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 = "Monaco"
```

```
Exposure files:
  Exposure_Com_Monaco.csv
  Exposure_Ind_Monaco.csv
  Exposure_Res_Monaco.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	39.0K	9,172	$4,616.0M	90.55%	59.04%
Ind	15.6K	167	$341.1M	1.65%	4.36%
Com	15.6K	790	$2,861.4M	7.80%	36.60%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	2,043.9K	$5,260.0M	202	$3,825
Res	1,689.7K	$3,692.8M	184	$2,732
Ind	45.7K	$136.5M	274	$7,469
Com	308.5K	$1,430.7M	390	$9,276

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Monaco	$7.8B	10.1K	70.2K	100.00%	100.00%	100.00%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$4,483.3M	2,004	37.1K	57.34%	19.79%	52.85%
MUR	$3,185.9M	8,049	26.1K	40.75%	79.47%	37.15%
S	$149.4M	75	7.0K	1.91%	0.74%	10.00%

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/H:1/RES	$2,694.4M	7,719	39.41%	79.87%
RC	CR/LFINF+CDN/HBET:1-3/RES	$1,173.2M	1,124	17.16%	11.63%
RC	CR/LFM+CDM/HBET:3-5/COM	$1,012.5M	95	14.81%	0.98%
RC	CR/LFINF+CDN/HBET:4-7/RES	$748.4M	329	10.95%	3.41%
RC	CR/LFINF+CDM/HBET:3-5/COM	$716.4M	67	10.48%	0.70%
MUR	MUR+CL/LWAL+CDN/H:1/COM	$270.4M	235	3.96%	2.44%
MUR	MUR+CL/LWAL+CDN/H:2/COM	$221.1M	95	3.23%	0.98%