

# 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 S
hapely GEOS version (3.9.1-CAPI-1.14.2) is incompatible with the GEOS version PyGEOS was compil
ed with (3.10.1-CAPI-1.16.0). Conversions between both will be slow.
  warnings.warn(
```

```
# Parameters
country = "Palestine"
```

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

## Sanity checks and formats

**Palestine**  
Exposure/Exposure/Exposure\_Com\_Palestine.csv  
Exposure/Exposure/Exposure\_Ind\_Palestine.csv  
Exposure/Exposure/Exposure\_Res\_Palestine.csv  
Occupants / Dwellings = 5.3  
Reference avg household size (2019) = 5.39  
**WARNING - Check population:**  
Exposure population = 6960.0k  
UN 2021 population = 5223.0k  
Population (exposure / UN\_2021) = 1.33  
**Exposure models OK**

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	7.0M	1,013.0K	\$108.3B	92.78%	78.91%
Ind	0.0M	22.8K	\$9.4B	2.09%	6.86%
Com	0.0M	56.0K	\$19.5B	5.13%	14.22%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	166.3M	\$107.6B	152	\$826
Res	137.0M	\$89.5B	135	\$791
Ind	9.5M	\$5.0B	415	\$996
Com	19.8M	\$13.0B	353	\$987

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Gaza Strip	\$78.0B	594.0K	4,186.3K	56.79%	54.40%	60.15%
Judea and Samaria	\$59.3B	497.8K	2,773.4K	43.21%	45.60%	39.85%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$93,992.5M	701,381	4,929.1K	68.46%	64.24%	70.82%
MUR	\$30,364.7M	326,861	1,874.5K	22.12%	29.94%	26.93%
S	\$4,286.6M	9,012	0.0K	3.12%	0.83%	0.00%
MR	\$4,067.3M	17,700	0.0K	2.96%	1.62%	0.00%
MCF	\$2,600.5M	8,024	0.0K	1.89%	0.73%	0.00%
OT	\$1,747.0M	26,203	142.9K	1.27%	2.40%	2.05%
ADO/E	\$240.3M	2,614	13.1K	0.18%	0.24%	0.19%

## 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+CIP/LFINF+CDL/H:2/RES	\$25,876.6M	297,620	21.00%	28.53%
	CR+CIP/LFINF+CDL/H:1/RES	\$12,938.3M	148,809	10.50%	14.26%
MUR	MUR+CB/LWAL+CDN/H:1/RES	\$9,397.0M	110,610	7.63%	10.60%
	MUR+CB/LWAL+CDN/H:2/RES	\$9,366.3M	105,983	7.60%	10.16%
RC	CR/LFINF+CDL/HBET:4-7/RES	\$8,678.2M	11,753	7.04%	1.13%
	CR+CIP/LFINF+CDM/H:2/RES	\$6,878.6M	79,114	5.58%	7.58%
MUR	CR/LFINF+CDL/H:3/RES	\$4,883.5M	10,348	3.96%	0.99%
	CR+CIP/LFINF+CDL/H:3/RES	\$4,312.8M	49,601	3.50%	4.75%
MUR	MUR+STDRE/LWAL+CDN/H:2/RES	\$4,118.3M	46,032	3.34%	4.41%
	MUR+STDRE/LWAL+CDN/H:1/RES	\$4,118.3M	46,538	3.34%	4.46%
RC	CR+CIP/LFINF+CDM/H:1/RES	\$3,439.3M	39,556	2.79%	3.79%
	CR/LFINF+CDL/HBET:7-10/RES	\$2,440.7M	2,008	1.98%	0.19%
RC	CR/LFINF+CDM/HBET:4-7/RES	\$2,306.9M	3,124	1.87%	0.30%
	CR/LFINF+CDL/HBET:4-7/COM	\$1,907.2M	1,312	1.55%	0.13%
S	CR/LFINF+CDL/H:1/RES	\$1,627.8M	8,040	1.32%	0.77%
	CR/LFINF+CDL/H:2/RES	\$1,627.8M	4,827	1.32%	0.46%
S	S/LFM+CDL/H:1/IND	\$1,432.2M	4,052	1.16%	0.39%
RC	CR/LFINF+CDM/H:3/RES	\$1,298.1M	2,751	1.05%	0.26%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/COM	\$1,237.2M	1,774	1.00%	0.17%
RC	CR+PC/LWAL+CDL/HBET:4-7/COM	\$1,230.6M	851	1.00%	0.08%
	CR/LWAL+CDL/HBET:4-7/COM	\$1,230.6M	851	1.00%	0.08%
MR	MR+CB/LWAL+CDL/HBET:3-6/COM	\$1,172.8M	1,402	0.95%	0.13%
RC	CR+CIP/LFINF+CDM/H:3/RES	\$1,146.4M	13,184	0.93%	1.26%
MUR	MUR+CB/LWAL+CDN/H:2/COM	\$1,089.0M	5,913	0.88%	0.57%
RC	CR+PC/LWAL+CDL/H:1/IND	\$1,050.3M	2,701	0.85%	0.26%
	CR/LFINF+CDL/H:1/IND	\$1,050.3M	2,701	0.85%	0.26%
MR	MR+CB/LWAL+CDL/H:2/COM	\$1,032.4M	4,672	0.84%	0.45%
S	S/LFM+CDL/H:2/IND	\$769.1M	1,350	0.62%	0.13%
MUR	MUR+CB/LWAL+CDN/H:1/COM	\$743.9M	8,871	0.60%	0.85%
OT	CU/LWAL+CDN/H:1/RES	\$721.0M	8,635	0.59%	0.83%
	CU/LWAL+CDN/H:2/RES	\$721.0M	8,421	0.59%	0.81%
MR	MR+CB/LWAL+CDL/H:1/COM	\$705.3M	7,008	0.57%	0.67%
MCF	MCF/LWAL+CDL/HBET:3-6/COM	\$705.1M	757	0.57%	0.07%
S	S/LFM+CDL/HBET:4-7/COM	\$688.7M	438	0.56%	0.04%
RC	CR/LFINF+CDM/HBET:7-10/RES	\$648.4M	533	0.53%	0.05%
	CR/LFINF+CDL/H:3/COM	\$606.1M	1,215	0.49%	0.12%

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