

# 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 = "Oman"
```

Exposure files:  
Exposure\_Com\_Oman.csv  
Exposure\_Ind\_Oman.csv  
Exposure\_Res\_Oman.csv

### Sanity checks and formats

Oman  
Exposure/Exposure/Exposure\_Com\_Oman.csv  
Exposure/Exposure/Exposure\_Ind\_Oman.csv  
Exposure/Exposure/Exposure\_Res\_Oman.csv  
Occupants / Dwellings = 5.0  
Reference avg household size (2019) = 5.1  
Population (exposure / UN\_2021) = 0.97  
Exposure models OK

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	5.1M	921.6K	\$116.4B	93.40%	75.00%
Ind	0.0M	13.1K	\$5.1B	1.33%	3.28%
Com	0.0M	52.0K	\$33.7B	5.27%	21.71%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	165.5M	\$110,960.8M	168	\$938
Res	140.9M	\$87,702.7M	153	\$826
Ind	5.4M	\$2,466.3M	415	\$936
Com	19.1M	\$20,791.8M	368	\$1,762

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Ad Dakhiliyah	\$43,119.7M	258.1K	1,329.2K	27.77%	26.15%	26.12%
Az Zahirah	\$32,365.8M	214.7K	1,062.2K	20.85%	21.75%	20.88%
Ash Sharqiyah	\$30,042.8M	206.6K	1,028.7K	19.35%	20.94%	20.22%
Al Batinah	\$17,125.2M	104.0K	537.2K	11.03%	10.54%	10.56%
Al Wusta	\$16,431.6M	137.5K	719.2K	10.58%	13.94%	14.13%
Dhofar	\$12,341.5M	52.7K	302.8K	7.95%	5.34%	5.95%
Muscat	\$3,822.2M	13.2K	108.9K	2.46%	1.34%	2.14%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$116,502.4M	580.8K	3,245.9K	75.04%	58.86%	63.79%
MCF	\$11,693.4M	89.4K	415.5K	7.53%	9.06%	8.17%
MUR	\$11,467.9M	139.1K	631.7K	7.39%	14.10%	12.42%
MR	\$5,953.4M	15.0K	0.0K	3.83%	1.52%	0.00%
S	\$4,352.5M	6.4K	0.0K	2.80%	0.65%	0.00%
OT	\$3,383.2M	114.3K	582.0K	2.18%	11.59%	11.44%
ADO/E	\$1,896.0M	41.7K	213.2K	1.22%	4.22%	4.19%

## 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	\$26,564.2M	166,052	19.03%	17.90%
	CR/LFINF+CDL/HBET:8-/RES	\$13,581.6M	82,873	9.73%	8.93%
	CR/LFINF+CDL/H:3/RES	\$13,132.3M	83,307	9.41%	8.98%
	CR/LFINF+CDM/HBET:4-7/RES	\$8,854.7M	55,349	6.34%	5.97%
	CR/LFINF+CDL/H:1/RES	\$6,491.3M	42,273	4.65%	4.56%
	CR/LFINF+CDL/H:2/RES	\$6,491.3M	41,810	4.65%	4.51%
	CR/LFINF+CDM/HBET:8-/RES	\$4,527.2M	27,624	3.24%	2.98%
	CR/LFINF+CDM/H:3/RES	\$4,377.4M	27,770	3.14%	2.99%
OT	MATO/RES	\$3,383.2M	114,341	2.42%	12.33%
MUR	MUR+ST/LWAL+CDN/H:2/RES	\$3,383.2M	57,170	2.42%	6.16%
RC	CR/LFINF+CDL/HBET:4-7/COM	\$3,140.1M	1,276	2.25%	0.14%
	CR/LDUAL+CDL/HBET:4-7/RES	\$2,696.0M	677	1.93%	0.07%
MCF	MCF/LWAL+CDL/HBET:3-6/RES	\$2,670.3M	24,775	1.91%	2.67%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/COM	\$2,558.5M	1,542	1.83%	0.17%
MCF	MCF/LWAL+CDL/H:2/RES	\$2,520.6M	24,775	1.81%	2.67%
RC	CR/LFINF+CDM/H:1/RES	\$2,163.8M	14,091	1.55%	1.52%
	CR/LFINF+CDM/H:2/RES	\$2,163.8M	13,937	1.55%	1.50%
MR	MR+CB/LWAL+CDL/HBET:3-6/COM	\$1,917.4M	1,154	1.37%	0.12%
MUR	MUR+CB/LWAL+CDN/H:2/COM	\$1,910.4M	5,136	1.37%	0.55%
	MUR+ST/LWAL+CDN/H:1/RES	\$1,691.6M	57,170	1.21%	6.16%
	CR/LDUAL+CDL/HBET:4-7/COM	\$1,650.7M	680	1.18%	0.07%
RC	CR/LWAL+CDL/HBET:4-7/COM	\$1,650.7M	680	1.18%	0.07%
RC	CR/LDUAL+CDL/HBET:8-/RES	\$1,647.6M	186	1.18%	0.02%
	MR+CB/LWAL+CDL/H:2/COM	\$1,432.8M	3,853	1.03%	0.42%
MUR	MUR+CB/LWAL+CDN/H:1/COM	\$1,266.7M	7,705	0.91%	0.83%
RC	CR/LDUAL+CDL/H:3/RES	\$1,198.2M	620	0.86%	0.07%
	CR/LFINF+CDL/HBET:8-/COM	\$1,188.7M	161	0.85%	0.02%
	MCF/LWAL+CDL/H:1/RES	\$1,185.5M	12,385	0.85%	1.34%
MCF	MCF/LWAL+CDL/HBET:3-6/COM	\$1,142.8M	680	0.82%	0.07%
	S/LFM+CDL/HBET:4-7/COM	\$1,137.0M	422	0.81%	0.05%
RC	CR/LFINF+CDM/HBET:4-7/COM	\$1,042.2M	422	0.75%	0.05%
	CR/LFINF+CDL/H:3/COM	\$1,030.4M	1,332	0.74%	0.14%
MR	MR+CB/LWAL+CDL/H:1/COM	\$949.9M	5,780	0.68%	0.62%
RC	CR/LDUAL+CDM/HBET:4-7/RES	\$898.7M	225	0.64%	0.02%
MCF	MCF/LWAL+CDM/HBET:3-6/RES	\$890.1M	8,259	0.64%	0.89%
	MCF/LWAL+CDM/H:2/RES	\$840.2M	8,259	0.60%	0.89%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$798.3M	11,111	0.57%	1.20%
S	S/LFM+CDL/H:1/IND	\$722.2M	2,216	0.52%	0.24%
MR	MR+CB/LWAL+CDM/HBET:3-6/COM	\$636.4M	385	0.46%	0.04%
MCF	MCF/LWAL+CDL/H:2/COM	\$633.5M	1,710	0.45%	0.18%
RC	CR/LDUAL+CDL/HBET:8-/COM	\$610.0M	81	0.44%	0.01%
	CR/LWAL+CDL/HBET:8-/COM	\$610.0M	81	0.44%	0.01%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$598.7M	16,664	0.43%	1.80%
RC	CR/LDUAL+CDM/HBET:8-/RES	\$549.2M	61	0.39%	0.01%
	CR/LDUAL+CDM/HBET:4-7/COM	\$546.7M	228	0.39%	0.02%
	CR/LWAL+CDM/HBET:4-7/COM	\$546.7M	228	0.39%	0.02%