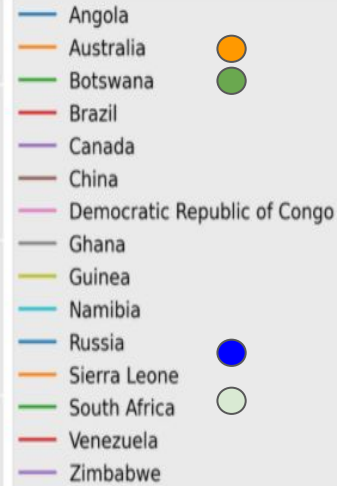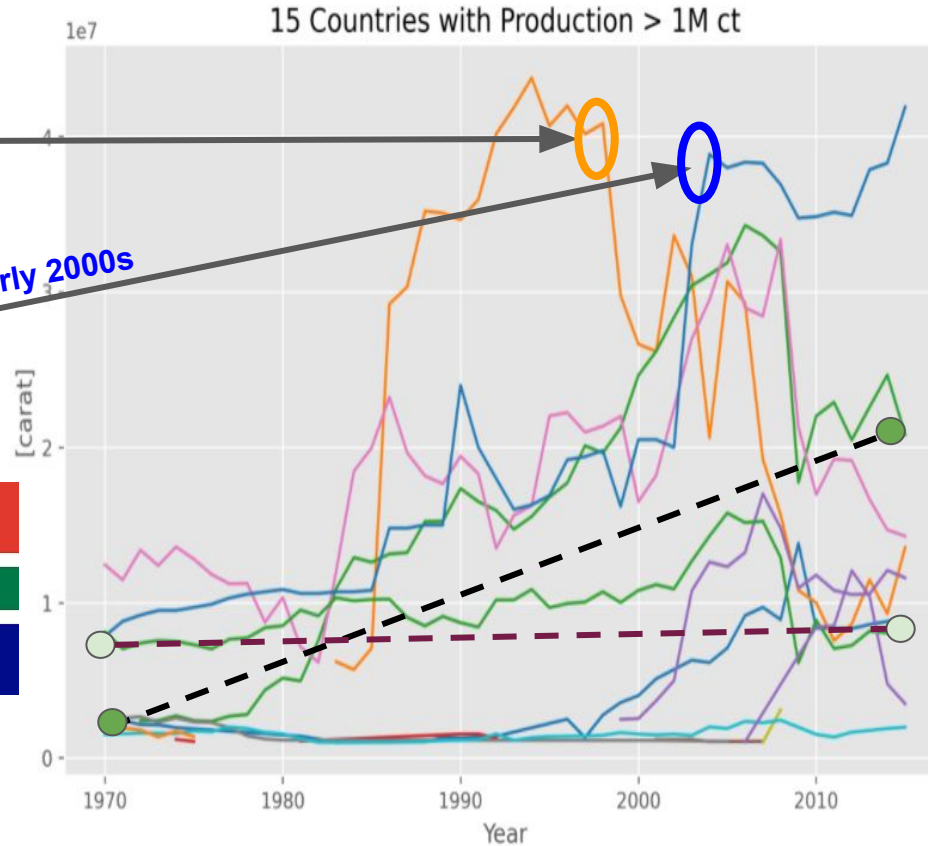
3. Diamond Market Analysis

Australia's Diamond Mining Industry

1979
Discovery of Argyle pipe

1983
Australia established Argyle Diamond Mining

1994
Australia Recorded Production Peak

1996
Rift between Rio Tinto and De Beers

2002
Permission granted for widening & deepening of Pit

Source: https://www.mining-technology.com/features/timeline-the-life-and-times-of-australias-unlikely-argyle-diamond-mine/

8
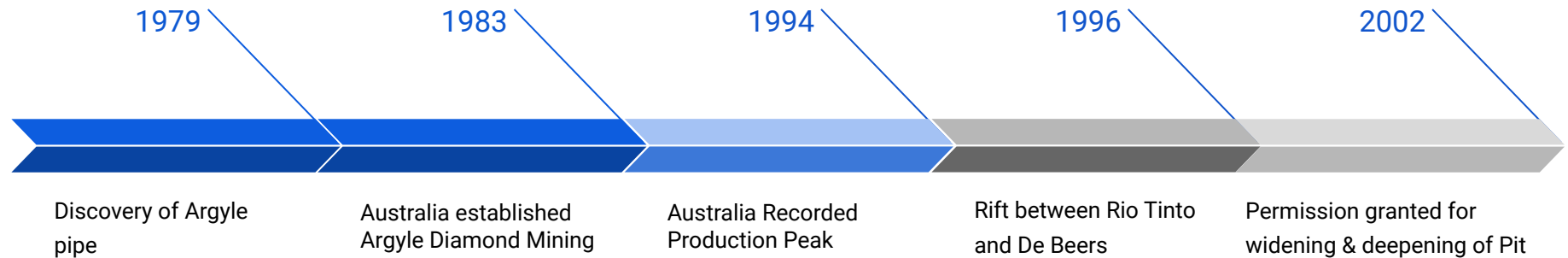
3. Diamond Market Analysis

Russia's Diamond Mining Industry
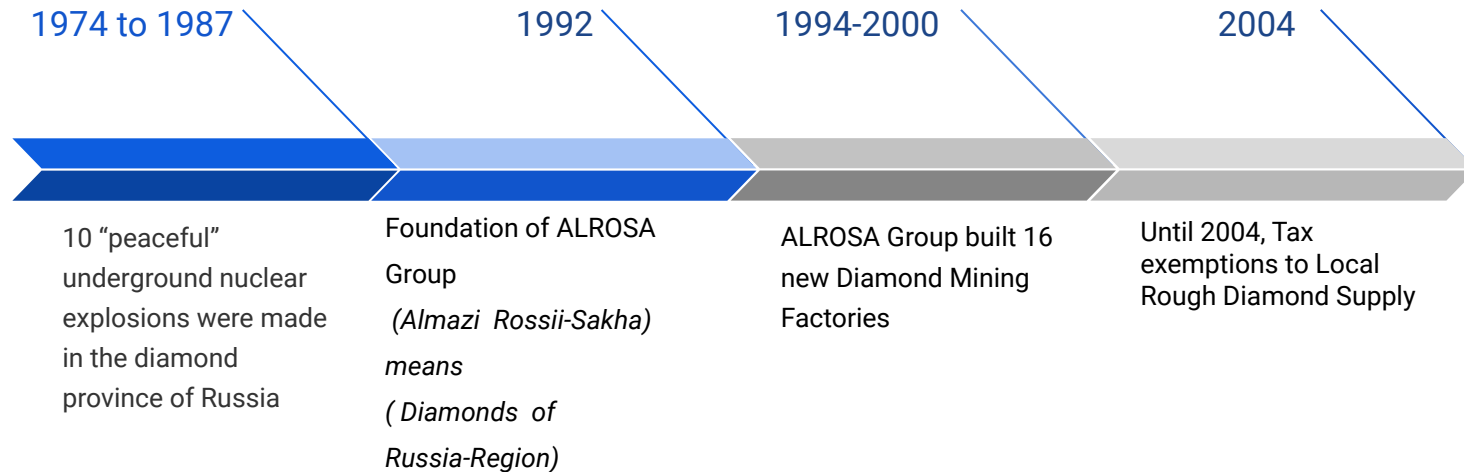
1974 to 1987

10 "peaceful" underground nuclear explosions were made in the diamond province of Russia

1992

Foundation of ALROSA Group

(Almazi Rossii-Sakha) means

(Diamonds of Russia-Region)

1994-2000

ALROSA Group built 16 new Diamond Mining Factories

2004

Until 2004, Tax exemptions to Local Rough Diamond Supply

3. Diamond Market Analysis

Production Analysis

Global Diamond Production per country (latest year on record)

42M ct in 2015

14M ct in 2015

Source: British Geological Service (2016)

Carat
40M
35M
30M
25M
20M
15M
10M
5M
0

3. Diamond Market Analysis

Production Analysis

Same Supplier
Same Rank Order

Supplier from each Continent
Africa : Leading Continent
Russia : Leading Country
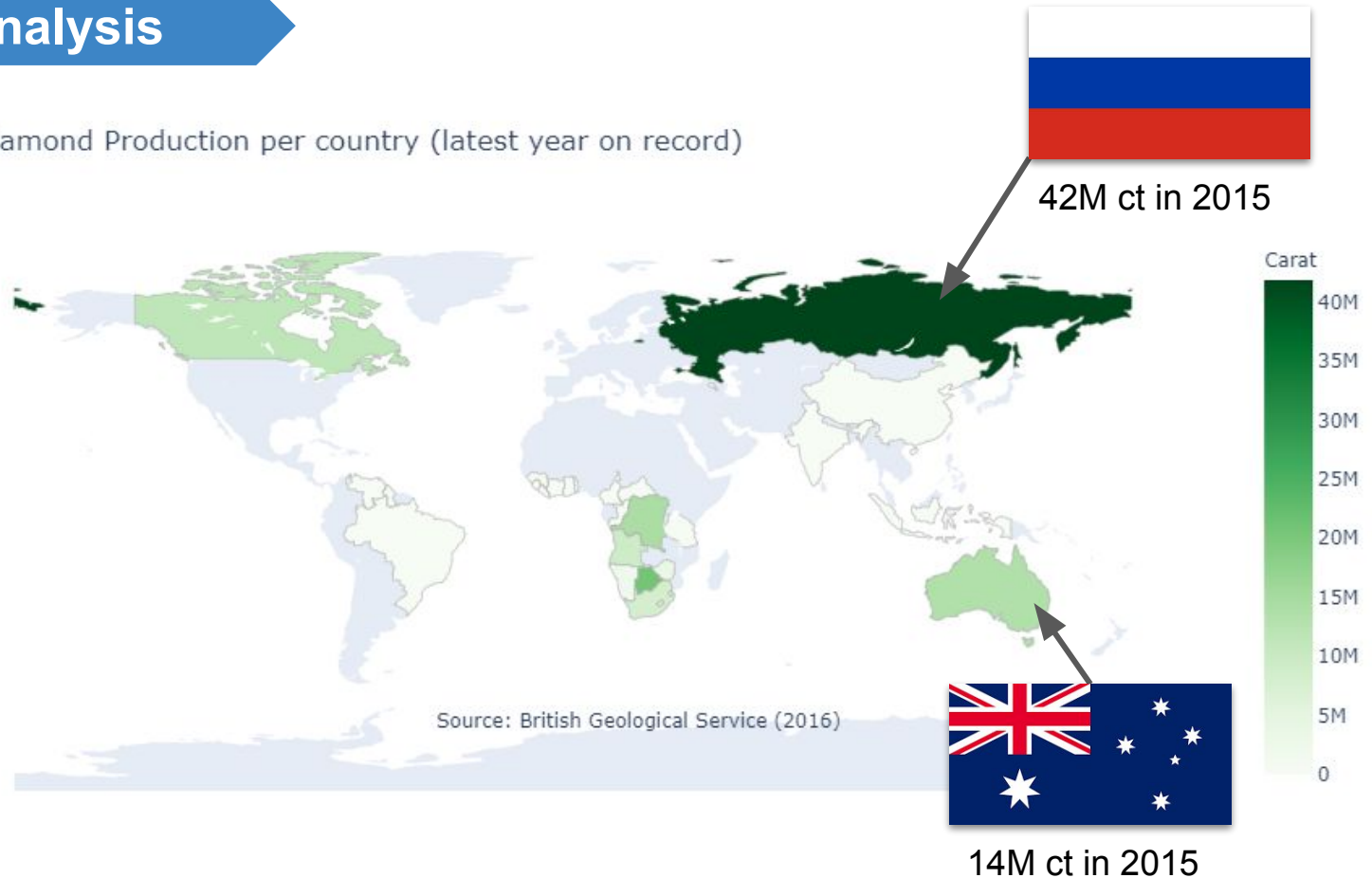
Decline in Production
except Russia

Comparison of Diamond Production in 2015 vs. 2005 for Countries leading in production with at least 5M ct

increase ➡

Variable
- Production_2005
- Production_2015
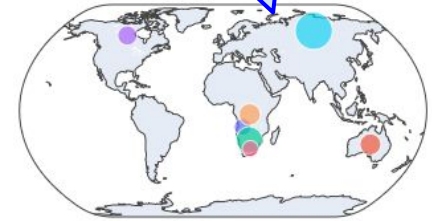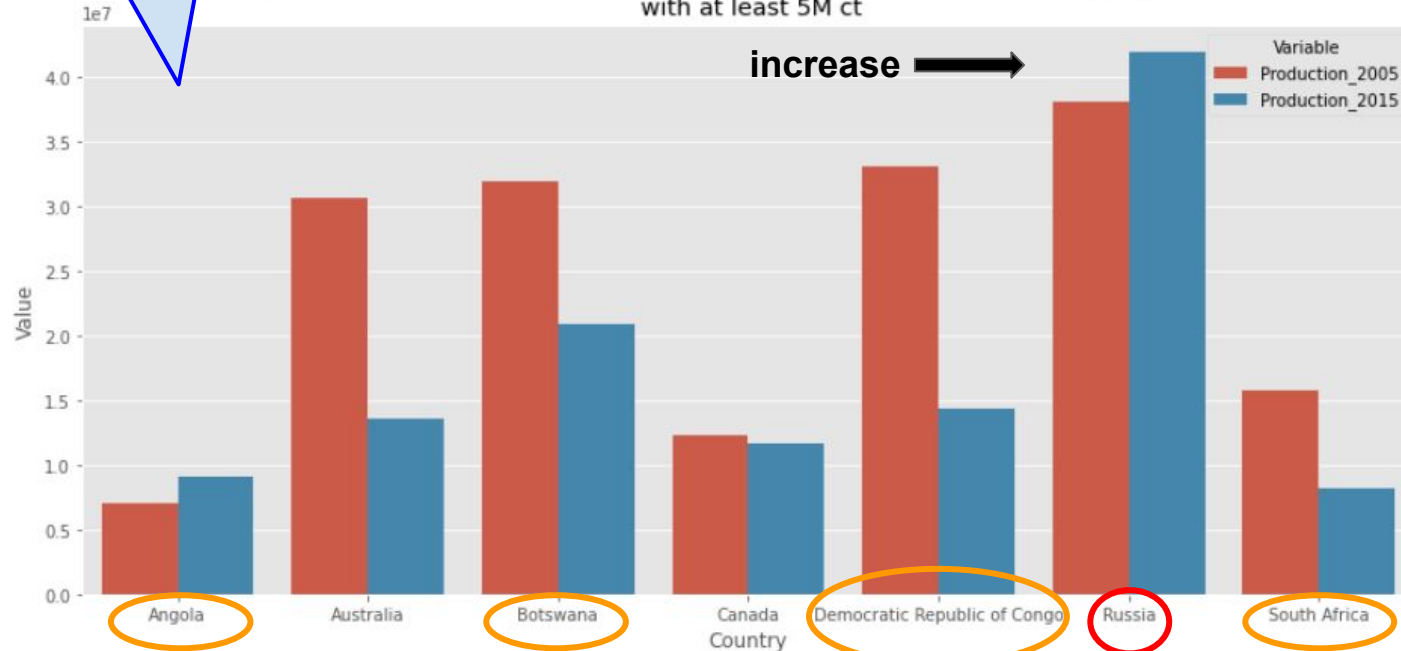
Country
- Angola
- Australia
- Botswana
- Canada
- Democratic Republic of Congo
- Russia
- South Africa

Production Analysis

Highest rated countries with a diamond production of at least 5M ct for color grade D
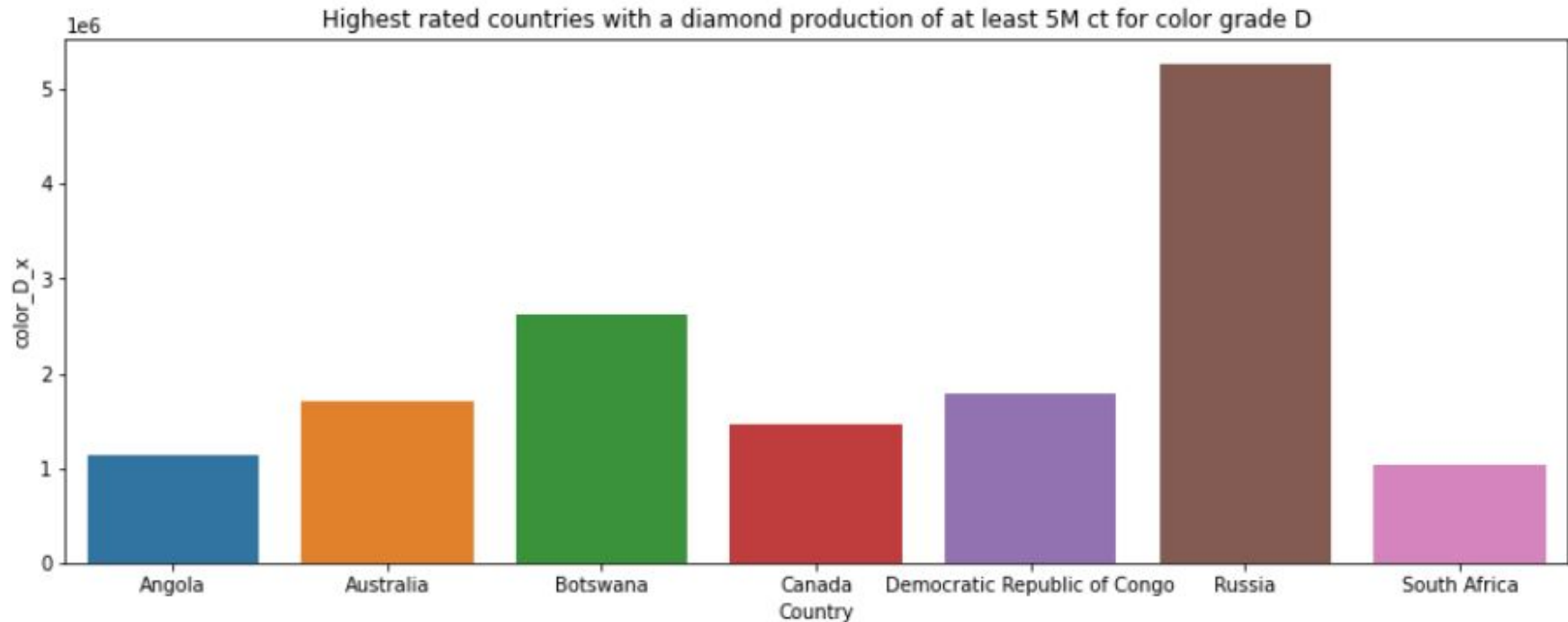
3. Diamond Market Analysis

Production Analysis

POOR   FAIR   GOOD   VERY GOOD   EXCELLENT

Country
- Russia
- Zimbabwe
- Lesotho
- Congo
- Angola

13
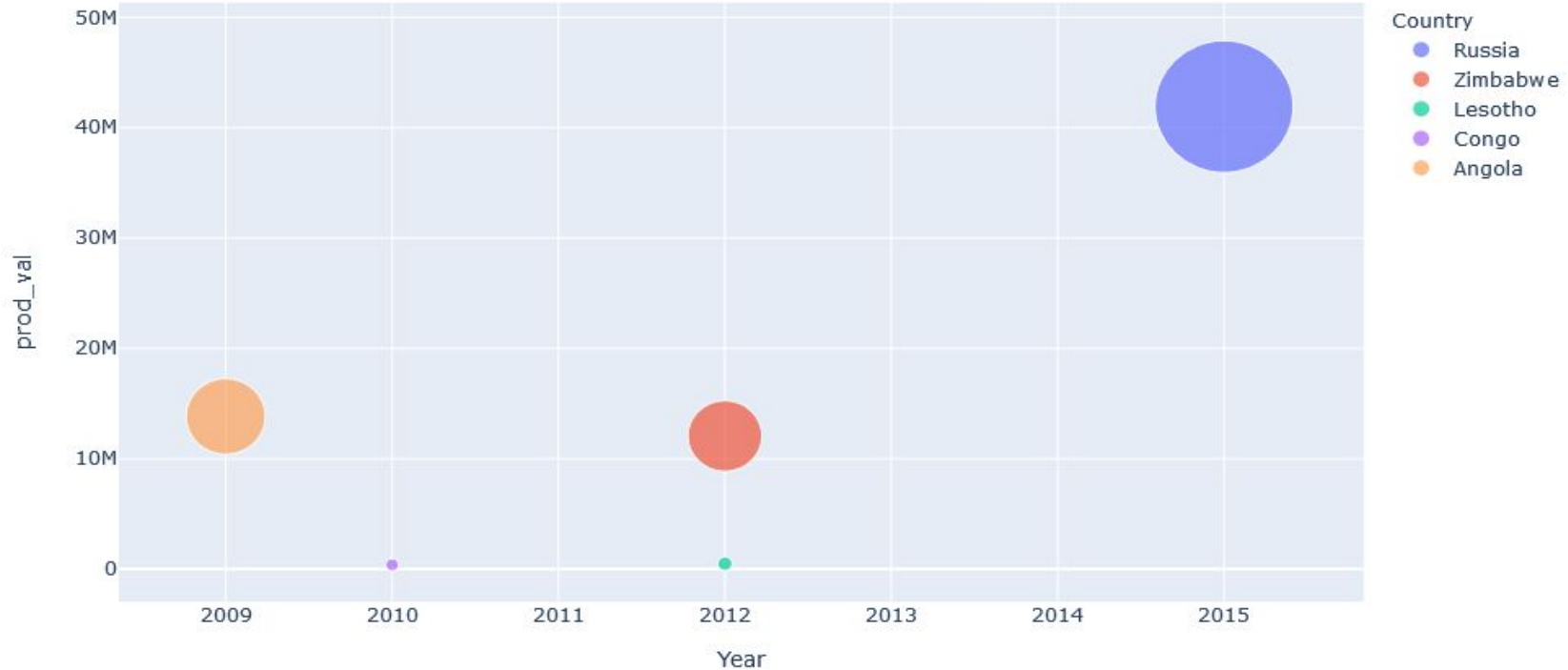
Price and Characteristics Relation

Correlation Between Variables
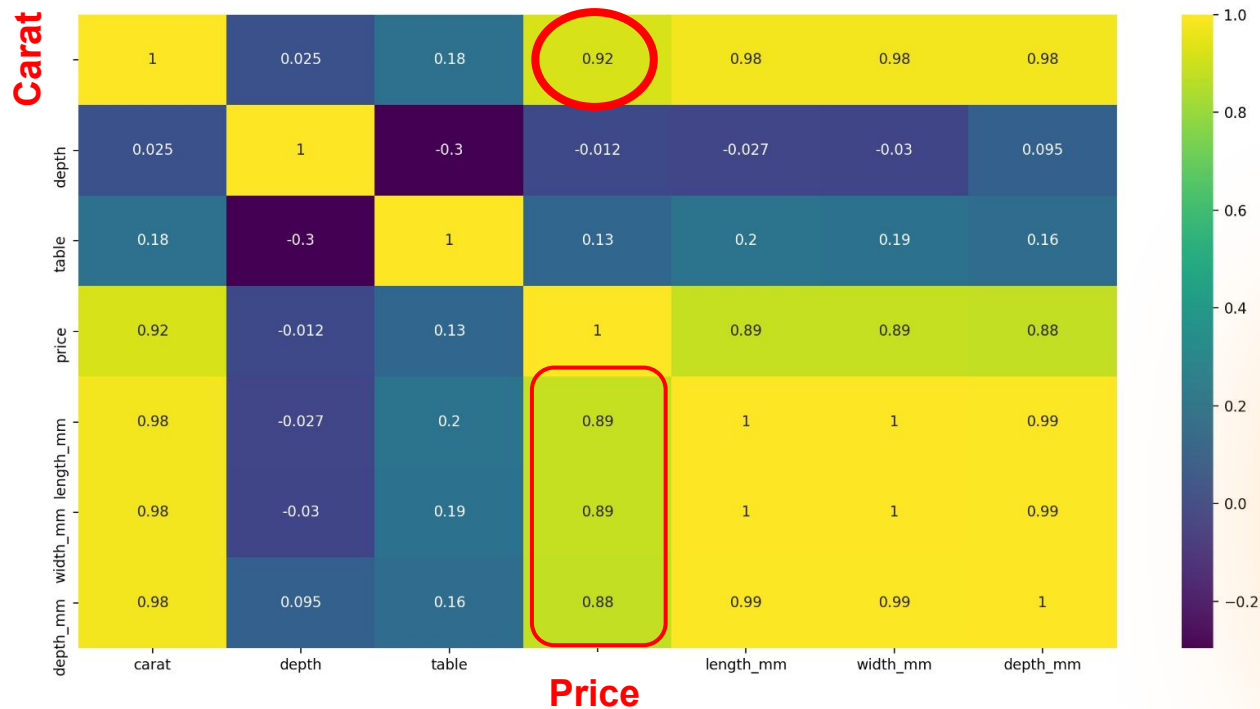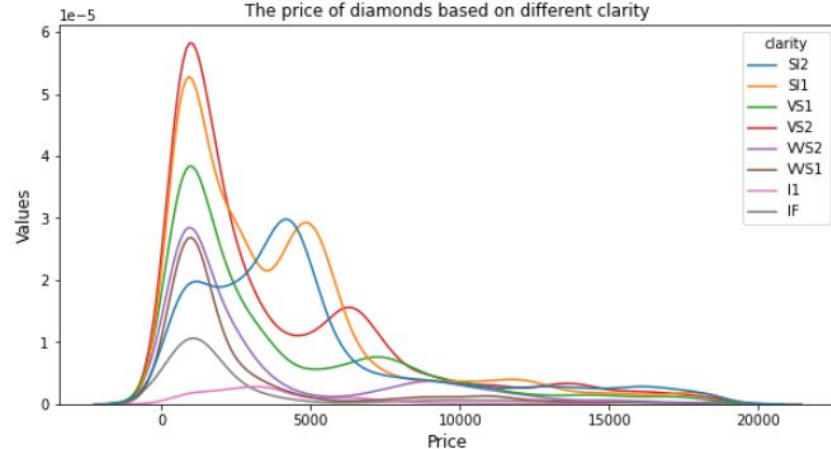
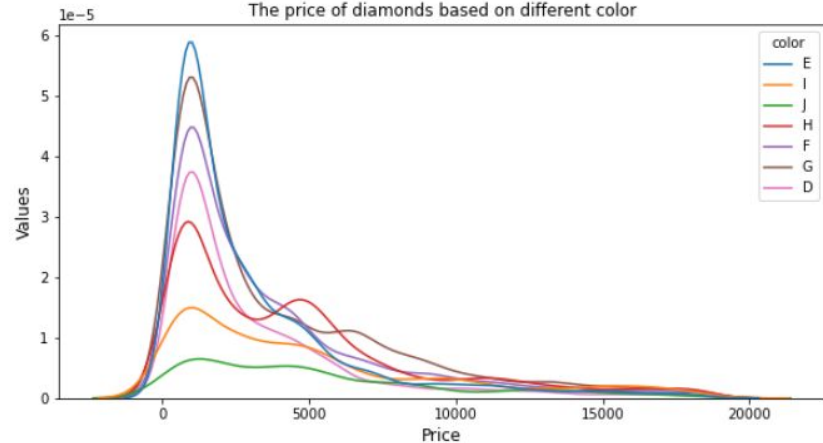## Price and 3 C's Relation

The price of diamonds based on different cut
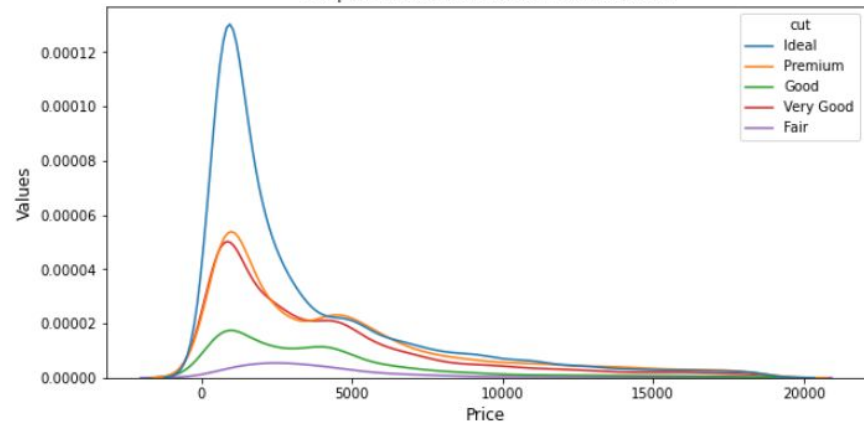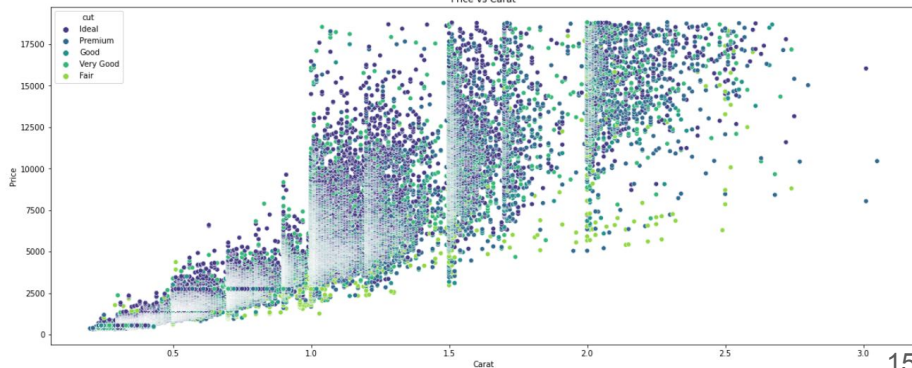

The price of diamonds based on different clarity

The price of diamonds based on different color
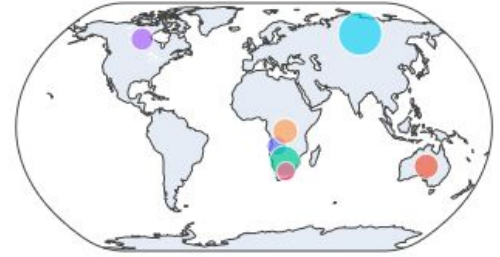

Price vs Carat

4. Findings

Price:

- **Price** predominantly determined by **Carat value**
- Cut, Clarity and Color (3 Cs) not showing significant effect on price.
- Medium und large diamonds account for ~ 23% of production but nearly 60% value in US$.
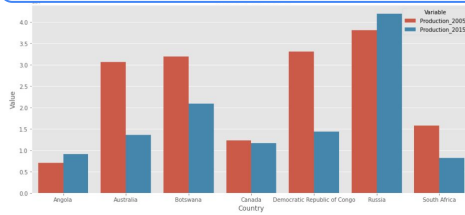- Investing in Diamonds with higher carat values can maximise profit

Global Production:

- Russia as the **leading producer** for the whole carat spectrum, followed by Botswana
- Africa is the leading producer **as a continent.**
- Maximum of all produced diamonds in Medium ct range (0.8 - 1.2 ct)

5. Recommendation Tree

Diamond Mining / Selling Company on global scale

Analysis of Global Diamond Production

Carat

Price

Which Countries

Which Diamonds

★ **Russia**
★ **Africa (Botswana, South Africa, DRC, Angola,)**
★ **Australia**
★ **Canada**

★ **Medium und High Carat diamonds (> 0.8 ct)**
★ **Premium Cut quality diamonds (RUS, ANG)**

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DiAna

Diamond Analytics

THANK YOU FOR YOUR TIME