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 = "Georgia"
```

```
Exposure files:
  Exposure_Com_Georgia.csv
  Exposure_Ind_Georgia.csv
  Exposure_Res_Georgia.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	3,990.1K	838.9K	$57.0B	90.63%	70.84%
Ind	0.0K	26.2K	$6.6B	2.83%	8.17%
Com	0.0K	60.5K	$16.9B	6.53%	20.99%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	149.4M	$64,059.9M	161	$538
Res	121.5M	$49,273.6M	145	$469
Ind	7.9M	$3,500.1M	300	$835
Com	20.1M	$11,286.1M	332	$841

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Tbilisi	$22,747.8M	262.0K	1,110.2K	28.28%	28.30%	27.82%
Imereti	$11,350.9M	132.2K	533.6K	14.11%	14.28%	13.37%
Lower Kartli	$7,943.6M	89.3K	423.7K	9.88%	9.65%	10.62%
Samegrelo-Upper Svaneti	$6,771.5M	78.1K	330.2K	8.42%	8.44%	8.28%
Kakheti	$6,649.5M	77.2K	318.6K	8.27%	8.34%	7.98%
Autonomous Republic of Adjara	$5,927.7M	65.5K	333.6K	7.37%	7.08%	8.36%
Inner Kartli	$5,325.1M	61.3K	263.3K	6.62%	6.63%	6.60%
Autonomous Republic of Abkhazia	$5,018.5M	58.0K	245.0K	6.24%	6.27%	6.14%
Samtskhe-Javakheti	$3,023.0M	34.5K	160.2K	3.76%	3.72%	4.02%
Guria	$2,305.9M	27.0K	112.9K	2.87%	2.92%	2.83%
Mtskheta-Mtianeti	$1,924.2M	22.7K	94.4K	2.39%	2.45%	2.36%
Racha-Lechkhumi and Lower Svaneti	$784.7M	9.8K	31.7K	0.98%	1.06%	0.79%
South Ossetia	$659.1M	7.9K	32.6K	0.82%	0.85%	0.82%

Exposure by simplified taxonomy

```
Adding `MACRO_TAXO` column
```

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MUR	$40,811.4M	775,537	2,886.2K	50.74%	83.79%	72.33%
RC	$29,682.6M	37,797	771.2K	36.90%	4.08%	19.33%
MIX	$3,030.1M	55,427	184.8K	3.77%	5.99%	4.63%
MCF	$2,784.0M	13,622	27.2K	3.46%	1.47%	0.68%
S	$1,943.7M	7,874	0.0K	2.42%	0.85%	0.00%
W	$1,494.8M	18,929	67.6K	1.86%	2.04%	1.69%
OT	$418.4M	15,134	53.1K	0.52%	1.64%	1.33%
MR	$266.4M	1,306	0.0K	0.33%	0.14%	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_%
MUR	MUR+STRUB/LWAL+CDN/H:2/RES	$8,836.9M	202,714	12.25%	23.61%
MUR	MUR+STRUB/LWAL+CDN/H:1/RES	$6,797.6M	202,714	9.43%	23.61%
RC	CR+PC/LPB+CDL/HBET:9-/RES	$5,829.3M	1,432	8.08%	0.17%
MUR	MUR+STDRE/LWAL+CDN/H:8/RES	$5,585.7M	102,508	7.75%	11.94%
RC	CR+PC/LPB+CDL/H:5/RES	$5,465.0M	2,576	7.58%	0.30%
MUR	MUR+STDRE/LWAL+CDN/H:1/RES	$4,296.7M	102,508	5.96%	11.94%
MUR	MUR+STDRE/LWAL+CDN/H:3/RES	$2,577.8M	34,168	3.57%	3.98%
RC	CR+PC/LWAL+CDL/HBET:4-7/COM	$2,328.9M	1,839	3.23%	0.21%
RC	CR/LFINF+CDL/HBET:4-7/COM	$2,328.9M	1,839	3.23%	0.21%
MIX	MIX(MUR+W)/LWAL+CDL/H:2/RES	$1,961.3M	38,565	2.72%	4.49%
	MUR/LWAL+CDN/HBET:3-6/COM	$1,883.1M	3,079	2.61%	0.36%
	MUR/LWAL+CDN/H:2/COM	$1,631.4M	10,272	2.26%	1.20%
	MUR+CB/LWAL+CDN/H:2/RES	$1,318.7M	24,201	1.83%	2.82%
	MUR+CL/LWAL+CDN/H:2/RES	$1,318.7M	24,201	1.83%	2.82%
MUR	MUR+CB/LWAL+CDN/H:3/RES	$1,217.3M	16,138	1.69%	1.88%
	MUR+CL/LWAL+CDN/H:3/RES	$1,217.3M	16,138	1.69%	1.88%
	MUR+CB/LWAL+CDN/HBET:4-6/RES	$1,141.2M	2,017	1.58%	0.23%
	MUR+CL/LWAL+CDN/HBET:4-6/RES	$1,141.2M	2,017	1.58%	0.23%
S	S/LFM+CDL/H:1/IND	$1,043.9M	5,284	1.45%	0.62%
MUR	MUR/LWAL+CDN/H:1/COM	$965.9M	15,420	1.34%	1.80%
RC	CR+PC/LWAL+CDL/H:1/IND	$765.5M	3,521	1.06%	0.41%
	CR/LFINF+CDL/H:1/IND	$765.5M	3,521	1.06%	0.41%
MCF	MCF/LWAL+CDL/HBET:3-6/COM	$744.0M	921	1.03%	0.11%
	CR+PC/LPB+CDL/H:7/RES	$728.7M	229	1.01%	0.03%
	CR+PC/LPB+CDL/H:8/RES	$728.7M	201	1.01%	0.02%
RC	CR+PC/LWAL+CDL/HBET:8-/COM	$726.1M	221	1.01%	0.03%
	CR/LFINF+CDL/HBET:8-/COM	$726.1M	221	1.01%	0.03%
	CR+PC/LWAL+CDL/H:3/COM	$702.1M	1,916	0.97%	0.22%
	CR/LFINF+CDL/H:3/COM	$702.1M	1,916	0.97%	0.22%
S	S/LFM+CDL/H:2/IND	$695.9M	1,763	0.97%	0.21%
	CR+PC/LPB+CDL/H:6/RES	$683.1M	270	0.95%	0.03%
	CR+PC/LPB+CDL/H:4/RES	$592.0M	402	0.82%	0.05%
RC	CR+PC/LPB+CDM/HBET:9-/RES	$558.7M	137	0.77%	0.02%
	CR+PC/LPB+CDM/H:5/RES	$523.8M	246	0.73%	0.03%
	CR+PC/LWAL+CDL/H:2/IND	$510.4M	1,172	0.71%	0.14%
	CR/LFINF+CDL/H:2/IND	$510.4M	1,172	0.71%	0.14%
MCF	MCF/LWAL+CDL/H:2/COM	$486.5M	2,302	0.67%	0.27%
W	W/LWAL+CDL/H:2/RES	$457.8M	6,501	0.63%	0.76%
	W/LWAL+CDL/H:3/RES	$422.6M	4,330	0.59%	0.50%
OT	MATO/RES	$408.1M	14,603	0.57%	1.70%
RC	CR+PC/LWAL+CDL/H:2/COM	$392.8M	1,727	0.54%	0.20%
	CR/LFINF+CDL/H:2/COM	$392.8M	1,727	0.54%	0.20%