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 Sh
apely 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(
```

```python
# Parameters
country = "Israel"
```

```
Exposure files:
  Exposure_Com_Israel.csv
  Exposure_Ind_Israel.csv
  Exposure_Res_Israel.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	7.9M	694.4K	$459B	77.21%	69.95%
Ind	0.0M	63.5K	$45.6B	7.06%	6.94%
Com	0.0M	141.5K	$152.0B	15.73%	23.12%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	364.2M	$458.7B	405	$1,805
Res	265.0M	$345.9B	382	$1,735
Ind	26.4M	$21.4B	415	$1,730
Com	72.9M	$91.4B	515	$2,085

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Center District	$167.7B	199.9K	2,002.5K	25.51%	22.23%	25.50%
Tel Aviv District	$132.4B	129.2K	1,383.0K	20.14%	14.36%	17.61%
North District	$97.4B	212.4K	1,249.0K	14.81%	23.61%	15.91%
South District	$95.9B	162.2K	1,197.3K	14.59%	18.03%	15.25%
Haifa District	$83.9B	112.0K	916.4K	12.77%	12.45%	11.67%
Jerusalem District	$80.1B	83.8K	1,104.4K	12.18%	9.32%	14.06%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$622.3B	775.7K	7,553.5K	94.66%	86.24%	96.19%
S	$12.8B	19.1K	0.0K	1.95%	2.12%	0.00%
MUR	$12.2B	74.9K	246.1K	1.86%	8.33%	3.13%
MR	$10.1B	29.8K	53.0K	1.53%	3.31%	0.68%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
	CR/LFINF+CDL/HBET:8-/RES	$46,366.4M	18,887	7.85%	2.51%
	CR/LFINF+CDL/HBET:5-7/RES	$40,438.9M	25,183	6.85%	3.35%
	CR/LWAL+CDM/HBET:5-7/RES	$39,626.8M	13,229	6.71%	1.76%
	CR/LWAL+CDM/HBET:5-7/RES	$35,236.6M	17,642	5.97%	2.34%
	CR/LFINF+CDL/HBET:3-4/RES	$32,948.6M	45,329	5.58%	6.02%
	CR/LWAL+CDM/HBET:3-4/RES	$29,394.1M	31,751	4.98%	4.22%
	CR/LFINF+CDM/HBET:8-/RES	$25,217.1M	8,419	4.27%	1.12%
	CR/LFINF+CDM/HBET:5-7/RES	$22,423.3M	11,226	3.80%	1.49%
	CR+CIP/LWAL+CDM/HBET:1-2/RES	$21,042.1M	125,252	3.56%	16.64%
	CR/LFINF+CDL/HBET:4-7/COM	$19,279.6M	8,818	3.26%	1.17%
	CR/LFINF+CDL/HBET:3-4/RES	$18,705.4M	20,206	3.17%	2.68%
	CR/LFINF+CDM/HBET:4-7/COM	$15,774.2M	7,211	2.67%	0.96%
	CR/LWAL+CDL/HBET:8-/RES	$15,673.9M	5,937	2.65%	0.79%
	CR/LWAL+CDL/HBET:5-7/RES	$13,774.0M	7,916	2.33%	1.05%
	CR/LWAL+CDL/HBET:4-7/COM	$11,567.8M	5,292	1.96%	0.70%
	CR/LWAL+CDM/HBET:3-4/RES	$11,327.9M	14,249	1.92%	1.89%
	CR+CIP/LFINF+CDL/HBET:1-2/RES	$10,868.6M	64,694	1.84%	8.59%
RC	CR/LFINF+CDL/HBET:1-2/RES	$10,154.0M	25,183	1.72%	3.35%
	CR/LFINF+CDL/HBET:8-/COM	$9,809.3M	1,368	1.66%	0.18%
	CR+CIP/LFINF+CDM/HBET:1-2/RES	$9,509.9M	56,607	1.61%	7.52%
	CR/LWAL+CDM/HBET:4-7/COM	$9,464.5M	4,328	1.60%	0.57%
	CR/LWAL+CDM/HBET:1-2/RES	$9,058.6M	17,642	1.53%	2.34%
	CR/LFINF+CDM/HBET:8-/COM	$8,025.8M	1,114	1.36%	0.15%
	CR/LFINF+CDL/H:3/COM	$7,400.7M	8,997	1.25%	1.20%
	CR/LDUAL+CDM/HBET:8-/RES	$7,204.9M	2,405	1.22%	0.32%
	CR/LDUAL+CDM/HBET:5-7/RES	$6,406.6M	3,208	1.08%	0.43%
	CR/LFINF+CDM/H:3/COM	$6,055.1M	7,360	1.03%	0.98%
	CR/LWAL+CDL/HBET:8-/COM	$5,885.6M	820	1.00%	0.11%
	CR/LDUAL+CDL/HBET:4-7/COM	$5,783.9M	2,643	0.98%	0.35%
	CR/LFINF+CDM/HBET:1-2/RES	$5,764.5M	11,226	0.98%	1.49%
	CR+CIP/LWAL+CDL/HBET:1-2/RES	$5,434.3M	32,347	0.92%	4.30%
	CR/LDUAL+CDM/HBET:3-4/RES	$5,344.4M	5,772	0.90%	0.77%
	CR/LFINF+CDL/H:1/IND	$5,093.2M	7,860	0.86%	1.04%
	CR/LWAL+CDM/HBET:8-/COM	$4,815.5M	672	0.82%	0.09%
	CR/LDUAL+CDM/HBET:4-7/COM	$4,732.3M	2,167	0.80%	0.29%
S	S/LFM+CDL/H:1/IND	$4,583.9M	7,860	0.78%	1.04%
RC	CR/LWAL+CDL/H:3/COM	$4,440.4M	5,399	0.75%	0.72%
RC	CR/LFINF+CDM/H:1/IND	$4,167.2M	6,430	0.71%	0.85%
MUR	MUR/LWAL+CDN/H:3/RES	$4,045.6M	22,475	0.68%	2.99%
RC	CR+PC/LWAL+CDL/HBET:8-/RES	$3,885.2M	1,619	0.66%	0.22%
S	S/LFM+CDM/H:1/IND	$3,750.5M	6,430	0.63%	0.85%
RC	CR/LFINF+CDL/H:2/COM	$3,676.0M	8,013	0.62%	1.06%
	CR/LWAL+CDM/H:3/COM	$3,633.1M	4,420	0.62%	0.59%
MUR	MUR/LWAL+CDN/H:2/RES	$3,569.7M	22,475	0.60%	2.99%
	CR/LWAL+CDL/HBET:1-2/RES	$3,491.0M	7,916	0.59%	1.05%
RC	CR+PC/LWAL+CDL/H:1/IND	$3,395.5M	5,239	0.57%	0.70%
	CR+PC/LWAL+CDL/HBET:5-7/RES	$3,380.2M	2,158	0.57%	0.29%
MUR	MUR/LWAL+CDN/H:1/RES	$3,093.7M	22,475	0.52%	2.99%
	CR/LFINF+CDM/H:2/COM	$3,007.6M	6,556	0.51%	0.87%
RC	CR/LDUAL+CDL/HBET:8-/COM	$2,942.8M	411	0.50%	0.05%