

COUNTRY EXPOSURE MODEL

Review main statistic of a exposure model and create summaries for a given Country.

/home/risk/venvs/py38w/lib/python3.8/site-packages/geopandas/_compat.py:111: UserWarning: The Shapely GEOS version (3.9.1-CAPI-1.14.2) is incompatible with the GEOS version PyGEOS was compiled with (3.10.1-CAPI-1.16.0). Conversions between both will be slow.
warnings.warn(

```
# Parameters  
country = "Azerbaijan"
```

Exposure files:
Exposure_Com_Azerbaijan.csv
Exposure_Ind_Azerbaijan.csv
Exposure_Res_Azerbaijan.csv

Sanity checks and formats

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	10.0M	2,123.0K	\$136.3B	94.44%	78.15%
Ind	0.0M	42.5K	\$14.2B	1.89%	8.16%
Com	0.0M	82.5K	\$23.9B	3.67%	13.69%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	350.2M	\$141.6B	156	\$498
Res	304.1M	\$118.0B	143	\$448
Ind	17.6M	\$7.6B	414	\$809
Com	28.5M	\$16.0B	345	\$839

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Baku	\$40,071.3M	512,269	2,292.8K	22.98%	22.79%	22.83%
Sumgait	\$6,023.0M	77,143	345.2K	3.45%	3.43%	3.44%
Ganja	\$5,853.2M	74,981	335.5K	3.36%	3.34%	3.34%
Lankaran	\$4,002.9M	51,413	230.0K	2.30%	2.29%	2.29%
Masally	\$3,958.0M	50,877	227.5K	2.27%	2.26%	2.27%
Jalilabad	\$3,915.9M	50,331	225.1K	2.25%	2.24%	2.24%
Shamkir	\$3,815.9M	49,043	219.3K	2.19%	2.18%	2.18%
Absheron	\$3,720.7M	47,818	213.9K	2.13%	2.13%	2.13%
Aghdam	\$3,544.2M	45,548	203.7K	2.03%	2.03%	2.03%
Shaki	\$3,267.5M	42,014	187.8K	1.87%	1.87%	1.87%
Khachmaz	\$3,123.2M	40,165	179.5K	1.79%	1.79%	1.79%
Sabirabad	\$3,106.2M	39,940	178.6K	1.78%	1.78%	1.78%
Tovuz	\$3,077.5M	39,571	176.9K	1.77%	1.76%	1.76%
Guba	\$3,012.6M	38,741	173.2K	1.73%	1.72%	1.72%
Barda	\$2,726.3M	35,180	157.1K	1.56%	1.56%	1.56%
Salyan	\$2,420.6M	31,231	139.5K	1.39%	1.39%	1.39%
Agdjabadi	\$2,366.6M	30,553	136.5K	1.36%	1.36%	1.36%
Fuzuli	\$2,314.1M	29,874	133.4K	1.33%	1.33%	1.33%
Imishly	\$2,272.6M	29,339	131.1K	1.30%	1.31%	1.31%
Zagatala	\$2,245.3M	28,988	129.5K	1.29%	1.29%	1.29%
Yevlakh	\$2,242.8M	28,956	129.4K	1.29%	1.29%	1.29%
Goychay	\$2,104.2M	27,178	121.4K	1.21%	1.21%	1.21%
Kurdamir	\$2,039.2M	26,341	117.6K	1.17%	1.17%	1.17%
Sharur	\$2,034.1M	26,267	117.3K	1.17%	1.17%	1.17%
Agdash	\$1,921.0M	24,811	110.8K	1.10%	1.10%	1.10%
Astara	\$1,896.2M	24,510	109.4K	1.09%	1.09%	1.09%
Saatly	\$1,884.6M	24,355	108.7K	1.08%	1.08%	1.08%
Gabala	\$1,862.9M	24,075	107.5K	1.07%	1.07%	1.07%
Shamakhy	\$1,837.8M	23,757	106.1K	1.05%	1.06%	1.06%
Mingechevir	\$1,831.0M	23,677	105.7K	1.05%	1.05%	1.05%
Bilasuvay	\$1,814.4M	23,460	104.8K	1.04%	1.04%	1.04%
Goranboy	\$1,812.5M	23,436	104.6K	1.04%	1.04%	1.04%
Tartar	\$1,807.0M	23,362	104.3K	1.04%	1.04%	1.04%
Gadabay	\$1,741.3M	22,524	100.5K	1.00%	1.00%	1.00%
Beylagan	\$1,717.6M	22,224	99.2K	0.99%	0.99%	0.99%
Balakan	\$1,710.6M	22,129	98.8K	0.98%	0.98%	0.98%
Gusar	\$1,708.4M	22,099	98.7K	0.98%	0.98%	0.98%
Gazakh	\$1,698.1M	21,971	98.1K	0.97%	0.98%	0.98%
Nakhchivan	\$1,629.2M	21,082	94.1K	0.93%	0.94%	0.94%
Kalbajar	\$1,622.0M	20,992	93.7K	0.93%	0.93%	0.93%
Ujar	\$1,542.7M	19,977	89.1K	0.88%	0.89%	0.89%
Neftchala	\$1,532.3M	19,840	88.5K	0.88%	0.88%	0.88%
Aghstafa	\$1,525.7M	19,765	88.1K	0.88%	0.88%	0.88%
Shirvan	\$1,507.0M	19,526	87.1K	0.86%	0.87%	0.87%
Ismayily	\$1,505.5M	19,504	87.0K	0.86%	0.87%	0.87%
Lerik	\$1,478.2M	19,144	85.4K	0.85%	0.85%	0.85%
Jabrayil	\$1,405.9M	18,230	81.3K	0.81%	0.81%	0.81%
Aghsu	\$1,393.8M	18,082	80.6K	0.80%	0.80%	0.80%
Lachin	\$1,352.1M	17,537	78.2K	0.78%	0.78%	0.78%
Hajigabul	\$1,317.8M	17,095	76.2K	0.76%	0.76%	0.76%
Babek	\$1,310.8M	17,015	75.8K	0.75%	0.76%	0.76%
Yardimly	\$1,165.8M	15,184	67.6K	0.67%	0.68%	0.67%
Goygol	\$1,104.6M	14,414	64.1K	0.63%	0.64%	0.64%
Shabran	\$1,024.1M	13,372	59.4K	0.59%	0.59%	0.59%
Zardab	\$1,013.5M	13,232	58.8K	0.58%	0.59%	0.59%
Samukh	\$1,005.0M	13,118	58.3K	0.58%	0.58%	0.58%
Gakh	\$977.8M	12,766	56.7K	0.56%	0.57%	0.56%
Khankendi	\$955.2M	12,477	55.4K	0.55%	0.56%	0.55%
Ordubad	\$855.9M	11,203	49.7K	0.49%	0.50%	0.49%
Gobustan	\$807.5M	10,570	46.9K	0.46%	0.47%	0.47%
Julfa	\$800.9M	10,487	46.5K	0.46%	0.47%	0.46%
Zangilan	\$768.8M	10,083	44.7K	0.44%	0.45%	0.44%
Oghuz	\$760.7M	9,976	44.2K	0.44%	0.44%	0.44%
Khojavand	\$750.0M	9,843	43.6K	0.43%	0.44%	0.43%
Siyazan	\$724.0M	9,504	42.1K	0.42%	0.42%	0.42%
Gubadly	\$706.9M	9,278	41.1K	0.41%	0.41%	0.41%
Dashkasan	\$589.1M	7,881	35.0K	0.34%	0.35%	0.35%
Shusha	\$577.6M	7,738	34.3K	0.33%	0.34%	0.34%
Kengerli	\$543.6M	7,276	32.3K	0.31%	0.32%	0.32%
Khojaly	\$477.9M	6,410	28.5K	0.27%	0.29%	0.28%
Shahbuz	\$419.9M	5,626	25.0K	0.24%	0.25%	0.25%
Khizy	\$281.5M	3,809	16.9K	0.16%	0.17%	0.17%
Sadarak	\$264.2M	3,574	15.9K	0.15%	0.16%	0.16%
Naftalan	\$162.2M	2,251	9.9K	0.09%	0.10%	0.10%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column						
	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$94,863.6M	1,925,688	7,354.0K	54.41%	85.66%	73.24%
RC	\$58,178.8M	60,559	1,827.4K	33.37%	2.69%	18.20%
MIX	\$7,132.9M	138,051	482.6K	4.09%	6.14%	4.81%
MCF	\$4,909.0M	24,127	64.5K	2.82%	1.07%	0.64%
S	\$4,218.8M	12,751	0.0K	2.42%	0.57%	0.00%
W	\$3,449.9M	45,814	174.6K	1.98%	2.04%	1.74%
OT	\$1,042.8M	38,922	137.8K	0.60%	1.73%	1.37%
MR	\$565.2M	2,100	0.0K	0.32%	0.09%	0.00%

Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST_USD`

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	\$22,411.8M	530,998	14.31%	25.28%
	MUR+STRUB/LWAL+CDN/H:1/RES	\$17,239.8M	530,998	11.01%	25.28%
RC	CR+PC/LPB+CDL/HBET:9-/RES	\$13,380.6M	3,392	8.54%	0.16%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	\$12,826.7M	243,119	8.19%	11.58%
RC	CR+PC/LPB+CDL/H:5/RES	\$12,544.3M	6,105	8.01%	0.29%
MUR	MUR+STDRE/LWAL+CDN/H:1/RES	\$9,866.7M	243,119	6.30%	11.58%
	MUR+STDRE/LWAL+CDN/H:3/RES	\$5,917.3M	81,032	3.78%	3.86%
MIX	MIX(MUR+W)/LWAL+CDL/H:2/RES	\$4,924.5M	100,007	3.14%	4.76%
MUR	MUR+CB/LWAL+CDN/H:2/RES	\$3,226.5M	61,155	2.06%	2.91%
	MUR+CL/LWAL+CDN/H:2/RES	\$3,226.5M	61,155	2.06%	2.91%
RC	CR+PC/LWAL+CDL/HBET:4-7/COM	\$3,184.1M	2,516	2.03%	0.12%
	CR/LFINF+CDL/HBET:4-7/COM	\$3,184.1M	2,516	2.03%	0.12%
MUR	MUR+CB/LWAL+CDN/H:3/RES	\$2,978.3M	40,769	1.90%	1.94%
	MUR+CL/LWAL+CDN/H:3/RES	\$2,978.3M	40,769	1.90%	1.94%
MUR	MUR+CB/LWAL+CDN/HBET:4-6/RES	\$2,792.1M	5,097	1.78%	0.24%
	MUR+CL/LWAL+CDN/HBET:4-6/RES	\$2,792.1M	5,097	1.78%	0.24%
MUR	MUR/LWAL+CDN/HBET:3-6/COM	\$2,704.2M	4,228	1.73%	0.20%
	S/LFM+CDL/H:1/IND	\$2,458.6M	8,569	1.57%	0.41%
MUR	MUR/LWAL+CDN/H:2/COM	\$2,215.5M	14,097	1.41%	0.67%
RC	CR+PC/LWAL+CDL/H:1/IND	\$1,803.0M	5,717	1.15%	0.27%
	CR/LFINF+CDL/H:1/IND	\$1,803.0M	5,717	1.15%	0.27%
	CR+PC/LPB+CDL/H:7/RES	\$1,672.6M	544	1.07%	0.03%
	CR+PC/LPB+CDL/H:8/RES	\$1,670.9M	477	1.07%	0.02%
MUR	MUR/LWAL+CDN/H:1/COM	\$1,587.4M	21,153	1.01%	1.01%
RC	CR+PC/LPB+CDL/H:6/RES	\$1,568.0M	640	1.00%	0.03%
	CR+PC/LPB+CDL/H:4/RES	\$1,359.0M	948	0.87%	0.05%
S	S/LFM+CDL/H:2/IND	\$1,320.4M	2,856	0.84%	0.14%
RC	CR+PC/LPB+CDM/HBET:9-/RES	\$1,281.2M	324	0.82%	0.02%
	CR+PC/LPB+CDM/H:5/RES	\$1,202.3M	582	0.77%	0.03%
W	W/LWAL+CDL/H:2/RES	\$1,138.7M	16,703	0.73%	0.80%
	CR+PC/LWAL+CDL/H:3/COM	\$1,073.3M	2,630	0.69%	0.13%
	CR/LFINF+CDL/H:3/COM	\$1,073.3M	2,630	0.69%	0.13%
RC	CR+PC/LWAL+CDL/HBET:8-/COM	\$1,065.9M	285	0.68%	0.01%
	CR/LFINF+CDL/HBET:8-/COM	\$1,065.9M	285	0.68%	0.01%
W	W/LWAL+CDL/H:3/RES	\$1,051.1M	11,135	0.67%	0.53%
MCF	MCF/LWAL+CDL/HBET:3-6/COM	\$1,047.2M	1,235	0.67%	0.06%
OT	MATO/RES	\$1,019.2M	37,671	0.65%	1.79%
RC	CR+PC/LWAL+CDL/H:2/IND	\$968.3M	1,908	0.62%	0.09%
	CR/LFINF+CDL/H:2/IND	\$968.3M	1,908	0.62%	0.09%