

# 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 = "United_Arab_Emirates"
```

Exposure files:  
Exposure\_Com\_United\_Arab\_Emirates.csv  
Exposure\_Ind\_United\_Arab\_Emirates.csv  
Exposure\_Res\_United\_Arab\_Emirates.csv

## Sanity checks and formats

United\_Arab\_Emirates  
Exposure/Exposure/Exposure\_Com\_United\_Arab\_Emirates.csv  
Exposure/Exposure/Exposure\_Ind\_United\_Arab\_Emirates.csv  
Exposure/Exposure/Exposure\_Res\_United\_Arab\_Emirates.csv  
Occupants / Dwellings = 6.2  
No refence household size data available  
Population (exposure / UN\_2021) = 1.01  
Exposure models OK

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	10.1M	615.0K	\$368.8B	89.91%	82.44%
Ind	0.0M	6.4K	\$10.1B	0.93%	2.26%
Com	0.0M	62.6K	\$68.5B	9.16%	15.30%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	286.3M	\$322,017.0M	419	\$1,562
Res	254.3M	\$275,284.1M	414	\$1,450
Ind	5.7M	\$4,881.2M	892	\$1,778
Com	26.4M	\$41,851.6M	421	\$2,596

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Dubai	\$189.0B	203.0K	3,189.5K	42.24%	29.67%	31.53%
Abu Dhabi	\$127.8B	133.9K	4,102.0K	28.56%	19.57%	40.56%
Sharjah	\$68.2B	184.7K	1,451.4K	15.24%	27.01%	14.35%
Ras al-Khaimah	\$26.2B	72.8K	472.6K	5.86%	10.64%	4.67%
Ajman	\$18.1B	47.2K	510.4K	4.05%	6.90%	5.05%
Fujairah	\$13.0B	26.8K	292.8K	2.90%	3.92%	2.89%
Umm al-Quwain	\$5.1B	15.6K	95.6K	1.14%	2.29%	0.94%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$385,857.0M	478,283	9,171.0K	86.26%	69.93%	90.67%
MCF	\$32,166.4M	163,258	918.6K	7.19%	23.87%	9.08%
S	\$10,286.1M	5,456	0.0K	2.30%	0.80%	0.00%
MR	\$9,436.7M	16,420	0.0K	2.11%	2.40%	0.00%
MUR	\$9,413.1M	16,421	0.0K	2.10%	2.40%	0.00%
OT	\$165.9M	4,147	24.7K	0.04%	0.61%	0.24%

## Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST\_USD`

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
RC	CR/LFINF+CDL/HBET:4-7/RES	\$88,687.9M	123,040	22.13%	19.99%
	CR/LFINF+CDL/HBET:8-/RES	\$51,342.2M	58,964	12.81%	9.58%
	CR/LFINF+CDL/H:3/RES	\$40,844.8M	66,902	10.19%	10.87%
	CR/LFINF+CDM/HBET:4-7/RES	\$29,562.6M	41,010	7.38%	6.66%
	CR/LFINF+CDL/H:1/RES	\$18,672.8M	44,253	4.66%	7.19%
	CR/LFINF+CDL/H:2/RES	\$18,672.8M	36,140	4.66%	5.87%
	CR/LFINF+CDM/HBET:8-/RES	\$17,114.1M	19,656	4.27%	3.19%
	CR/LDUAL+CDL/HBET:4-7/RES	\$15,746.1M	2,678	3.93%	0.44%
	CR/LFINF+CDM/H:3/RES	\$13,614.9M	22,300	3.40%	3.62%
MCF	CR/LDUAL+CDL/HBET:8-/RES	\$9,618.4M	701	2.40%	0.11%
	MCF+CB/LWAL+CDL/H:2/RES	\$7,903.9M	46,639	1.97%	7.58%
	MCF+CB/LWAL+CDL/HBET:3-6/RES	\$7,903.9M	46,639	1.97%	7.58%
	CR/LFINF+CDL/HBET:4-7/COM	\$7,005.0M	2,018	1.75%	0.33%
RC	CR/LDUAL+CDL/H:3/RES	\$6,998.3M	2,686	1.75%	0.44%
	CR/LFINF+CDM/H:1/RES	\$6,224.2M	14,754	1.55%	2.40%
	CR/LFINF+CDM/H:2/RES	\$6,224.2M	12,049	1.55%	1.96%
	CR/LFINF+CDL/HBET:8-/COM	\$5,271.3M	500	1.32%	0.08%
	CR/LDUAL+CDM/HBET:4-7/RES	\$5,248.7M	893	1.31%	0.15%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/COM	\$4,075.1M	1,723	1.02%	0.28%
MCF	MCF+CB/LWAL+CDL/H:1/RES	\$3,951.9M	23,433	0.99%	3.81%
RC	CR/LDUAL+CDM/HBET:8-/RES	\$3,198.9M	233	0.80%	0.04%
	CR/LDUAL+CDL/H:1/RES	\$3,061.7M	4,028	0.76%	0.65%
	CR/LDUAL+CDL/H:2/RES	\$3,061.7M	2,013	0.76%	0.33%
MR	MR+CB/LWAL+CDL/HBET:3-6/COM	\$3,055.4M	1,295	0.76%	0.21%
RC	CR/LDUAL+CDL/HBET:4-7/COM	\$3,014.5M	884	0.75%	0.14%
	CR/LWAL+CDL/HBET:4-7/COM	\$3,014.5M	884	0.75%	0.14%
MUR	MUR+CB/LWAL+CDN/H:2/COM	\$2,907.6M	5,756	0.73%	0.93%
MCF	MCF+CB/LWAL+CDM/H:2/RES	\$2,634.5M	15,545	0.66%	2.53%
	MCF+CB/LWAL+CDM/HBET:3-6/RES	\$2,634.5M	15,545	0.66%	2.53%
S	S/LFM+CDL/HBET:4-7/COM	\$2,543.0M	676	0.63%	0.11%
RC	CR/LDUAL+CDM/H:3/RES	\$2,332.8M	897	0.58%	0.15%
	CR/LFINF+CDM/HBET:4-7/COM	\$2,331.1M	676	0.58%	0.11%
	CR/LDUAL+CDL/HBET:8-/COM	\$2,267.2M	219	0.57%	0.04%

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