

Introduction

In the UK, the cost of living rose significantly in 2021 and 2022. In October 2022, the annual rate of inflation hit a 41-year peak of 11.1% before declining in the following months. The conflict in Ukraine raised energy prices, which increased the cost of living for both businesses and households. This is just one factor that led to the increase in inflation. Due to its heavy reliance on imported gas for electricity generation, Britain was directly affected by the spike in gas prices that occurred last year as a result of Russia's invasion of Ukraine. The UK's departure from the European Union has also made it more difficult for businesses to import goods and services, which has contributed to higher prices. The Bank of England increased the interest rate as a rise in the base rate will in theory slow inflation by reducing consumer demand. But in the short term, it will compound the cost of living crisis.

Research Question

How did the cost of living crisis affect the housing and renting market in London?

The study question attempts to comprehend the impact of inflation on the housing and rental market in London by comparing the data, particularly between the years 2021 and 2023 as inflation went up considerably during this time. We will investigate if the rise in prices, average rentals, affordability ratio, and sales of houses were related to the rising inflation rate. We all know how stressful renting in London can be, and the cost-of-living crisis is making matters worse. Since I've been wanting to move, I've spent a lot of time and effort researching the London private rental market. I've felt that rents have recently increased significantly, along with food and utility costs, which is why I selected this research question to learn more about the housing and rental situation in London.

Data Acquisition

<https://data.london.gov.uk/dataset/uk-house-price-index>

I used the London government website to find data regarding housing in London. I found the dataset UK Property Price Index, which included data on property sales from 1995 through March 2023 as well as average prices by type and borough.

<https://data.london.gov.uk/dataset/housing-london>

I found some information from the Greater London Authority analysis of Rightmove's private rental growth for the years 2020 to 2023, as well as data from a YouGov survey of Londoners' housing expenses conducted between January and July 2022.

<https://homelet.co.uk/homelet-rental-index>

The main focus of the Homelet dataset was private renting. It included London's average rent prices as well as their range. Additionally, it included details on London's and the UK's rent-to-income ratio. Because the dataset was so large, I did not use it all. I utilised data on the rent-to-income ratio from 2021 to 2023, the average private rent in London and the UK from 2021 to 2023, and the yearly variance in private rent from May 2022 to May 2023.

Data Preparation

Survey Data

Before:

Chart title	Proportion of Londoners who said their hou		
Source and notes	YouGov cost of living polling for GLA		
Category	Tenure	Month	Value
Increased a lot	Homeowner v	January 2022	6%
Increased a little	Homeowner v	January 2022	19%
Stayed the same	Homeowner v	January 2022	67%
Decreased a little	Homeowner v	January 2022	4%
Decreased a lot	Homeowner v	January 2022	0%
Don't know	Homeowner v	January 2022	3%
Increased a lot	Homeowner v	April 2022	8%
Increased a little	Homeowner v	April 2022	27%
Stayed the same	Homeowner v	April 2022	59%
Decreased a little	Homeowner v	April 2022	4%
Decreased a lot	Homeowner v	April 2022	1%
Don't know	Homeowner v	April 2022	1%
Increased a lot	Homeowner v	July 2022	15%
Increased a little	Homeowner v	July 2022	20%
Stayed the same	Homeowner v	July 2022	60%
Decreased a little	Homeowner v	July 2022	2%
Decreased a lot	Homeowner v	July 2022	0%
Don't know	Homeowner v	July 2022	3%
Increased a lot	Private tenant	January 2022	9%
Increased a little	Private tenant	January 2022	18%
Stayed the same	Private tenant	January 2022	63%
Decreased a little	Private tenant	January 2022	3%
Decreased a lot	Private tenant	January 2022	0%
Don't know	Private tenant	January 2022	7%
Increased a lot	Private tenant	April 2022	17%
Increased a little	Private tenant	April 2022	20%
Stayed the same	Private tenant	April 2022	56%
Decreased a little	Private tenant	April 2022	1%
Decreased a lot	Private tenant	April 2022	0%
Don't know	Private tenant	April 2022	5%
Increased a lot	Private tenant	July 2022	17%
Increased a little	Private tenant	July 2022	30%
Stayed the same	Private tenant	July 2022	49%
Decreased a little	Private tenant	July 2022	1%
Decreased a lot	Private tenant	July 2022	0%
Don't know	Private tenant	July 2022	4%
Increased a lot	Social housing	January 2022	11%
Increased a little	Social housing	January 2022	27%

After:

Category	Tenure	Month	Percentage
Increased a lot	Homeowner with mortgage	01 January 2022	6.0%
Increased a little	Homeowner with mortgage	01 January 2022	9.2%
Stayed the same	Homeowner with mortgage	01 January 2022	15.0%
Increased a lot	Homeowner with mortgage	01 July 2022	16.5%
Increased a little	Homeowner with mortgage	01 July 2022	18.2%
Stayed the same	Homeowner with mortgage	01 July 2022	19.0%
Increased a lot	Private tenant	01 January 2022	20.0%
Increased a little	Private tenant	01 January 2022	29.8%
Stayed the same	Private tenant	01 January 2022	48.8%
Increased a lot	Private tenant	01 July 2022	60.0%
Increased a little	Private tenant	01 July 2022	62.8%
Stayed the same	Private tenant	01 July 2022	67.0%

STEPS:

- I used Power BI to transform the data. I only focused on the increased a lot and increased a little response to the survey and deleted all the other responses since I wanted to focus on what the public response was regarding the increase in the price.
- I only used responses from Homeowners and private tenants as that is my focus in this research.

Private rental growth in London

Before:

Chart title	Rightmove quarterly indicator of private rental growth in London, 2016 to 2022		
Source and notes	GLA analysis of data from Rightmove		
Quarter	Londonwide trend	Inner London	Outer London
2020 Q3	-3.0%	-6.8%	0.8%
2020 Q4	-6.4%	-12.4%	0.0%
2021 Q1	-7.8%	-14.0%	-1.1%
2021 Q2	-3.1%	-6.8%	0.8%
2021 Q3	2.7%	2.6%	2.7%
2021 Q4	10.9%	16.2%	5.8%
2022 Q1	14.3%	20.7%	8.1%
2022 Q2	15.8%	21.1%	10.8%

After:

= Table.RenameColumns(#Added Custom7,{"Custom", "Year"}, {"Quarter.2", "Quarter Number"}, {"Quarter.1", "Date"}, {"Custom.1", "Year/Quarter"})							
	Date	Quarter Number	Londonwide trend	Inner London	Outer London	Year	Year/Quarter
1	01/01/2020	3	-3.00%	-6.80%	0.80%	2020	2020 Q3
2	01/01/2020	4	-6.40%	-12.40%	0.00%	2020	2020 Q4
3	01/01/2021	1	-7.80%	-14.00%	-1.10%	2021	2021 Q1
4	01/01/2021	2	-3.10%	-6.80%	0.80%	2021	2021 Q2
5	01/01/2021	3	2.70%	2.60%	2.70%	2021	2021 Q3
6	01/01/2021	4	10.90%	16.20%	5.80%	2021	2021 Q4
7	01/01/2022	1	14.30%	20.70%	8.10%	2022	2022 Q1
8	01/01/2022	2	15.80%	21.10%	10.80%	2022	2022 Q2

Steps:

- I used Power BI to transform the data. I made a custom column for Date using the year so that I can plot the Year/Quarter in ascending.
- I made the trends column data type to percentages.

Average House prices by type:

Before:

		LONDON								UNITED KINGDOM							
		Price				Index				Price				Index			
		Detached	Semi Detached	Terraced	Flat	Detached	Semi Detached	Terraced	Flat	Detached	Semi Detached	Terraced	Flat	Detached	Semi Detached	Terraced	Flat
1995	Jan	161,449	95,898	73,706	64,619	21.7	20.3	18.0	17.9	-	-	-	-	-	-	-	-
	Feb	157,449	96,084	73,757	60,359	21.2	20.4	18.0	16.7	-	-	-	-	-	-	-	-
	Mar	156,090	94,981	73,571	64,186	21.0	20.1	18.0	17.7	-	-	-	-	-	-	-	-
	Apr	156,932	95,193	73,990	65,099	21.1	20.2	18.1	18.0	-	-	-	-	-	-	-	-
	May	158,778	96,727	75,063	65,718	21.4	20.5	18.4	18.2	-	-	-	-	-	-	-	-
	Jun	158,322	96,551	74,684	66,735	21.3	20.5	18.3	18.4	-	-	-	-	-	-	-	-
	Jul	161,896	97,609	75,763	65,790	21.8	20.7	18.5	18.2	-	-	-	-	-	-	-	-
	Aug	160,991	97,064	75,103	65,588	21.7	20.6	18.4	18.1	-	-	-	-	-	-	-	-
	Sep	159,829	96,135	74,632	65,035	21.5	20.4	18.2	18.0	-	-	-	-	-	-	-	-
	Oct	160,268	95,894	73,292	64,793	21.6	20.3	17.9	17.9	-	-	-	-	-	-	-	-
	Nov	157,177	95,155	73,136	65,081	21.1	20.2	17.9	18.0	-	-	-	-	-	-	-	-
	Dec	158,799	96,433	74,254	66,029	21.4	20.4	18.2	18.2	-	-	-	-	-	-	-	-
1996	Jan	159,926	96,393	74,754	65,870	21.5	20.4	18.3	18.2	-	-	-	-	-	-	-	-
	Feb	159,662	97,498	75,122	66,992	21.5	20.7	18.4	18.5	-	-	-	-	-	-	-	-
	Mar	161,107	97,079	75,029	66,097	21.7	20.6	18.3	18.3	-	-	-	-	-	-	-	-
	Apr	160,304	97,381	75,761	68,172	21.6	20.6	18.5	18.8	-	-	-	-	-	-	-	-
	May	160,540	98,333	76,984	67,630	21.6	20.8	18.8	18.7	-	-	-	-	-	-	-	-
	Jun	163,374	99,096	76,944	69,564	22.0	21.0	18.8	19.2	-	-	-	-	-	-	-	-
	Jul	167,042	100,384	77,796	69,523	22.5	21.3	19.0	19.2	-	-	-	-	-	-	-	-
	Aug	168,725	101,125	78,590	68,901	22.7	21.4	19.2	19.0	-	-	-	-	-	-	-	-
	Sep	169,961	101,873	78,910	69,875	22.9	21.6	19.3	19.3	-	-	-	-	-	-	-	-
	Oct	171,030	101,781	78,586	69,598	23.0	21.6	19.2	19.2	-	-	-	-	-	-	-	-
	Nov	168,697	102,161	79,649	70,450	22.7	21.6	19.5	19.5	-	-	-	-	-	-	-	-
	Dec	171,030	104,399	80,634	71,374	23.0	22.1	19.7	19.7	-	-	-	-	-	-	-	-
1997	Jan	176,010	105,732	82,195	73,141	23.7	22.4	20.1	20.2	-	-	-	-	-	-	-	-
	Feb	176,433	105,446	82,178	74,410	23.7	22.3	20.1	20.6	-	-	-	-	-	-	-	-
	Mar	177,667	106,903	83,576	74,926	23.9	22.7	20.4	20.7	-	-	-	-	-	-	-	-
	Apr	180,373	108,927	84,904	76,393	24.3	23.1	20.8	21.1	-	-	-	-	-	-	-	-
	May	186,373	112,329	87,397	78,356	25.1	23.8	21.4	21.7	-	-	-	-	-	-	-	-
	Jun	190,062	113,227	88,606	78,377	25.6	24.0	21.7	21.7	-	-	-	-	-	-	-	-
	Jul	196,287	117,350	91,655	80,620	26.4	24.9	22.4	22.3	-	-	-	-	-	-	-	-
	Aug	198,166	118,155	91,214	80,570	26.7	25.0	22.3	22.3	-	-	-	-	-	-	-	-
	Sep	203,053	120,516	92,998	82,656	27.3	25.5	22.7	22.8	-	-	-	-	-	-	-	-
	Oct	202,832	120,574	92,778	82,234	27.3	25.6	22.7	22.7	-	-	-	-	-	-	-	-
	Nov	206,280	121,845	93,593	83,446	27.7	25.8	22.9	23.1	-	-	-	-	-	-	-	-
	Dec	206,669	124,400	95,777	84,874	27.8	26.4	23.4	23.5	-	-	-	-	-	-	-	-
1998	Jan	212,537	124,936	97,066	85,657	28.6	26.5	23.7	23.7	-	-	-	-	-	-	-	-

After:

Year	Month	Detached	Semi Detached	Terraced	Flat	Date
2020	Jan	891774.8698	579863.3047	498105.7935	416665.8424	01 January 2020
2020	Feb	913682.5779	584998.6915	501979.5889	411498.2501	01 February 2020
2020	Mar	919658.7812	591595.4339	506337.9447	420459.6965	01 March 2020
2020	Apr	919866.9335	584187.8753	502955.4459	411367.3797	01 April 2020
2020	May	904190.7095	583904.1748	498206.8828	406148.5447	01 May 2020
2020	Jun	905830.0326	593029.8517	511302.7812	412696.1384	01 June 2020
2020	Jul	918744.6805	595665.5451	511961.589	418282.9135	01 July 2020
2020	Aug	936007.875	607251.2782	523007.2631	419456.236	01 August 2020
2020	Sep	940995.1787	609904.6359	526433.9268	424518.8791	01 September 2020
2020	Oct	943640.3917	608042.7352	523873.2477	417092.6024	01 October 2020
2020	Nov	961077.4018	617269.4721	532079.2415	424338.1884	01 November 2020
2020	Dec	962199.0677	622111.8179	534962.1904	425729.2885	01 December 2020
2021	Jan	964308.9255	621951.7565	535222.6987	427497.0843	01 January 2021
2021	Feb	956499.2926	615084.8082	528384.1351	417609.9133	01 February 2021
2021	Mar	968148.182	625379.2707	538252.4931	426489.4931	01 March 2021
2021	Apr	968325.5795	617624.4258	528479.0881	417905.259	01 April 2021
2021	May	973866.2849	619856.1636	525641.9297	410330.1298	01 May 2021
2021	Jun	995157.1454	639902.9392	553747.9457	424804.0724	01 June 2021
2021	Jul	1002018.047	622627.7227	529207.7055	431581.245	01 July 2021
2021	Aug	1037321.266	651865.5272	554187.9333	429821.3783	01 August 2021
2021	Sep	1030185.16	654179.8605	555820.2054	427655.1972	01 September 2021
2021	Oct	1056409.192	657164.4865	551551.6427	430996.7164	01 October 2021
2021	Nov	1050951.683	659161.4993	554409.1533	434612.7981	01 November 2021
2021	Dec	1047820.735	661568.1378	559811.4913	431434.0942	01 December 2021
2022	Jan	1044079.503	663809.14069	561145.82664	434067.90583	01 January 2022
2022	Feb	1048654.7606	662038.3598	557961.72869	435530.6095	01 February 2022
2022	Mar	1059571.7669	666861.29711	561293.31096	429475.14577	01 March 2022
2022	Apr	1069422.8003	672027.70767	571251.31642	433936.31983	01 April 2022
2022	May	1075659.5922	679504.04431	571463.98405	432323.52853	01 May 2022
2022	Jun	1078104.0256	687406.83036	584615.9771	439848.41289	01 June 2022
2022	Jul	1089657.8648	695699.34855	594806.43566	448171.80132	01 July 2022
2022	Aug	1112694.222	705826.90872	600291.57661	449290.6897	01 August 2022
2022	Sep	1114100.2815	708048.90977	601333.59277	448108.97427	01 September 2022
2022	Oct	1095928.2059	700007.81592	593263.99169	441586.98545	01 October 2022
2022	Nov	1109781.4443	701211.72069	594638.09617	442712.10644	01 November 2022
2022	Dec	1096172.7853	699304.21109	589368.23255	443223.27503	01 December 2022

Steps:

- I used Power BI to transform the data. I only used the average price columns and kept data from 2020 onwards.

Sales of houses borough wise

Before:

	City of London	Barking & Dagenham	Barnet	Bexley	Brent	Bromley	Camden	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammer-smith & Fulham	Haringey	Harrow	Havering	Hillingdon	Hounslow	Islington	Kensington & Chelsea	Kingston upon Thames	Lam
	E09000001	E09000002	E09000003	E09000004	E09000005	E09000006	E09000007	E09000008	E09000009	E09000010	E09000011	E09000012	E09000013	E09000014	E09000015	E09000016	E09000017	E09000018	E09000019	E09000020	E09000021	E0901
Jan-95	17	96	332	269	233	323	198	375	303	327	182	131	227	226	221	203	202	175	90	324	213	
Feb-95	7	95	327	207	220	326	194	342	242	302	174	115	185	223	175	198	256	145	102	207	185	
Mar-95	14	144	384	318	320	449	207	447	377	437	206	159	265	317	249	282	337	263	140	318	221	
Apr-95	7	109	304	253	249	362	174	377	270	337	176	141	258	244	236	297	255	211	125	293	194	
May-95	10	149	393	317	293	428	220	449	345	393	216	138	233	330	244	297	279	233	139	274	229	
Jun-95	17	148	436	324	311	431	248	466	353	428	233	175	291	303	256	274	311	350	184	294	262	
Jul-95	13	117	429	314	303	399	248	427	374	390	240	152	226	255	266	274	287	328	186	314	261	
Aug-95	14	150	425	297	341	453	259	480	377	411	240	131	298	282	285	274	345	372	154	279	278	
Sep-95	17	112	423	281	277	408	263	480	327	432	224	125	249	276	230	274	320	344	162	287	267	
Oct-95	14	120	396	274	282	392	245	423	352	377	203	133	235	307	223	227	276	322	146	243	232	
Nov-95	11	127	405	299	300	372	208	462	329	424	205	154	208	289	252	320	309	359	125	269	259	
Dec-95	18	109	435	259	283	399	224	444	348	443	208	155	247	267	218	238	276	349	146	304	270	
Jan-96	17	94	357	210	251	352	193	382	281	324	154	131	205	225	240	236	300	226	128	257	174	
Feb-96	10	154	358	228	209	375	181	358	291	334	180	132	191	248	228	211	266	256	129	220	190	
Mar-96	17	152	454	283	335	447	214	512	376	460	229	152	290	297	248	291	361	293	164	293	251	
Apr-96	14	125	470	291	275	441	260	478	359	381	183	126	284	256	255	254	318	301	164	324	268	
May-96	19	143	509	344	294	578	287	594	429	452	268	122	322	292	311	338	404	346	162	366	316	
Jun-96	28	142	554	345	291	485	282	452	400	444	211	155	307	288	282	297	408	373	201	305	279	
Jul-96	30	178	643	418	343	645	355	583	429	531	293	208	360	378	330	347	413	380	265	440	296	
Aug-96	25	164	574	373	347	635	340	617	508	497	279	183	381	377	339	429	465	363	233	426	359	
Sep-96	32	156	533	301	328	553	349	558	481	453	262	215	387	337	331	320	453	280	210	411	291	
Oct-96	33	172	594	384	350	625	344	612	548	457	262	193	386	373	362	369	489	331	217	364	319	
Nov-96	31	217	557	391	389	693	369	619	470	589	331	209	385	390	329	386	520	371	251	425	307	
Dec-96	26	184	548	387	344	602	354	660	500	552	311	220	402	368	336	323	417	341	222	440	347	
Jan-97	22	153	468	360	320	499	273	528	450	398	228	176	307	302	277	296	358	290	230	428	234	
Feb-97	37	169	461	347	283	522	293	556	414	407	202	183	258	334	248	280	391	312	192	375	290	
Mar-97	70	192	429	365	327	555	300	604	430	460	227	195	281	369	307	335	398	328	217	359	303	
Apr-97	19	175	516	379	315	570	336	595	455	469	230	191	364	355	291	364	371	341	249	410	308	
May-97	12	202	561	403	342	569	303	622	506	520	289	205	360	383	342	410	491	349	278	433	332	
Jun-97	21	203	599	442	364	664	330	664	530	568	303	240	380	362	377	355	436	382	318	439	360	
Jul-97	26	265	726	437	474	783	374	770	578	625	343	301	407	462	402	444	497	429	313	478	430	
Aug-97	9	244	604	466	398	652	334	692	545	539	307	285	373	380	384	413	452	436	292	357	406	
Sep-97	22	214	656	390	336	630	337	638	498	548	303	216	368	411	340	332	419	368	228	419	374	
Oct-97	22	244	608	389	412	687	374	663	563	528	351	253	356	400	397	361	463	431	255	341	350	
Nov-97	18	188	541	373	343	556	290	551	437	500	297	237	288	334	273	288	400	355	216	334	329	
Dec-97	37	185	519	355	335	577	323	553	456	519	311	293	335	370	344	378	370	399	256	334	380	
Jan-98	48	152	437	293	299	429	284	462	412	410	219	166	220	278	249	274	302	211	246	315	283	
Feb-98	43	153	439	302	256	425	206	523	341	416	224	172	224	249	248	225	326	237	203	236	219	
Mar-98	34	140	506	367	367	549	347	402	474	510	342	352	511	391	310	381	386	304	223	355	321	

After:

Borough	id	44743	44378	Variation	group	ctyua19nm	ctyua19nmw	bng_e	bng_n	long	lat	GlobalID
Barnet	E09000003	314	78	302.56%	3	Barnet	NA	523472	191753	-0.218210	51.611108	56b97304-c6f2-47c8-8333-b0047416a33c
City of London	E09000001	15	3	400.00%	4	City of London	NA	532381	181359	-0.093530	51.51565	c1d4bb2d-0636-4e04-8a60-bf9b8ce05a00
HammerSmith & Fulham	E09000013	205	50	310.00%	3	Hammersmith and Fulham	NA	523867	177993	-0.217350	51.48733	bd704c0a-20cc-4659-9d33-171c58ba1948
Haringey	E09000014	194	46	321.74%	3	Haringey	NA	531262	189349	-0.106670	51.58771	b0c216a4-0b53-4074-b0e8-3fc68bdc4ffe
Harrow	E09000015	209	44	375.00%	3	Harrow	NA	515356	189736	-0.336030	51.59467	84516652-b971-4df5-a801-141725d57150
Islington	E09000019	168	35	380.00%	3	Islington	NA	531158	184647	-0.109920	51.54548	0e80f7e4-63ea-4e1e-a4dd-3259eae3a7e
Southwark	E09000028	290	70	314.29%	3	Southwark	NA	533947	175866	-0.073060	51.46592	4f4afc54-f86f-4c55-8f5e-973731c0ac8f
Waltham Forest	E09000031	257	58	343.10%	3	Waltham Forest	NA	537327	190277	-0.018810	51.59461	246d074a-ec6e-422c-a9ec-7d891225da0e
Westminster	E09000033	217	53	309.43%	3	Westminster	NA	528268	180870	-0.152950	51.51220	1d3a0f09-f47c-42e3-a066-3fc2f367ec43

	Borough	id	44743	44378	Variation	group	ctyua19nm	ctyua19nmw	bng_e	bng_n	lon
1	Barking and Dagenham	E09000002	133	61	118.03%	1	Barking and Dagenham	NA	547757	185111	0.
2	Barnet	E09000003	314	78	302.56%	3	Barnet	NA	523472	191753	-0.
3	Bexley	E09000004	260	110	136.36%	1	Bexley	NA	549203	175435	0.
4	Brent	E09000005	179	60	198.33%	1	Brent	NA	519615	186468	-0.
5	Bromley	E09000006	422	127	232.28%	2	Bromley	NA	542036	165708	0.
6	Camden	E09000007	163	41	297.56%	2	Camden	NA	527492	184284	-0.
7	City of London	E09000001	15	3	400.00%	4	City of London	NA	532381	181359	-0.
8	Croydon	E09000008	386	170	127.06%	1	Croydon	NA	533922	164745	-0.
9	Ealing	E09000009	281	102	175.49%	1	Ealing	NA	517057	181960	-0.
10	Enfield	E09000010	224	69	224.64%	2	Enfield	NA	532829	196197	-0.
11	Greenwich	E09000011	261	102	155.88%	1	Greenwich	NA	542508	175878	0.
12	Hackney	E09000012	183	62	195.16%	1	Hackney	NA	534560	185787	-0.
13	HammerSmith & Fulham	E09000013	205	50	310.00%	3	Hammersmith and Fulham	NA	523867	177993	-0.
14	Haringey	E09000014	194	46	321.74%	3	Haringey	NA	531262	189349	-0.
15	Harrow	E09000015	209	44	375.00%	3	Harrow	NA	515356	189736	-0.
16	Havering	E09000016	288	140	105.71%	1	Havering	NA	555032	187514	0.
17	Hillingdon	E09000017	250	89	180.90%	1	Hillingdon	NA	508166	183120	-0.
18	Hounslow	E09000018	183	62	195.16%	1	Hounslow	NA	512742	174965	-0.
19	Islington	E09000019	168	35	380.00%	3	Islington	NA	531158	184647	-0.
20	Kensington & Chelsea	E09000020	169	46	267.39%	2	Kensington and Chelsea	NA	525757	179053	-0.
21	Kingston upon Thames	E09000021	182	67	171.64%	1	Kingston upon Thames	NA	519508	167389	-0.
22	Lambeth	E09000022	336	94	257.45%	2	Lambeth	NA	531118	175629	-0.
23	Lewisham	E09000023	330	108	205.56%	2	Lewisham	NA	537889	173344	-0.
24	Merton	E09000024	256	75	241.33%	2	Merton	NA	526069	169507	-0.
25	Newham	E09000025	182	84	116.67%	1	Newham	NA	540715	183344	0.
26	Redbridge	E09000026	185	82	125.61%	1	Redbridge	NA	543511	189478	0.
27	Richmond upon Thames	E09000027	295	78	278.21%	2	Richmond upon Thames	NA	519005	172650	-0.
28	Southwark	E09000028	290	70	314.29%	3	Southwark	NA	533947	175866	-0.
29	Sutton	E09000029	204	96	112.50%	1	Sutton	NA	527356	163640	-0.
30	Tower Hamlets	E09000030	247	122	102.46%	1	Tower Hamlets	NA	536343	181452	-0.

Steps:

- I used RStudio and Excel to transform data.
- I wanted to show the increase in sales of houses from July 2021 to July 2022 via a map, so I filtered the data for only both months and joined it with my shapefile for London boroughs in R Studio to create a map.
- For the dumbbell chart, I filtered the boroughs with the highest increase in sales of houses.

Average houses prices in London

Before:

		NORTH EAST	NORTH WEST	YORKS & THE HUMBER	EAST MIDLANDS	WEST MIDLANDS	EAST OF ENGLAND	LONDON	SOUTH EAST	SOUTH WEST	England
		E12000001	E12000002	E12000003	E12000004	E12000005	E12000006	E12000007	E12000008	E12000009	E92000001
	Jan-95	42,076	43,958	44,803	45,545	48,528	56,702	74,436	64,019	54,705	53,203
	Feb-95	42,572	43,925	44,529	46,052	49,341	56,594	72,778	63,715	54,356	53,096
	Mar-95	42,370	44,435	45,200	45,384	49,442	56,171	73,897	64,114	53,583	53,201
	Apr-95	42,096	44,268	45,614	46,124	49,456	56,568	74,455	64,623	54,786	53,591
	May-95	43,266	44,224	44,831	45,878	50,370	56,480	75,432	64,530	54,699	53,678
	Jun-95	42,315	44,113	45,393	45,680	50,100	56,289	75,606	65,511	54,420	53,735
	Jul-95	43,288	44,110	45,535	46,038	49,860	57,242	75,984	65,225	54,266	53,901
	Aug-95	41,899	44,194	45,111	45,923	49,598	56,732	75,329	64,852	54,366	53,600
	Sep-95	41,851	44,088	44,838	45,772	49,320	56,259	74,941	64,352	54,244	53,309
	Oct-95	41,688	43,110	44,310	45,155	49,598	55,240	74,302	64,126	54,265	52,845
	Nov-95	41,728	43,335	44,166	44,967	48,500	55,878	74,118	64,416	53,799	52,788
	Dec-95	42,303	43,374	44,458	45,649	49,030	55,524	75,178	64,261	53,081	52,922
	Jan-96	40,790	42,599	43,461	44,619	47,952	55,033	75,342	64,057	53,373	52,333
	Feb-96	40,722	43,081	43,815	44,506	48,646	55,316	76,087	63,770	53,255	52,536
	Mar-96	41,753	43,163	43,881	45,190	48,811	55,063	75,691	63,809	53,608	52,683
	Apr-96	41,588	43,390	44,539	45,704	48,753	55,822	76,767	64,985	54,762	53,331
	May-96	42,987	43,924	44,948	45,728	50,098	56,140	77,215	65,344	54,871	53,822
	Jun-96	42,848	43,872	45,127	46,149	49,846	56,601	78,139	65,927	55,076	54,093
	Jul-96	42,800	44,307	45,650	46,577	50,430	57,073	78,799	67,001	55,958	54,704
	Aug-96	43,374	44,595	45,531	47,067	51,189	57,951	79,058	67,333	56,224	55,107
	Sep-96	43,082	44,639	45,131	46,938	50,847	57,609	79,752	67,196	56,444	55,026
	Oct-96	42,537	44,473	44,874	46,520	50,979	57,669	79,504	67,133	56,786	54,931
	Nov-96	42,799	44,455	45,639	47,287	51,598	58,421	80,224	67,967	57,182	55,497
	Dec-96	42,636	44,641	45,251	47,642	51,418	58,964	81,417	68,772	56,951	55,755
	Jan-97	42,353	44,095	44,984	46,775	51,120	59,081	83,066	69,008	57,751	55,789
	Feb-97	42,574	44,691	44,759	47,346	51,443	59,684	83,579	69,675	57,921	56,199
	Mar-97	42,735	45,054	45,315	47,721	52,104	59,869	84,576	70,721	58,623	56,784
	Apr-97	43,976	44,946	46,306	48,694	52,548	60,358	86,088	71,955	59,538	57,577
	May-97	44,090	45,704	46,634	49,019	53,616	61,737	88,544	73,359	59,732	58,498
	Jun-97	44,628	46,450	46,880	48,966	53,806	62,774	89,231	74,440	60,592	59,140
	Jul-97	45,566	46,223	47,040	50,205	54,310	64,183	92,129	75,787	61,532	60,089
	Aug-97	44,793	46,873	47,219	50,607	55,301	64,667	92,120	77,465	62,591	60,750
	Sep-97	43,770	46,959	47,201	50,400	54,852	65,007	94,180	78,067	62,991	60,991
	Oct-97	43,996	46,519	46,545	50,159	54,235	66,077	93,918	79,067	63,110	61,048
	Nov-97	44,040	46,719	46,774	50,805	54,736	65,528	95,084	79,955	64,054	61,499
	Dec-97	44,379	46,266	46,228	50,342	55,536	66,206	96,963	79,839	63,445	61,564
	Jan-98	44,246	46,309	46,763	50,771	55,163	66,899	97,914	79,976	64,148	61,902
	Feb-98	43,510	45,834	46,888	50,386	55,109	66,739	96,944	80,218	63,963	61,659
	Mar-98	44,786	46,318	46,612	50,540	55,160	66,989	98,934	81,185	64,870	62,253
	Apr-98	45,039	47,647	47,370	51,973	56,192	68,585	101,287	83,176	66,258	63,666
	May-98	45,169	48,398	47,866	52,334	56,858	69,688	101,077	83,993	67,018	64,277
	Jun-98	45,962	48,056	47,774	52,423	57,404	70,045	102,891	85,019	66,736	64,637

After:

⚠ There are pending changes in your queries that haven't been applied.																	Apply changes		Discard changes			
✕	✓																					
Date	City of London	Barking & Dagenham	Barnet	Bexley	Brent	Bromley	Camden	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith & Fulham	Haringey	Harrow	Havering	Hillingdon					
01 January 2020	773,786		303055	521434	336780	428085	434197	828578	372872	467419	389480	397511	555696		722291	553229	447344	360851	405030			
01 February 2020	800,016		302897	516660	339026	468311	433716	819659	372862	467258	389691	397398	570774		737298	540883	450393	363718	404051			
01 March 2020	836,241		301413	522115	339182	466250	432310	854443	371007	480330	392339	394446	578130		717721	543929	450484	365418	409234			
01 April 2020	920,444		293803	526689	341553	470601	433426	862077	370032	480314	395240	395917	579285		698951	544722	451482	369485	403517			
01 May 2020	918,209		293816	526033	339353	482808	425300	855338	373805	473283	391460	392507	576964		680111	549665	445417	367940	407142			
01 June 2020	882,872		300526	518175	340893	484160	425444	837719	372414	463424	385347	387218	571464		718768	546376	441942	371148	403039			
01 July 2020	786,672		304556	523280	344091	482303	428557	807904	377278	466117	386065	386101	584128		748437	547778	445805	373192	408573			
01 August 2020	827,659		304924	529660	346680	497729	433423	824742	374030	483810	397145	389491	584804		758825	565432	452524	375067	410161			
01 September 2020	798,499		301702	533619	345061	519562	435060	839032	377322	490928	399742	399104	607150		753481	570180	454163	373312	410314			
01 October 2020	836,807		304852	530354	345405	522239	437146	827264	376775	492156	406689	400074	592287		732566	587339	457572	372050	414765			
01 November 2020	769,392		305012	528016	346253	513101	445155	815443	381292	495014	405835	403991	597591		745044	581958	468407	373927	415695			
01 December 2020	801,999		309560	532528	352261	495067	453389	786159	380132	495499	412872	410102	589272		728847	584144	474609	378206	426362			
01 January 2021	758,077		312740	539456	355867	514041	456479	799565	381000	499133	417034	407971	593821		717141	590704	474490	380518	427090			
01 February 2021	727,872		314820	539250	358118	506770	452733	795318	383398	497789	420566	407621	596905		702193	582739	481157	384365	427817			
01 March 2021	725,635		311911	542160	358856	513100	453171	805321	390487	501982	422285	409008	592641		717193	575885	485776	384528	425448			
01 April 2021	748,815		310454	534687	358992	493682	455807	810042	393783	498632	420527	404572	577155		739881	557785	489447	385228	426391			
01 May 2021	756,082		309571	538012	359007	507153	460556	821255	393858	496876	416529	400542	569742		738465	557673	486798	386164	424419			
01 June 2021	773,492		314031	546801	362288	514005	467240	812856	394957	499212	419479	408770	580153		736103	561604	486106	387167	426840			
01 July 2021	948,729		309541	541711	365740	525506	469521	872821	393696	507125	418889	395225	612938		793436	558467	480829	387842	427570			
01 August 2021	953,551		313791	553311	370500	519287	471441	872473	396512	514378	426401	401174	621941		840993	576346	480739	390818	431997			
01 September 2021	954,884		315039	554752	371846	517734	471614	872300	397651	512025	428052	396424	616610		853871	582330	485800	397720	435108			
01 October 2021	793,389		326713	568918	374878	512019	474874	872239	403498	516798	433225	411397	583362		798266	594597	487896	399975	439219			
01 November 2021	799,675		328531	572810	377659	519123	479553	859689	405719	515563	432512	410962	585104		768759	585387	492344	403196	442969			
01 December 2021	809,376		330851	574877	378365	522416	478676	884055	407217	515679	432086	408643	596044		771330	576528	499746	404741	440276			
01 January 2022	827,267		333413	576828	380503	516378	474589	871941	402466	516289	432462	408516	623151		755407	586099	502193	409448	437531			
01 February 2022	847,355		336110	577116	382201	513112	478450	867681	404395	516779	432562	409110	635410		756400	588819	509841	405147	439505			
01 March 2022	823,358		335997	573416	385473	508996	480490	881723	408945	514786	434540	412079	632329		748183	589680	502841	407004	445043			
01 April 2022	811,966		331539	579463	383749	520404	485978	877663	411513	511694	440518	411246	605383		741940	577982	497140	414019	445947			
01 May 2022	795,880		334373	582040	385093	530229	491328	875542	413257	515370	446560	421409	596197		744021	580593	501931	418759	448089			
01 June 2022	817,584		344212	587653	388883	534879	501108	841044	412846	524534	446633	428669	614033		770286	582304	513821	420751	452921			
01 July 2022	823,678		349020	589492	394023	576730	504676	846326	417626	534734	445423	432128	632167		792627	588798	528803	421255	457389			
01 August 2022	851,509		350685	600983	400357	559693	511067	857716	424872	537326	451030	432557	648929		815369	595400	530636	423337	461281			
01 September 2022	848,510		351028	605828	402705	578083	514012	857549	431993	538647	454192	440630	652742		811484	610322	530682	428604	466411			
01 October 2022	876,105		351787	605503	407957	570147	818053	849583	433165	536932	461587	442646	651336		787756	611033	562733	432719	471640			
01 November 2022	946,498		355142	596175	405578	566138	816783	841969	431572	537877	461870	442659	648108		755639	618256	560602	435852	473731			

Annual variation in private rents

Before:

Summary by London Borough							
Borough	May-23	Apr-23	May-22	May-18	Monthly Var.	Annual Var.	
Bexley and Greenwich	£1,753	£1,719	£1,500	£1,333	2.00%	16.90%	
Hackney and Newham	£1,951	£1,909	£1,672	£1,521	2.20%	16.70%	
Bromley	£1,796	£1,799	£1,547	£1,382	-0.20%	16.10%	
Barking, Dagenham and Havering	£1,577	£1,522	£1,374	£1,228	3.60%	14.80%	
Ealing	£1,916	£1,871	£1,683	£1,482	2.40%	13.80%	
Redbridge and Waltham Forest	£1,591	£1,540	£1,400	£1,259	3.30%	13.60%	
Lewisham and Southwark	£2,029	£1,989	£1,790	£1,653	2.00%	13.40%	
Croydon	£1,409	£1,409	£1,250	£1,091	0.00%	12.70%	
Lambeth	£2,551	£2,448	£2,265	£2,001	4.20%	12.60%	
Barnet	£1,980	£1,924	£1,764	£1,523	2.90%	12.20%	
Harrow and Hillingdon	£1,678	£1,648	£1,504	£1,359	1.80%	11.60%	
Wandsworth	£2,371	£2,283	£2,132	£1,719	3.90%	11.20%	
Tower Hamlets	£2,122	£2,132	£1,919	£1,736	-0.50%	10.60%	
Brent	£2,001	£1,968	£1,816	£1,567	1.70%	10.20%	
Haringey and Islington	£2,060	£2,016	£1,875	£1,620	2.20%	9.90%	
Hammersmith, Fulham, Kensington and Chelsea	£2,584	£2,554	£2,373	£1,930	1.20%	8.90%	
Merton, Kingston upon Thames and Sutton	£1,769	£1,765	£1,635	£1,323	0.20%	8.20%	
Enfield	£1,762	£1,700	£1,638	£1,370	3.60%	7.60%	
Westminster	£3,174	£3,130	£2,984	£2,227	1.40%	6.40%	
Hounslow and Richmond upon Thames	£1,767	£1,726	£1,662	£1,419	2.40%	6.30%	
Camden, City of London	£2,318	£2,283	£2,211	£2,224	1.50%	4.80%	

After:

	Borough	id	annual_var	group
1	Barking and Dagenham	E09000002	14.80%	5
2	Barnet	E09000003	12.20%	5
3	Bromley	E09000006	16.10%	5
4	Croydon	E09000008	12.70%	5
5	Ealing	E09000009	13.80%	5
6	Greenwich	E09000011	16.90%	5
7	Hackney	E09000012	16.70%	5
8	Havering	E09000016	14.80%	5
9	Lambeth	E09000022	12.60%	5
10	Lewisham	E09000023	13.40%	5
11	Newham	E09000025	16.70%	5
12	Redbridge	E09000026	13.60%	5
13	Southwark	E09000028	13.40%	5
14	Waltham Forest	E09000031	13.60%	5

Borough	id	annual_var	group	ctyua19nm	ctyua19nmw	bng_e	bng_n	long	lat	GlobalID	geometry
Barking and Dagenham	E09000002	14.80%	5	Barking and Dagenham	NA	547757	185111	0.129479	51.54555	4c6fdb88-2eb8-498d-a3c8-33ae5ed39387	MULTIPOLYGON (((54888
Barnet	E09000003	12.20%	5	Barnet	NA	523472	191753	-0.218210	51.61108	56b97304-c6f2-47c8-8333-b0047416a33c	MULTIPOLYGON (((52457
Bromley	E09000006	16.10%	5	Bromley	NA	542036	165708	0.039246	51.37267	e6134642-39cf-449e-80d8-135b915903e3	MULTIPOLYGON (((54138
Croydon	E09000008	12.70%	5	Croydon	NA	533922	164745	-0.077610	51.36598	498a13aa-3d25-4b7a-9db6-77b867918982	MULTIPOLYGON (((53144
Ealing	E09000009	13.80%	5	Ealing	NA	517057	181960	-0.314070	51.52443	5c3aebaa-e7f3-4d1f-942b-2c273d74a9e5	MULTIPOLYGON (((51500
Greenwich	E09000011	16.90%	5	Greenwich	NA	542508	175878	0.050107	51.46393	47c19c5f-bdee-4707-892d-0e1b39d3bd6d	MULTIPOLYGON (((54722
Hackney	E09000012	16.70%	5	Hackney	NA	534560	185787	-0.060450	51.55492	b90061d5-10db-4f23-a1e2-2c939caa5a07	MULTIPOLYGON (((53453
Havering	E09000016	14.80%	5	Havering	NA	555032	187514	0.235368	51.56519	8258c57f-08ea-40e3-9ec7-c46b23c7d5c2	MULTIPOLYGON (((55459
Lambeth	E09000022	12.60%	5	Lambeth	NA	531118	175629	-0.113850	51.46445	1b9c8f58-49e8-4584-9c64-5cfbe1416f8c	MULTIPOLYGON (((53134
Lewisham	E09000023	13.40%	5	Lewisham	NA	537889	173344	-0.017330	51.44231	871c07d8-a966-4949-b532-f7be3a4b5c9c	MULTIPOLYGON (((53687
Newham	E09000025	16.70%	5	Newham	NA	540715	183344	0.027289	51.53147	88116304-b6e5-4a86-8eec-4a3b0f4da98d	MULTIPOLYGON (((54264
Redbridge	E09000026	13.60%	5	Redbridge	NA	543511	189478	0.070071	51.58589	76e1220d-4772-4933-a879-5eb4322f4e0e	MULTIPOLYGON (((54003
Southwark	E09000028	13.40%	5	Southwark	NA	533947	175866	-0.073060	51.46592	4f4afc54-f86f-4c55-8f5e-973731c0ac8f	MULTIPOLYGON (((53156
Waltham Forest	E09000031	13.60%	5	Waltham Forest	NA	537327	190277	-0.018810	51.59461	246d074a-ec6e-422c-a9ec-7d891225da0e	MULTIPOLYGON (((53792
NA	E09000001	NA	NA	City of London	NA	532381	181359	-0.093530	51.51565	c1d4bb2d-0636-4e04-8a60-bf9b8ce05a00	MULTIPOLYGON (((53214
NA	E09000004	NA	NA	Bexley	NA	549203	175435	0.146227	51.45823	ee919d88-6ecd-4010-b39b-c9b9825556c	MULTIPOLYGON (((54985

Steps:

- I used RStudio and Excel to transform data.
- I wanted to show the boroughs with 12% and above annual variance from May 2022 to May 2023 via a map so I selected the boroughs with the highest variance by filtering them out in Excel and then joined it with my shapefile for London boroughs in R Studio to create a map.

Rent to income ratio.

Before:

Rent to Income Ratios – UK, London, and the North East			
Date	UK	Greater London	North East
Jul-14	27.0%	28.2%	22.4%
Aug-14	26.8%	28.1%	22.3%
Sep-14	26.8%	28.3%	22.6%
Oct-14	26.9%	28.6%	23.3%
Nov-14	27.3%	28.8%	23.8%
Dec-14	27.7%	29.2%	23.2%
Jan-15	27.8%	29.2%	23.1%
Feb-15	27.7%	29.0%	23.1%
Mar-15	27.5%	29.2%	23.4%
Apr-15	27.6%	29.6%	23.6%
May-15	27.5%	29.7%	23.4%
Jun-15	27.5%	29.6%	23.7%
Jul-15	27.4%	29.1%	24.5%
Aug-15	27.2%	29.1%	24.3%
Sep-15	27.2%	29.4%	23.8%
Oct-15	27.4%	29.8%	23.2%
Nov-15	27.7%	30.3%	22.8%
Dec-15	28.2%	31.2%	22.7%
Jan-16	28.5%	31.9%	22.3%
Feb-16	28.9%	32.8%	22.5%
Mar-16	29.3%	33.1%	23.2%
Apr-16	29.6%	33.2%	23.2%
May-16	29.6%	33.3%	24.0%
Jun-16	29.8%	33.5%	24.1%
Jul-16	29.6%	33.4%	23.9%
Aug-16	29.2%	32.7%	23.7%
Sep-16	28.4%	31.6%	22.8%
Oct-16	27.8%	30.8%	22.1%
Nov-16	27.6%	30.4%	21.8%
Dec-16	28.0%	31.0%	22.1%
Jan-17	28.4%	31.7%	22.6%
Feb-17	28.6%	32.1%	23.9%
Mar-17	28.6%	31.9%	24.1%
Apr-17	28.7%	31.8%	24.2%
May-17	28.9%	31.4%	23.9%
Jun-17	28.6%	31.1%	23.7%
Jul-17	28.1%	30.8%	23.6%
Aug-17	27.6%	30.6%	23.6%
Sep-17	27.2%	30.6%	22.8%

After:

Date ▾	UK ▾	Greater London ▾
01 May 2021	30.50%	34.00%
01 May 2022	30.50%	34.00%
01 May 2023	31.40%	36.20%

Steps:

- I only kept data for UK and London of the month May because I only wanted to show the different in the rent to income ratio for the period 2021 to 2023.

UK vs London Average Rents

Before:

Variation Between UK and Greater London Average Rental Values				
Date	Average UK rental value	Average rental value	Variation in rental values	
		Greater London	(£)	(%)
Jul-14	£836	£1,397	£561	67.0%
Aug-14	£846	£1,420	£574	67.9%
Sep-14	£844	£1,411	£567	67.2%
Oct-14	£842	£1,399	£557	66.1%
Nov-14	£840	£1,385	£546	65.0%
Dec-14	£845	£1,402	£557	65.9%
Jan-15	£849	£1,412	£563	66.3%
Feb-15	£853	£1,427	£574	67.3%
Mar-15	£855	£1,430	£575	67.3%
Apr-15	£862	£1,451	£590	68.5%
May-15	£864	£1,457	£593	68.6%
Jun-15	£869	£1,472	£603	69.4%
Jul-15	£875	£1,467	£592	67.6%
Aug-15	£882	£1,484	£602	68.3%
Sep-15	£880	£1,503	£623	70.8%
Oct-15	£874	£1,500	£626	71.6%
Nov-15	£872	£1,494	£621	71.2%
Dec-15	£877	£1,478	£601	68.5%
Jan-16	£882	£1,490	£609	69.0%
Feb-16	£888	£1,514	£626	70.5%
Mar-16	£894	£1,527	£633	70.8%
Apr-16	£900	£1,537	£637	70.8%
May-16	£904	£1,548	£644	71.3%
Jun-16	£910	£1,564	£654	71.9%
Jul-16	£915	£1,572	£657	71.7%
Aug-16	£917	£1,568	£652	71.1%
Sep-16	£908	£1,563	£655	72.1%
Oct-16	£901	£1,547	£646	71.7%
Nov-16	£898	£1,532	£634	70.6%
Dec-16	£892	£1,508	£616	69.0%
Jan-17	£888	£1,497	£609	68.5%
Feb-17	£895	£1,520	£625	69.8%
Mar-17	£904	£1,546	£641	70.9%
Apr-17	£904	£1,519	£616	68.1%
May-17	£901	£1,502	£601	66.7%
Jun-17	£908	£1,524	£616	67.8%
Jul-17	£925	£1,564	£639	69.1%
Aug-17	£939	£1,609	£670	71.4%
Sep-17	£927	£1,592	£665	71.9%

After:

Date	Average UK rental value	Average rental value Greater London
01 January 2021	981	1563
01 February 2021	984	1572
01 March 2021	992	1586
01 April 2021	996	1580
01 May 2021	997	1583
01 June 2021	1007	1607
01 July 2021	1029	1645
01 August 2021	1053	1713
01 September 2021	1061	1752
01 October 2021	1059	1759
01 November 2021	1058	1757
01 December 2021	1060	1752
01 January 2022	1064	1760
01 February 2022	1069	1757
01 March 2022	1078	1770
01 April 2022	1091	1804
01 May 2022	1103	1832
01 June 2022	1113	1846
01 July 2022	1127	1868
01 August 2022	1143	1898
01 September 2022	1159	1945
01 October 2022	1171	1989
01 November 2022	1175	2011
01 December 2022	1174	2007
01 January 2023	1172	1989
01 February 2023	1175	1975
01 March 2023	1184	1979
01 April 2023	1199	2003
01 May 2023	1213	2039

Steps:

- I used Power BI to transform data. I only kept the average price columns.
- I deleted the data before the year 2021.

Data Analysis

Private Rent

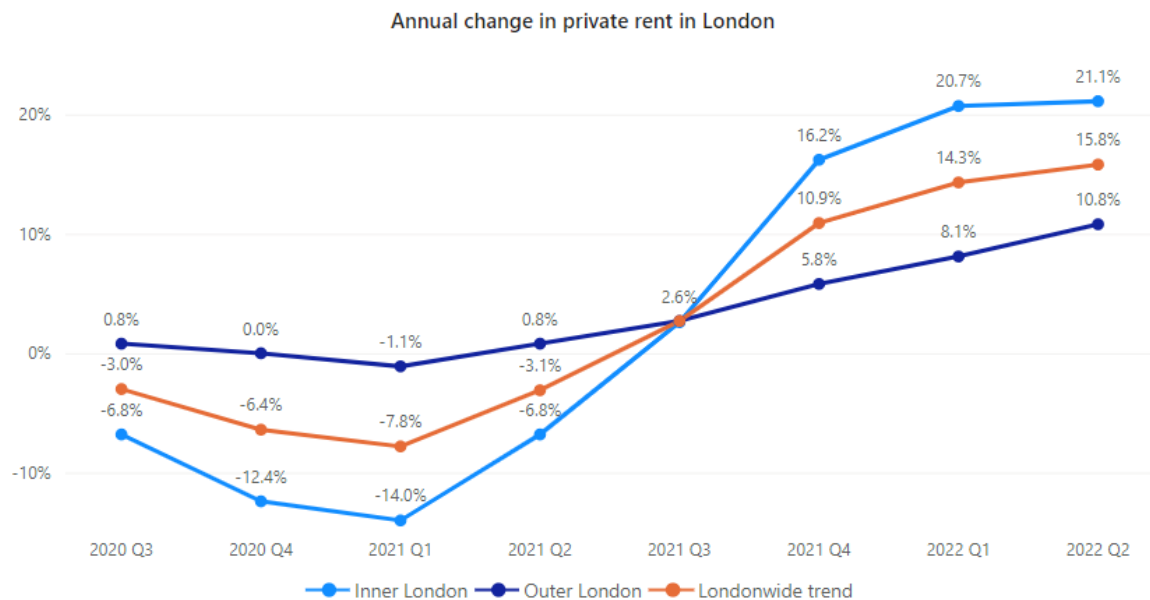


Figure 1. Annual change in private rent from 2020 to 2022

The property market froze during the Covid-19 pandemic as the government urged people to not move and continued to decrease till 2021 Q1. We see that the rents started increasing in 2021 Q1 and continued to rise reaching its peak at 14.3% for London-wide in 2022 Q2 also when the inflation rate was increasing hitting its peak in October 2022. The increasing rate of inflation meant that the Bank of England also increased its interest rate to curb inflation which meant the rate of mortgages going up high putting the pressure of extra costs onto the tenants. Another cause was the limited UK gas supply due to the Ukraine-Russian war, which began in February 2022. As a result, energy costs increased, forcing landlords to raise rents.

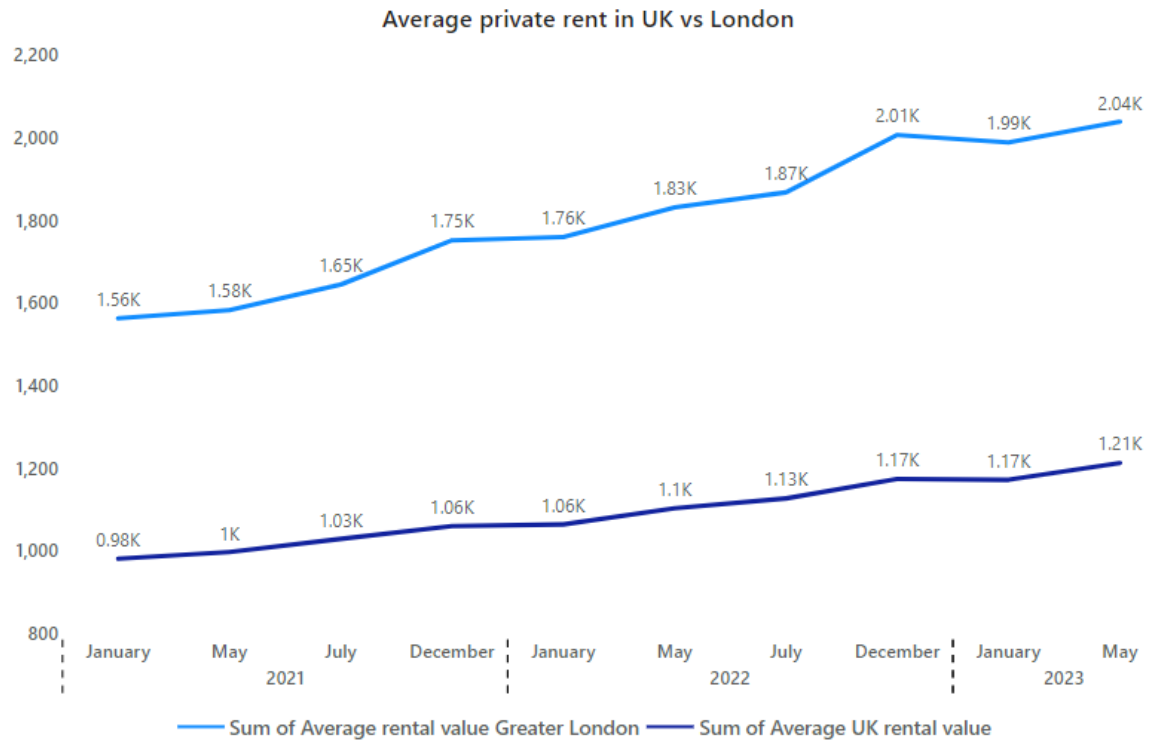


Figure 2. Average rent in London vs the UK over the years 2021 to 2023

It is quite evident from a comparison of private rentals between the UK and London that London rental costs are nearly twice as high as those in the rest of the UK. As a major city with a robust economy, London normally has a high demand for property. Food, transport and other costs of living in London are already higher than in the rest of the UK, and the rising cost of living crisis has caused rent to rise significantly to 2.01K from July to December, when inflation was at its highest in October 2022, compared to the UK's steady increase to 1.17K.

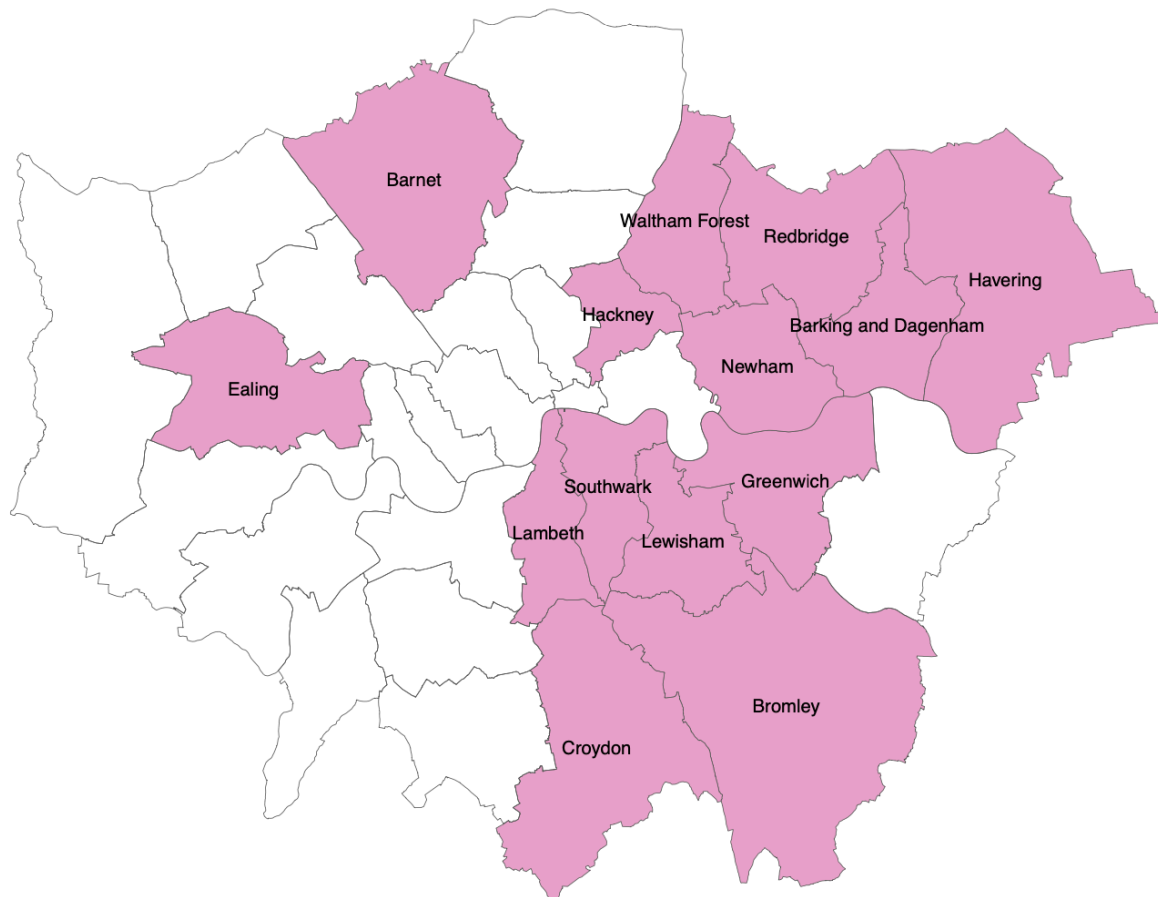


Figure 3. –Boroughs with annual increase in private rents of 12% and above

In Figure 3, we can see the boroughs that had the highest spike in private rent. The cost-of-living crisis has led to an increase in private rents in outer London. According to a recent report by SpareRoom, the number of people looking for a room to rent in outer London has increased by 20%. This is because people who can no longer afford to live in central London are moving to the outer boroughs, which has increased demand for housing in those areas.

East London rents particularly went up high because ever since the Elizabeth Line launched in May 2022, it has made it much easier for people to commute to central London. According to a recent report by Goodlord, rents in east London have increased by 15% in the year since the Elizabeth Line opened. It appears that because of the easy commute, East London was favoured when people chose to move outside London.

Percentage of income spent on rent London vs UK

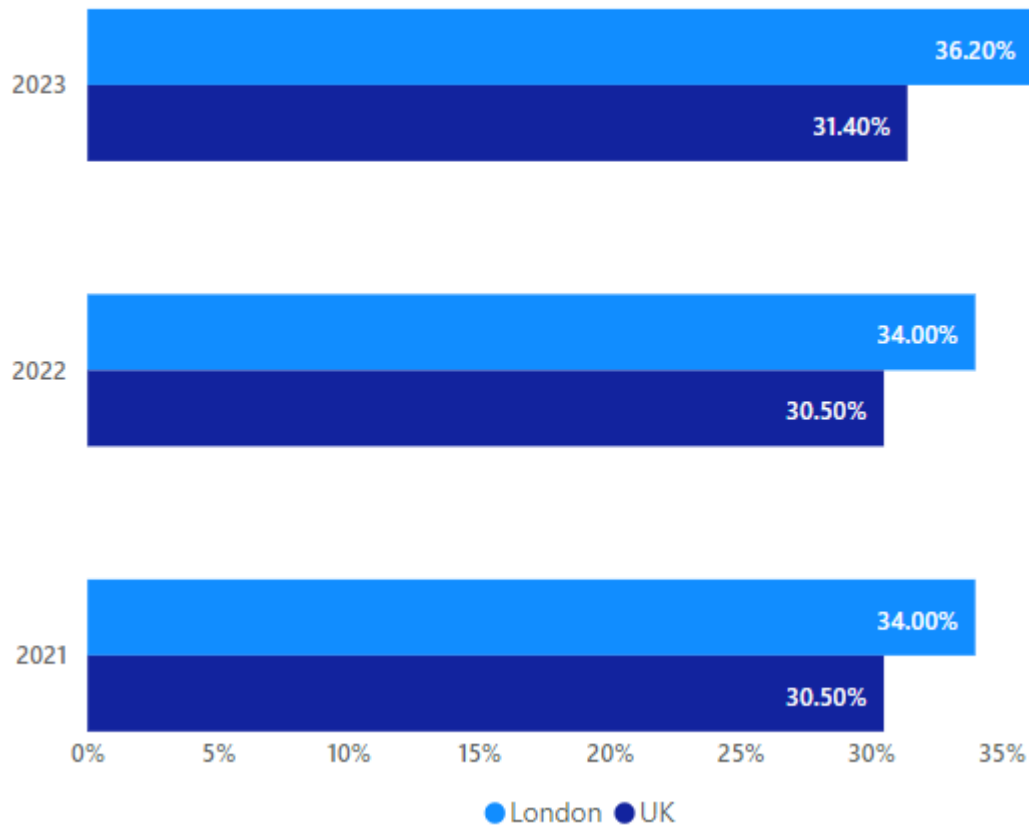


Figure 4. Comparison of percentage of income spent on rent in London vs UK

This bar graph compares the rent-to-income ratios in London and the UK for the years 2021 to 2023, and it is clear that London has a greater proportion. After the COVID-19 pandemic, people started coming back to offices again between 2022 and 2023, which raised the demand for houses in London. Additionally, the cost of living in London has been increasing at a faster rate than the cost of living in the rest of the UK. This has put upward pressure on rents, making it even more difficult for people to afford housing in London. The figures don't cover the entire year because we only had the data up to May 2023, but they do give us a sense of how London's rent is becoming less and less affordable with the increasing cost of living.

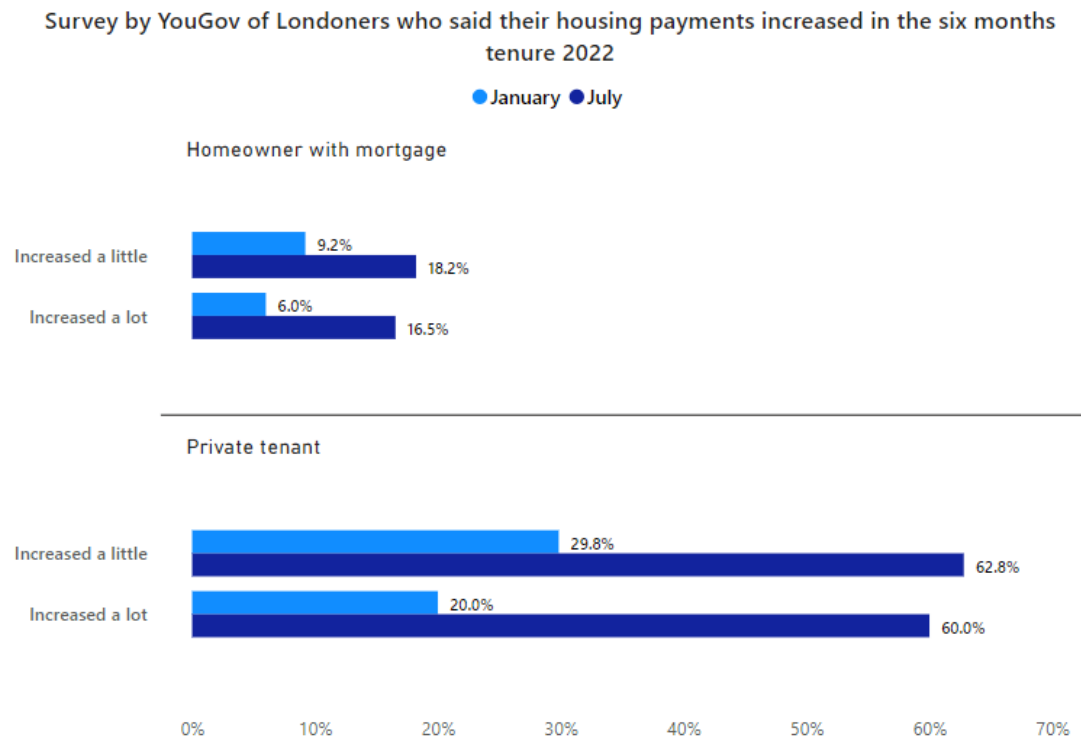


Figure 8. Survey by YouGov

This is a survey that was done by YouGov and it contains the response for the month January and July 2022. We can see that how the response changed within the 6 months as inflation spiked from 5.5% in January 2022 to 10.1% in July 2022.

House Prices

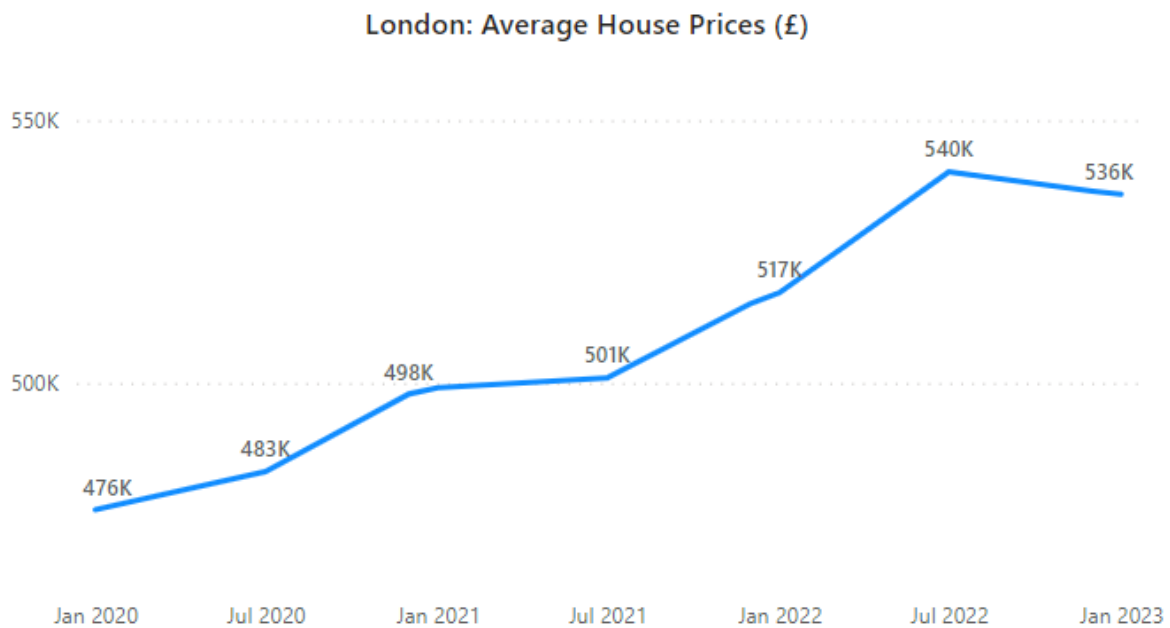


Figure 6. Average House Prices in London

The average house price in London is depicted in this line graph; it started to rise in January 2020 and sharply grew from 2021 to 2022, reaching its peak in July 2022. This is primarily because by the end of 2021, working from home became increasingly prevalent, and people were searching for homes because they needed more space to set up their home offices. However, the main factor was the low-interest rate of 1.25%, which resulted in lower mortgage payments and more affordable borrowing. Following a sharp rise in inflation, the Bank of England started raising interest rates, eventually reaching 3.5% in January 2023. As a result, demand fell and prices began to fall after January 23, as people who were considering purchasing a home were unable to do so due to the higher interest rates.

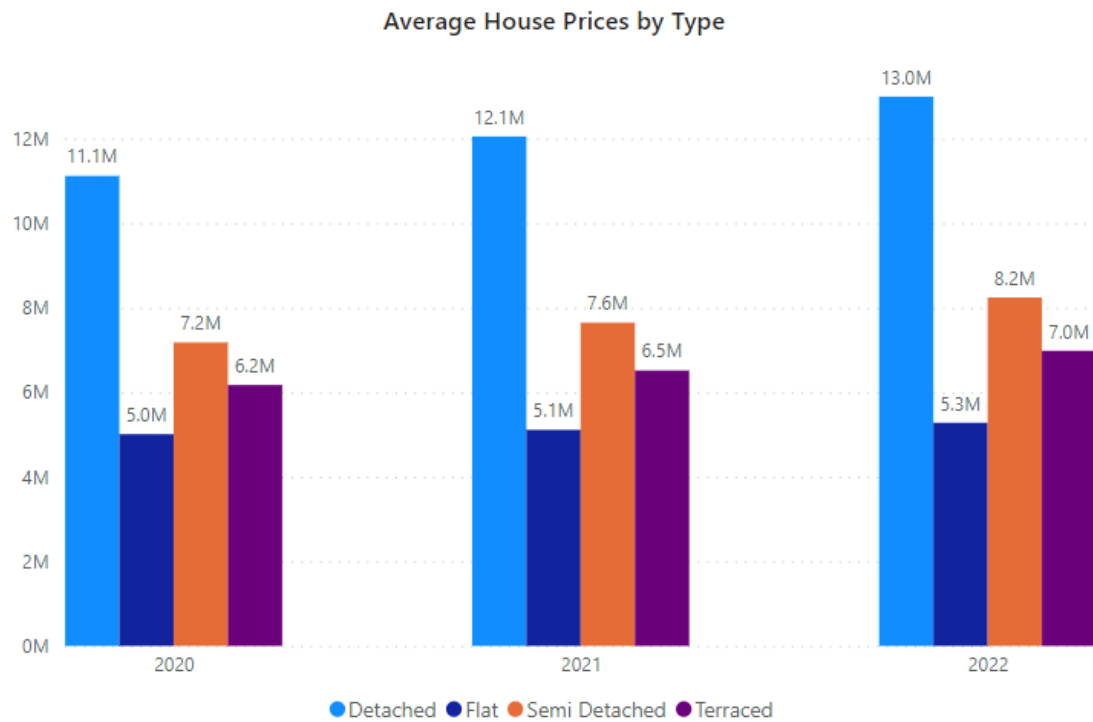


Figure 7. Average House Prices in London by Type

Figure 7 contains a bar chart that depicts the price growth of various house types from 2020 to 2022. From 2020 to 2022, we can observe that there is a consistent rise in every type of house.

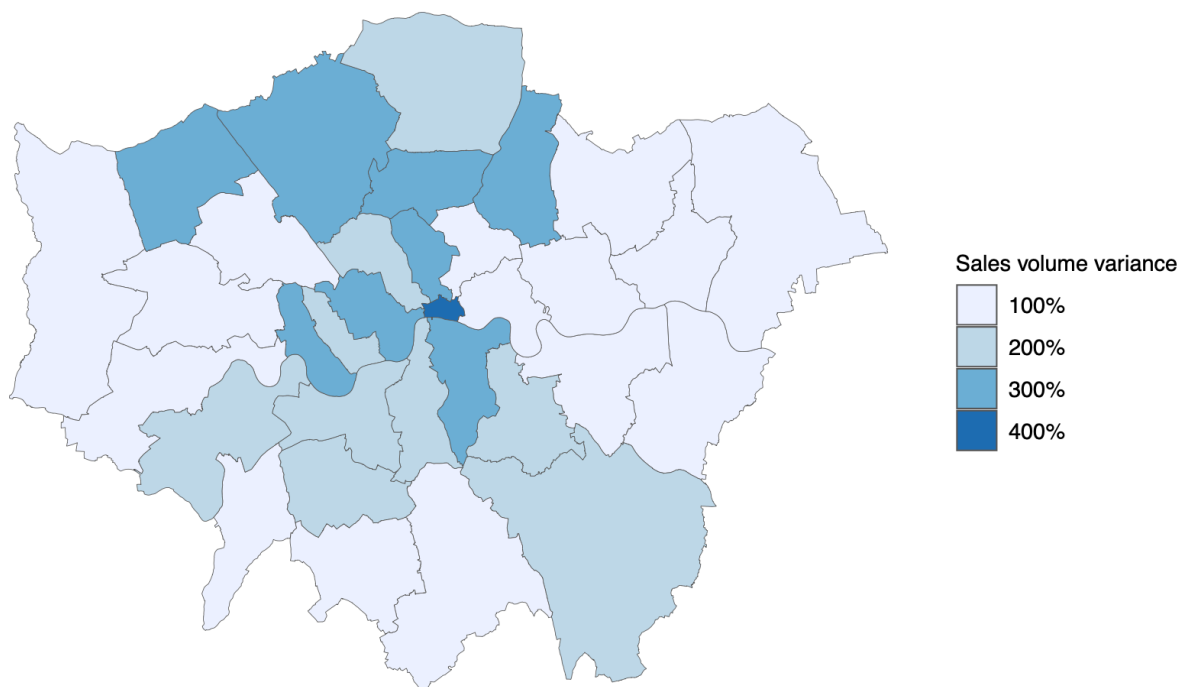


Figure 8. Map showing an increase in sales of houses in each borough.

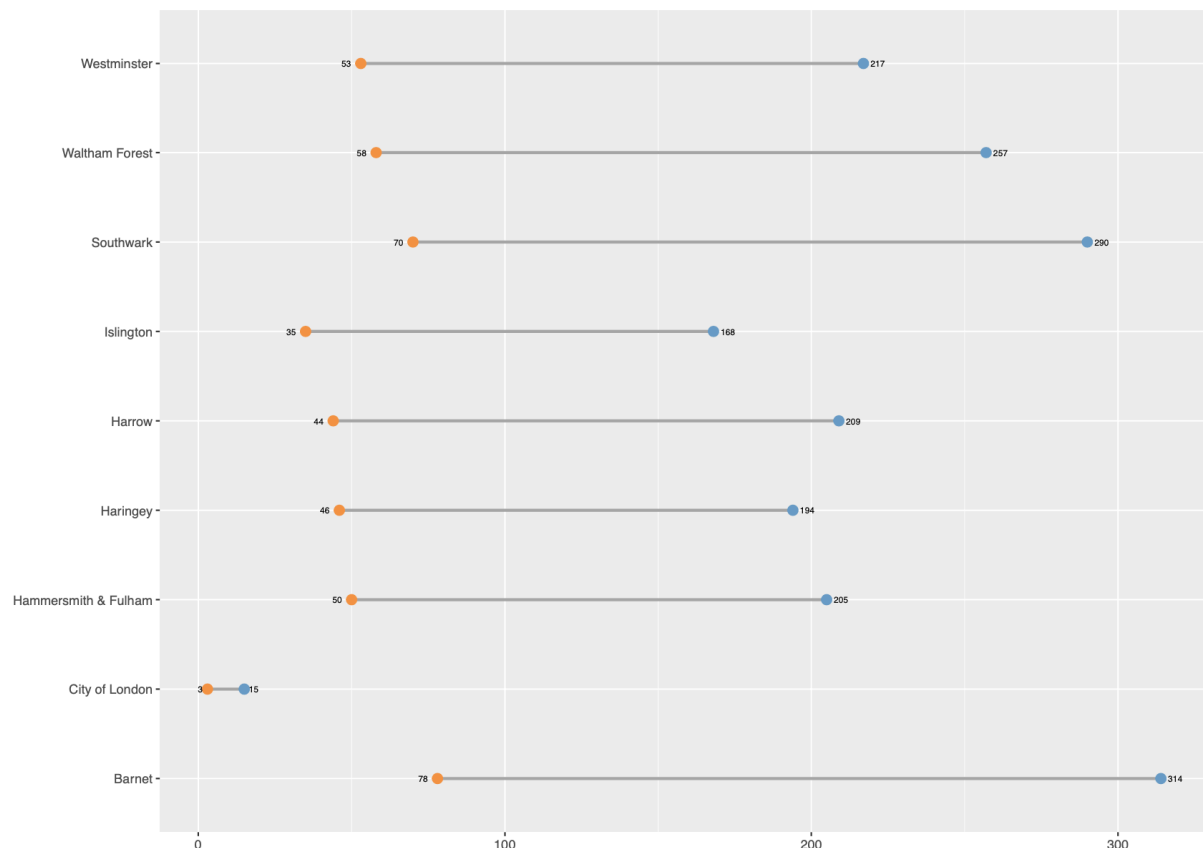


Figure 8. Dumbbell chart representing boroughs with the highest sales of houses.

Figure 7 illustrates that there was a rise in sales of homes across all boroughs, and Figure 8 lists the boroughs with the greatest increases in sales. Overall, we observed that house sales surged in 2022 because of low mortgage rates and that people wanted bigger spaces once Covid made working from home a reality. Even though inflation was rising at the time, banks were still offering low borrowing rates, which encouraged consumers to purchase homes.

Conclusion:

In conclusion, if we discuss the private rental market, we can see that from 2021 to 2023, there was a sharp rise in rentals in London, and that trend has continued. Due to the dramatic rise in energy costs caused by the energy crisis the UK was experiencing because of the conflict between Ukraine and Russia that began in February, landlords substantially increased rental rates. In addition, the interest rate was constantly rising, causing the mortgages to go up and placing further financial strain on the tenants. Also, first-time buyers who were planning to buy a home turned to renting when they found themselves unable to afford the home they had been hoping to buy, which increased the demand for rental homes.

In terms of the housing market, we can see that it became quite busy after 2021 and that home sales increased even while inflation was on the rise. This was owing to the relatively low-interest rate, which also led to prices rising because of increased demand. Inflation peaked in October 2022 at 11.1%. The Bank of England then made the decision to raise the

interest rate, which caused mortgage rates to rise and demand to fall, which resulted in lower prices after July 2022.

Visualizations:

Chart Designs:

I wanted to show a comparison of prices between certain time periods, so I decided to go with line charts as they represent changes in trends over time and are the best type of visualization to represent time series data. I made use of bar charts because they are very simple and straightforward to understand and a good option for comparison. They are a good option for showing sales, price, and survey results. I also chose to use Maps when showing data for boroughs because maps are good to identify patterns and trends and are good for showing spatial relationships between different data points.

Colors:

I primarily used the colours blue and orange because they are color-blind friendly for line charts and some bar charts. I picked pink for the private rent increase map's display because there was only one colour utilized, thus colour-blind individuals won't have any problems.

Chart-junk and data-ink ratio:

I attempted to keep the visualization as simple as possible by just displaying relevant data and keeping the data-ink ratio as high as feasible. For instance, I only highlighted the boroughs with the biggest yearly fluctuation in private rents. I didn't add any extra x and y labels because the labels were quite self-explanatory. I did not utilize any background or 3D effects, extra gridlines, or axis ticks.