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(
```

```
# Parameters
country = "Poland"
```

```
Exposure files:
  Exposure_Com_Poland.csv
  Exposure_Ind_Poland.csv
  Exposure_Res_Poland.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	38.0M	6,314.9K	$817.9B	89.90%	49.62%
Ind	15.1M	172.9K	$349.8B	2.46%	21.22%
Com	15.2M	536.9K	$480.6B	7.64%	29.16%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	910.9M	$1,034.5B	130	$1,809
Res	698.2M	$654.3B	111	$1,171
Ind	96.2M	$139.9B	557	$3,635
Com	116.5M	$240.3B	217	$4,126

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Silesian	$177.5B	803.2K	8,223.5K	10.77%	11.43%	12.05%
Masovian	$168.7B	875.7K	9,357.1K	10.23%	12.47%	13.72%
Lublin	$163.9B	471.1K	3,744.1K	9.94%	6.71%	5.49%
Lower Silesian	$141.4B	523.7K	5,248.1K	8.58%	7.46%	7.69%
Greater Poland	$119.0B	636.4K	6,097.2K	7.22%	9.06%	8.94%
Lesser Poland	$118.8B	564.3K	5,927.4K	7.20%	8.03%	8.69%
Lodz	$118.4B	475.5K	4,489.5K	7.18%	6.77%	6.58%
Pomeranian	$114.4B	416.3K	3,989.4K	6.94%	5.93%	5.85%
Warmian-Masurian	$84.1B	297.2K	2,579.0K	5.10%	4.23%	3.78%
Kuyavian-Pomeranian	$75.3B	361.8K	3,725.4K	4.57%	5.15%	5.46%
West Pomeranian	$73.9B	315.7K	3,059.8K	4.48%	4.49%	4.48%
Subcarpathian	$72.9B	371.9K	3,778.1K	4.42%	5.29%	5.54%
Podlachian	$69.0B	250.4K	2,110.5K	4.18%	3.56%	3.09%
Swietokrzyskie	$63.5B	263.1K	2,274.6K	3.85%	3.75%	3.33%
Opole	$45.6B	196.8K	1,804.8K	2.77%	2.80%	2.65%
Lubusz	$42.0B	201.6K	1,816.6K	2.55%	2.87%	2.66%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$984.8B	4,137.7K	39,822.2K	59.74%	58.90%	58.37%
MUR	$447.0B	2,633.8K	18,987.9K	27.12%	37.49%	27.83%
S	$171.5B	86.5K	7,532.8K	10.40%	1.23%	11.04%
W	$45.1B	166.7K	1,882.1K	2.74%	2.37%	2.76%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MUR	MUR+CL/LWAL+CDN/HBET:1-4/RES	$288.3B	1,665.7K	19.46%	25.94%
RC	CR/LWAL+CDN/HBET:4-10/RES	$249.0B	2,047.0K	16.81%	31.88%
	CR/LFINF+CDN/HBET:4-10/RES	$206.1B	1,694.5K	13.91%	26.39%
	CR/LWAL+CDL/HBET:3-5/COM	$152.1B	57.8K	10.26%	0.90%
S	S/LFBR+CDN/H:1/IND	$109.7B	55.3K	7.41%	0.86%
RC	CR/PC+LFM+CDN/H:1/IND	$104.4B	50.1K	7.05%	0.78%
	CR/LFINF+CDL/HBET:3-5/COM	$92.5B	35.2K	6.24%	0.55%
	CR/LFINF+CDL/H:1/COM	$87.7B	200.2K	5.92%	3.12%
S	S/LFM+CDN/H:1/IND	$61.7B	31.1K	4.17%	0.48%
RC	CR/LFM+CDN/H:2/IND	$57.6B	27.7K	3.89%	0.43%
MUR	MUR+CL/LWAL+CDN/H:2/COM	$37.3B	48.0K	2.51%	0.75%
	MUR+ST/LWAL+CDN/HBET:1-4/RES	$35.2B	507.9K	2.37%	7.91%