RENT IN BARCELONA

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PROBLEM STATEMENT

Barcelona is a beautiful and diverse city with people from all over the world putting down their roots, very much like how it is here in Singapore. As someone that lives in one of the most expensive countries in the world, I am genuinely interested to find out how affordable this city is compared to Singapore and what the rent price trend would look like in future.

DATASET

This dataset is downloaded from Kaggle

https://www.kaggle.com/datasets/marshuu/rent-price-in-barcelona-2014-2022/code?select=Barcelona_rent_price

It contains data of rent prices in different neighborhoods with 6 columns that include:

- year
- trimester
- district

- neighborhood
- average_rent
- price

Variable	Type	Description
year	int	year
trimester	int	period of year
district	text	district name
neighbourhood	text	neighborhood name
Average_rent	text	rent type
price	double	rent price in euros

EXPLORATORY ANALYSIS

To begin with, I want to find the average rent. This dataset offers data for monthly rent as well as rent per square meter.

```
# MONTHLY PRICE

SELECT year, ROUND(AVG(price), 2) AS rent_per_month
FROM barcelona_rent_working
WHERE average_rent = 'average rent (euro/month)'
GROUP BY year;

# PER SQUARE PRICE

SELECT year,ROUND(AVG(price),2) AS rent_per_square
FROM barcelona_rent_working
WHERE average_rent = 'average rent per surface (euro/m2)'
GROUP BY year;
```

Now let's create a new dataframe with the values and plot them on a line chart

```sql
CREATE VIEW rent_month AS
SELECT year,ROUND(AVG(price),2) AS rent_per_month
FROM barcelona_rent_working
WHERE average_rent = 'average rent (euro/month)'
GROUP BY year;


CREATE VIEW rent_per_square AS
SELECT year,ROUND(AVG(price),2) AS rent_per_square
FROM barcelona_rent_working
WHERE average_rent = 'average rent per surface (euro/m2)'
GROUP BY year;


-- joining both sets of views to create another set of view that compares both price types side by side

CREATE VIEW rent_overview AS
SELECT rent_month.year, rent_month.rent_per_month, rent_per_square.rent_per_square FROM rent_month
JOIN rent_per_square
ON rent_month.year = rent_per_square.year;
```

Rent overview dataframe

	year	rent_per_month	rent_per_square
▶	2014	661.64	9.73
	2015	695.24	10.45
	2016	750.96	11.49
	2017	829.38	12.64
	2018	874.05	12.82
	2019	923.32	13.37
	2020	915.92	13.32
	2021	871.59	12.72
	2022	922.55	13.35

As seen from the table result, the rent per month and per square increases every year up until the year 2020 to 2021 where we see a dip in the cost of rent.

This makes sense as we were experiencing a pandemic during this period. However, we can also see that in 2022 rent prices started going up again. This could be an indication that people are starting to move around again and things are picking up.

Take a look at the line charts below
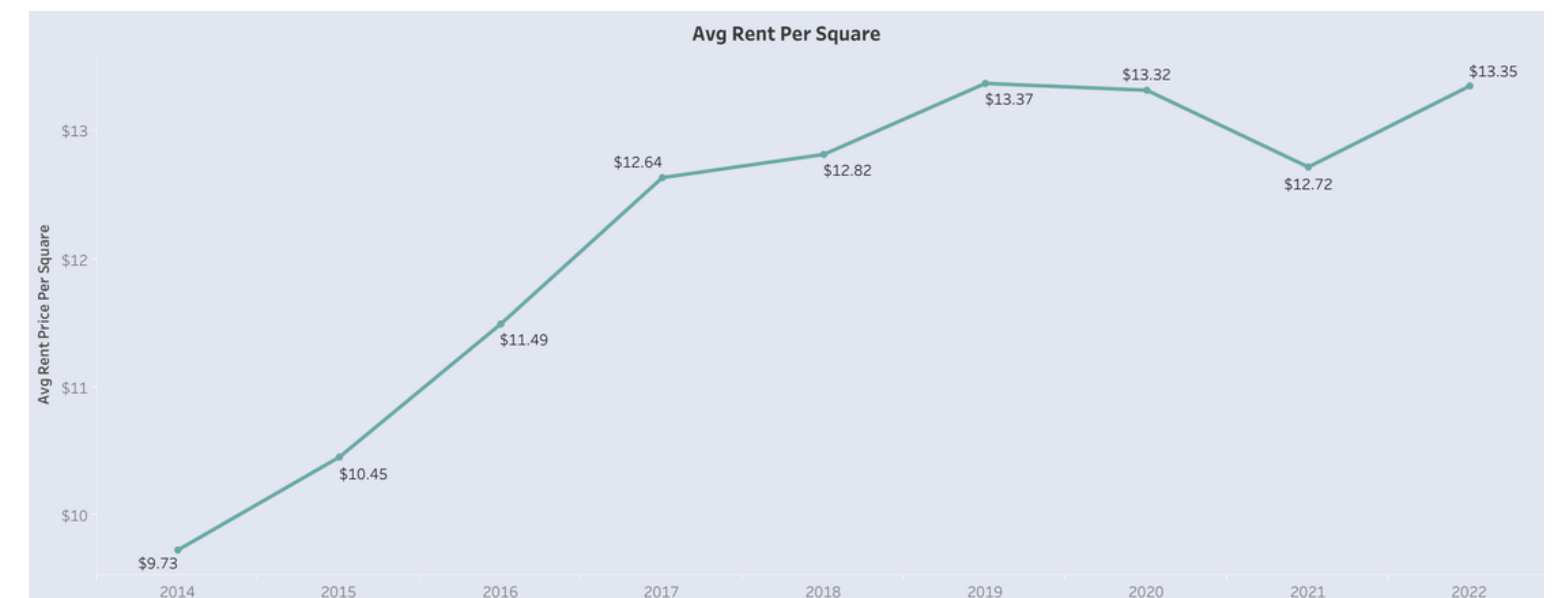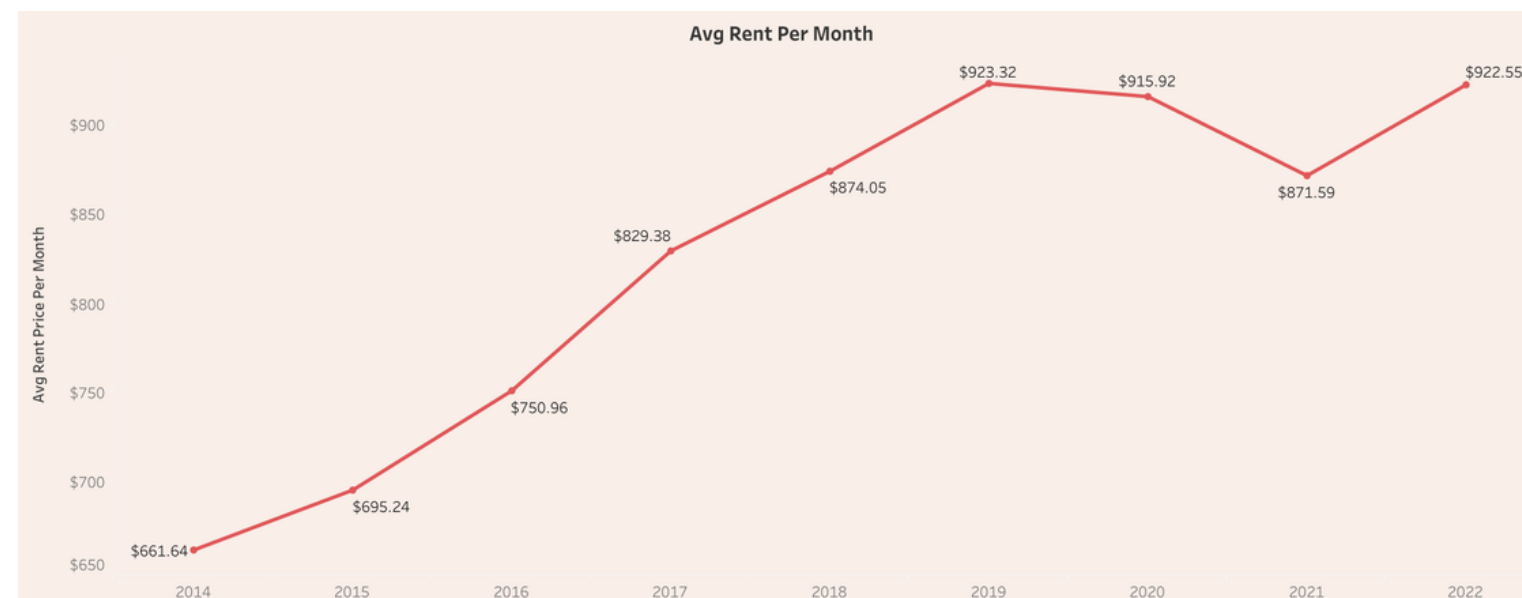
Based on the trend during previous years, we can expect rent prices to keep going up in the next couple of years.

Now we know the rent overview for the years, I would like to find out the rent for each district and how they develop over the years.

To do that, we need to understand the mean/average for each of the 10 districts. We'll look into their rent price per square meter trend
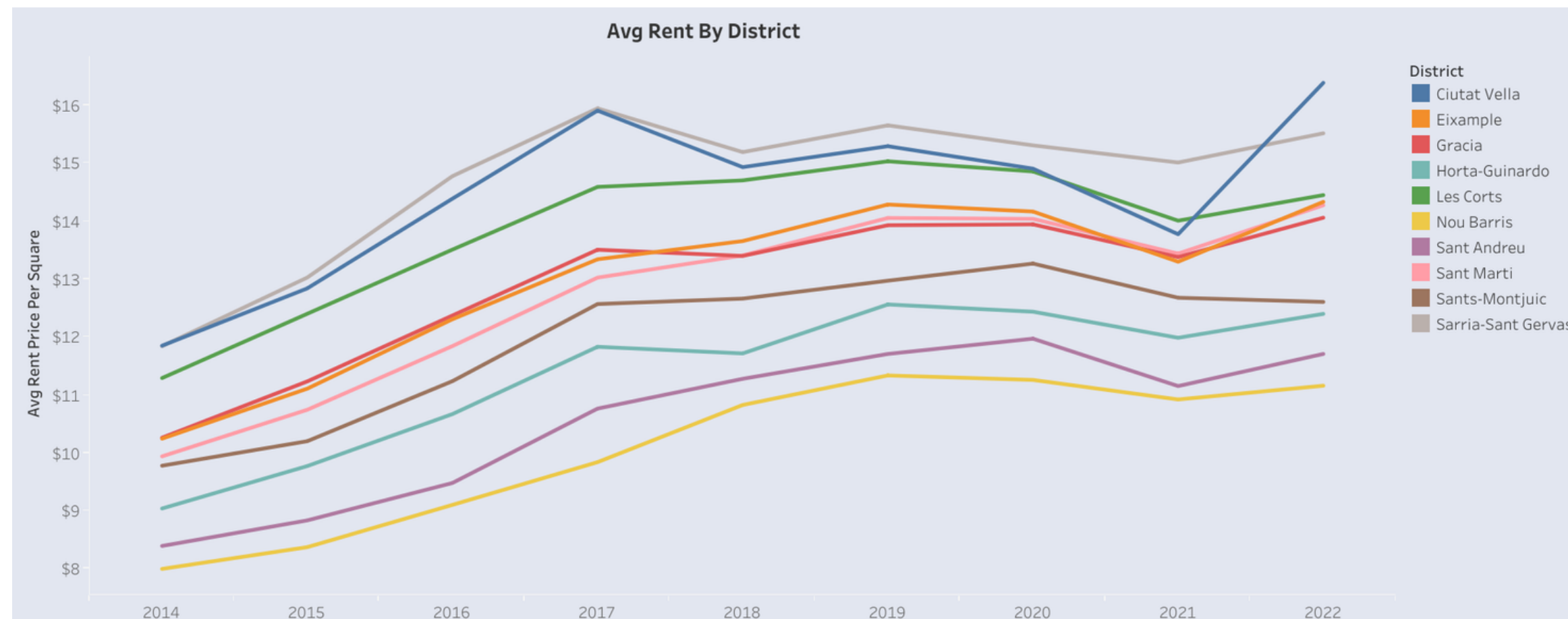
```
# PER SQUARE PRICE BY DISTRICT

SELECT year,
ROUND(AVG(CASE WHEN district = 'Ciutat Vella' THEN price END),2) AS 'Ciutat Vella',
ROUND(AVG(CASE WHEN district = 'Eixample' THEN price END),2) AS 'Eixample',
ROUND(AVG(CASE WHEN district = 'Sants-Montjuic' THEN price END),2) AS 'Sants-Montjuic',
ROUND(AVG(CASE WHEN district = 'Les Corts' THEN price END),2) AS 'Les Corts',
ROUND(AVG(CASE WHEN district = 'Sarria-Sant Gervasi' THEN price END),2) AS 'Sarria-Sant Gervasi',
ROUND(AVG(CASE WHEN district = 'Gracia' THEN price END),2) AS 'Gracia',
ROUND(AVG(CASE WHEN district = 'Horta-Guinardo' THEN price END),2) AS 'Horta-Guinardo',
ROUND(AVG(CASE WHEN district = 'Nou Barris' THEN price END),2) AS 'Nou Barris',
ROUND(AVG(CASE WHEN district = 'Sant Andreu' THEN price END),2) AS 'Sant Andreu',
ROUND(AVG(CASE WHEN district = 'Sant Marti' THEN price END),2) AS 'Sant Marti'
FROM barcelona_rent_working
WHERE average_rent = 'average rent per surface (euro/m2)'
GROUP BY year;
```

This query returns a pivot table of rent price per m2 by year for all districts

We can get a clear view of which districts are pricier and their development over the years

year	Ciutat Vella	Eixample	Sants-Montjuic	Les Corts	Sarria-Sant Gervasi	Gracia	Horta-Guinardo	Nou Barris	Sant Andreu	Sant Marti
2014	11.85	10.25	9.78	11.29	11.84	10.26	9.04	8	8.39	9.94
2015	12.84	11.11	10.2	12.4	13.03	11.23	9.77	8.37	8.84	10.74
2016	14.39	12.31	11.24	13.51	14.78	12.37	10.67	9.1	9.48	11.84
2017	15.91	13.34	12.57	14.59	15.95	13.51	11.83	9.84	10.76	13.03
2018	14.93	13.66	12.66	14.7	15.19	13.4	11.72	10.83	11.28	13.41
2019	15.29	14.29	12.97	15.03	15.65	13.93	12.56	11.34	11.71	14.05
2020	14.91	14.17	13.27	14.86	15.31	13.94	12.44	11.26	11.97	14.04
2021	13.78	13.3	12.68	14.01	15.01	13.38	11.99	10.92	11.15	13.44
2022	16.39	14.33	12.61	14.45	15.52	14.06	12.4	11.16	11.71	14.27

We can see very distinctly that Ciutat Vella seem to be a very prominent district, it has the highest per square meter price of €16 followed by Sarria-Sant Gervasi at €15 in 2022. These two districts have constantly been the top 2 districts with the highest rent price since 2014.

Avg Rent By District

On average, other districts have a rent price of about €14 per square meter in 2022. The district with the lowest rent price in 2022 is Nou Barris, it's average rent price per square meter is €11
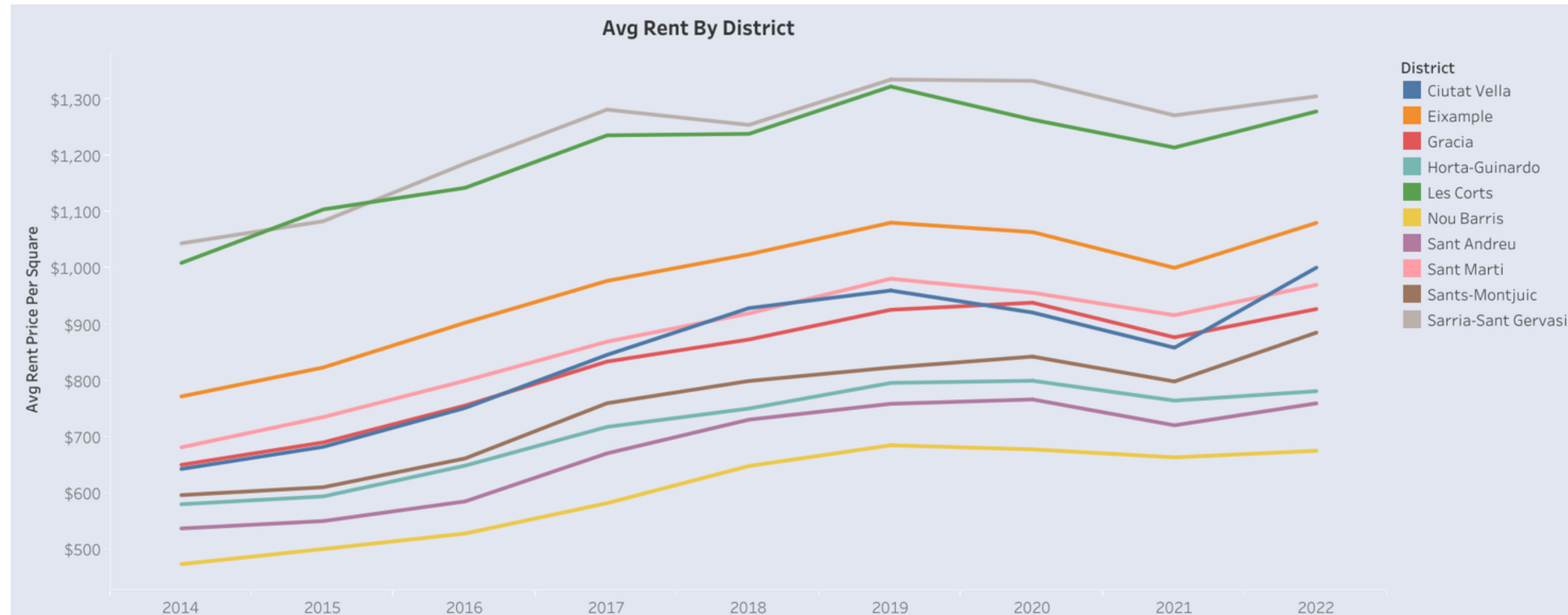
Looking at price per square may not be very useful, so let's take a look at the monthly rent prices of the different districts.

```sql
# MONTHLY PRICE BY DISTRICT

SELECT year,
ROUND(AVG(CASE WHEN district = 'Ciutat Vella' THEN price END),2) AS 'Ciutat Vella',
ROUND(AVG(CASE WHEN district = 'Eixample' THEN price END),2) AS 'Eixample',
ROUND(AVG(CASE WHEN district = 'Sants-Montjuic' THEN price END),2) AS 'Sants-Montjuic',
ROUND(AVG(CASE WHEN district = 'Les Corts' THEN price END),2) AS 'Les Corts',
ROUND(AVG(CASE WHEN district = 'Sarria-Sant Gervasi' THEN price END),2) AS 'Sarria-Sant Gervasi',
ROUND(AVG(CASE WHEN district = 'Gracia' THEN price END),2) AS 'Gracia',
ROUND(AVG(CASE WHEN district = 'Horta-Guinardo' THEN price END),2) AS 'Horta-Guinardo',
ROUND(AVG(CASE WHEN district = 'Nou Barris' THEN price END),2) AS 'Nou Barris',
ROUND(AVG(CASE WHEN district = 'Sant Andreu' THEN price END),2) AS 'Sant Andreu',
ROUND(AVG(CASE WHEN district = 'Sant Marti' THEN price END),2) AS 'Sant Marti'
FROM barcelona_rent_working
WHERE average_rent = 'average rent (euro/month)'
GROUP BY year;
```

year	Ciutat Vella	Eixample	Sants-Montjuic	Les Corts	Sarria-Sant Gervasi	Gracia	Horta-Guinardo	Nou Barris	Sant Andreu	Sant Marti
2014	643.73	772.44	597.32	1009.34	1044.08	651.01	581.12	474.8	538.14	682.12
2015	682.97	823.83	611.3	1104.31	1083.35	690.79	595.01	501.62	551.3	735.78
2016	752.02	903.2	662.42	1142.6	1185.86	756.2	649.61	529.15	586.16	800.33
2017	846.16	977.38	760.35	1235.72	1281.41	834.32	718.37	583.03	671.36	869.57
2018	929.11	1024.58	799.81	1238.33	1254.22	873.45	750.92	648.95	731.2	919.76
2019	960.34	1080.73	823.66	1322.32	1334.7	926.18	796.39	685.75	759.32	981.27
2020	921.25	1064.02	843.14	1263.57	1332.46	938.77	800.3	678.47	767.07	956.34
2021	858.92	1000.55	798.93	1214.07	1271.21	877.27	765.01	664.29	721.2	916.45
2022	1000.95	1080.37	885.63	1278.13	1305.03	927.51	781.74	675.95	760.16	970.36

Very interesting indeed! Immediately we can see that now, the districts with the highest average monthly rent are ... Sarria-Sant Gervasi and Les Corts! Ironically, Ciutat Vella's monthly rent closely match those of other districts despite its high per square rent price.

Avg Rent By District

District
- Ciutat Vella
- Eixample
- Gracia
- Horta-Guinardo
- Les Corts
- Nou Barris
- Sant Andreu
- Sant Marti
- Sants-Montjuic
- Sarria-Sant Gervasi

This could perhaps be likely due to size factors. It could be that apartments in Ciutat Vella are generally smaller and apartments in Sarria-Sant Gervasi and Les Corts are more spacious. It would definitely explain the difference in the monthly chart and per square chart.

CONCLUSION

Based on what I've discovered with this dataset, I can conclude that Barcelona is indeed a livable and fairly affordable city. It comes as no surprise that droves of people would come from all over the world to build a life here.

In 2022, the average monthly rent in the most expensive district in Barcelona is about €1,300. Inversely, the average monthly rent in the least expensive is about €670 in Nou Barris. We can of course expect the rent prices to go up year by year based on past trends and the current economic situation.

THANK YOU