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(
```

```python
# Parameters
country = "Djibouti"
```

```
Exposure files:
  Exposure_Com_Djibouti.csv
  Exposure_Ind_Djibouti.csv
  Exposure_Res_Djibouti.csv
```

Sanity checks and formats

Djibouti
```
  Exposure/Exposure/Exposure_Com_Djibouti.csv
  Exposure/Exposure/Exposure_Ind_Djibouti.csv
  Exposure/Exposure/Exposure_Res_Djibouti.csv
  Occupants / Dwellings = 6.2
  Reference avg household size (2019) = 6.3
  Population (exposure / UN_2021) = 0.98
  Exposure models  OK
```

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	983.5K	155,848	$1,643.0M	96.28%	83.21%
Ind	0.0K	983	$72.7M	0.61%	3.68%
Com	0.0K	5,044	$258.7M	3.12%	13.10%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	11,968.1K	$1,559.2M	74	$165
Res	10,853.9K	$1,325.7M	70	$151
Ind	266.0K	$48.4M	271	$273
Com	848.2K	$185.1M	168	$305

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Djibouti	$1,040.1M	84.7K	515.0K	52.68%	52.33%	52.36%
Tadjourah	$282.9M	23.2K	141.1K	14.33%	14.36%	14.35%
Ali Sabieh	$258.7M	21.3K	129.3K	13.10%	13.14%	13.14%
Dikhil	$190.1M	15.7K	95.5K	9.63%	9.72%	9.71%
Obock	$115.4M	9.6K	58.2K	5.84%	5.92%	5.92%
Arta	$87.2M	7.3K	44.4K	4.42%	4.53%	4.51%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$647.2M	30,819	183,677	32.78%	19.04%	18.68%
W	$481.3M	28,185	162,760	24.38%	17.41%	16.55%
ADO/E	$453.3M	36,912	230,716	22.96%	22.80%	23.46%
OT	$295.6M	63,664	392,535	14.97%	39.33%	39.91%
MCF	$46.6M	1,469	9,304	2.36%	0.91%	0.95%
RC	$26.2M	587	4,504	1.33%	0.36%	0.46%
S	$24.2M	239	0	1.23%	0.15%	0.00%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
OT	ME+MEO/LWAL+CDN/H:1/RES	$248.4M	53,499	13.99%	34.45%
W	W+WLI/LWAL+CDL/H:1/RES	$248.2M	19,494	13.99%	12.55%
MUR	MUR+CB/LWAL+CDN/H:2/RES	$196.4M	9,394	11.07%	6.05%
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	$184.6M	9,811	10.40%	6.32%
W	W+WLI/LWAL+CDL/H:2/RES	$136.3M	6,334	7.68%	4.08%
MUR	MUR+CB/LWAL+CDN/H:1/RES	$119.3M	9,635	6.72%	6.20%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	$112.1M	10,063	6.32%	6.48%
	EWV/LN+CDN/H:1/RES	$70.7M	15,231	3.98%	9.81%
W	W+WLI/LWAL+CDL/H:1/COM	$64.3M	1,643	3.62%	1.06%
OT	MATO/RES	$47.2M	10,165	2.66%	6.54%
	MUR+CL/LWAL+CDN/H:2/RES	$45.4M	2,171	2.56%	1.40%
MUR	MUR+CB/LWAL+CDN/H:2/COM	$31.0M	357	1.74%	0.23%
	MUR+CB/LWAL+CDN/H:1/COM	$30.3M	718	1.71%	0.46%
	MUR+CL/LWAL+CDN/H:1/RES	$27.6M	2,224	1.55%	1.43%
ADO/E	MUR+ADO/LWAL+CDN/H:2/COM	$27.2M	392	1.53%	0.25%
	MUR+ADO/LWAL+CDN/H:1/COM	$26.5M	784	1.49%	0.50%
MUR	MUR+CB/LWAL+CDN/HBET:3-6/RES	$25.7M	126	1.45%	0.08%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	$24.1M	132	1.36%	0.08%
W	W+WLI/LWAL+CDL/H:2/COM	$22.0M	277	1.24%	0.18%
MUR	MUR+CB/LWAL+CDN/H:1/IND	$21.1M	398	1.19%	0.26%
MCF	MCF+CL/LWAL+CDL/H:2/RES	$21.1M	672	1.19%	0.43%
	MUR+STRUB/LWAL+CDN/H:2/RES	$16.9M	1,015	0.95%	0.65%
MUR	MUR+CB/LWAL+CDN/H:2/IND	$15.0M	132	0.85%	0.08%
	MUR+MO/LWAL+CDN/H:2/RES	$13.5M	646	0.76%	0.42%