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 = "Croatia"
```

```
Exposure files:
  Exposure_Com_Croatia.csv
  Exposure_Ind_Croatia.csv
  Exposure_Res_Croatia.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	4,068.0K	1,609.1K	$136.1B	96.35%	75.78%
Ind	1,190.4K	27.0K	$15.4B	1.62%	8.60%
Com	1,621.4K	34.0K	$28.1B	2.03%	15.62%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	148.6M	$129.1B	89	$1,208
Res	131.4M	$108.9B	82	$1,035
Ind	7.0M	$6.2B	258	$2,216
Com	10.2M	$14.0B	301	$2,748

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Grad Zagreb	$37,381.5M	290.2K	1,485.3K	20.82%	17.38%	21.59%
Splitsko-Dalmatinska	$19,678.3M	179.2K	711.7K	10.96%	10.73%	10.34%
Primorsko-Goranska	$15,920.9M	145.1K	480.0K	8.87%	8.69%	6.98%
Osjecko-Baranjska	$12,500.8M	108.6K	488.0K	6.96%	6.50%	7.09%
Istarska	$11,678.5M	96.5K	335.7K	6.50%	5.78%	4.88%
Zagreb County	$8,688.5M	82.3K	391.7K	4.84%	4.93%	5.69%
Zadarska	$8,624.2M	99.5K	266.5K	4.80%	5.96%	3.87%
Sisacko-Moslavacka	$7,712.9M	72.3K	280.6K	4.29%	4.33%	4.08%
Dubrovacko-Neretvanska	$5,930.8M	47.1K	195.0K	3.30%	2.82%	2.83%
Sibenik-Knin	$5,853.1M	64.3K	169.8K	3.26%	3.85%	2.47%
Vukovarsko-Srijemska	$5,721.0M	61.0K	277.4K	3.19%	3.66%	4.03%
Varazdin	$5,350.7M	57.5K	274.5K	2.98%	3.44%	3.99%
Brodsko-Posavska	$5,010.3M	52.7K	251.3K	2.79%	3.15%	3.65%
Karlovacka	$4,856.8M	51.7K	207.2K	2.70%	3.09%	3.01%
Krapinsko-Zagorska	$4,366.4M	51.7K	189.6K	2.43%	3.09%	2.76%
Bjelovarska-Bilogorska	$3,908.4M	43.1K	186.6K	2.18%	2.58%	2.71%
Koprivnica-Krizevci	$3,906.0M	40.5K	178.2K	2.18%	2.42%	2.59%
Viroviticko-Podravska	$3,397.6M	31.1K	129.4K	1.89%	1.86%	1.88%
Medimurska	$3,073.8M	36.2K	180.6K	1.71%	2.17%	2.63%
Pozega-Slavonia	$3,013.2M	26.5K	120.5K	1.68%	1.58%	1.75%
Licko-Senjska	$3,004.9M	32.7K	80.1K	1.67%	1.96%	1.16%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$79,182.4M	369.5K	3,254.7K	44.09%	22.13%	47.31%
MUR	$55,015.7M	816.3K	2,003.1K	30.64%	48.88%	29.12%
MCF	$41,655.1M	477.5K	1,324.5K	23.20%	28.59%	19.25%
S	$3,725.0M	6.8K	297.6K	2.07%	0.40%	4.33%

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/LWAL+CDN/H:1/RES	$23,206.1M	387,655	14.39%	23.70%
	MUR/LWAL+CDN/H:2/RES	$20,107.0M	364,581	12.47%	22.29%
MCF	MCF/LWAL+CDL/H:1/RES	$13,011.7M	177,488	8.07%	10.85%
RC	CR/LFINF+CDL+LFC:15.0/HBET:3-5/RES	$7,411.8M	41,539	4.60%	2.54%
MCF	MCF/LWAL+CDL/H:2/RES	$7,012.9M	102,785	4.35%	6.28%
RC	CR+PC/LFM+CDL/H:1/IND	$6,727.4M	11,610	4.17%	0.71%
MUR	MUR/LWAL+CDN/HBET:3-5/RES	$6,421.7M	53,419	3.98%	3.27%
MCF	MCF/LWAL+CDN/H:1/RES	$6,262.3M	96,363	3.88%	5.89%
RC	CR/LFINF+CDL+LFC:15.0/H:2/RES	$5,565.4M	71,756	3.45%	4.39%
MCF	MCF/LWAL+CDL/HBET:3-5/RES	$4,526.6M	26,774	2.81%	1.64%
	CR/LFINF+CDN/HBET:6-/COM	$4,099.4M	4,760	2.54%	0.29%
RC	CR/LFINF+CDL+LFC:15.0/HBET:6-/RES	$3,940.2M	4,628	2.44%	0.28%
	CR/LFINF+CDL+LFC:3.75/HBET:3-5/RES	$3,754.3M	24,773	2.33%	1.51%
MCF	MCF/LWAL+CDN/H:2/COM	$3,340.2M	55,207	2.07%	3.38%
RC	CR/LFINF+CDL+LFC:0.0/HBET:3-5/RES	$3,054.6M	21,696	1.89%	1.33%
MUR	MUR/LWAL+CDN/H:1/COM	$2,625.2M	5,073	1.63%	0.31%
RC	CR/LFINF+CDN/HBET:3-5/COM	$2,593.3M	1,317	1.61%	0.08%
	CR/LFINF+CDL+LFC:3.75/H:2/RES	$2,589.8M	38,403	1.61%	2.35%
MUR	MUR/LWAL+CDN/H:2/COM	$2,429.5M	4,698	1.51%	0.29%
	CR/LFINF+CDL+LFC:7.5/HBET:3-5/RES	$2,320.3M	15,159	1.44%	0.93%
	CR/LFINF+CDM+LFC:5.0/HBET:3-5/RES	$2,303.8M	12,719	1.43%	0.78%
RC	CR/LWAL+CDL/H:1/IND	$2,190.3M	3,780	1.36%	0.23%
	CR/LFINF+CDL+LFC:3.75/HBET:6-/RES	$2,014.1M	32,125	1.25%	1.96%
	CR/LFINF+CDM+LFC:5.0/HBET:6-/RES	$1,896.0M	2,233	1.18%	0.14%
MCF	MCF/LWAL+CDN/HBET:3-5/RES	$1,818.9M	11,887	1.13%	0.73%
	CR/LFINF+CDN/HBET:6-/RES	$1,811.1M	2,288	1.12%	0.14%
RC	CR/LFINF+CDM+LFC:2.5/HBET:3-5/RES	$1,804.9M	11,214	1.12%	0.69%
MCF	MCF/LWAL+CDN/H:2/COM	$1,767.0M	1,916	1.10%	0.12%
RC	CR/LFINF+CDL+LFC:3.75/HBET:6-/RES	$1,713.2M	2,263	1.06%	0.14%
S	S/LFBR+CDM/H:1/IND	$1,639.0M	2,970	1.02%	0.18%
RC	CR/LFINF+CDL+LFC:7.5/H:2/RES	$1,617.5M	23,802	1.00%	1.46%
MCF	MCF/LWAL+CDN/H:1/COM	$1,548.0M	1,870	0.96%	0.11%
	CR/LFINF+CDM+LFC:2.5/HBET:6-/RES	$1,485.4M	1,969	0.92%	0.12%
	CR/LFINF+CDL+LFC:0.0/HBET:6-/RES	$1,279.2M	1,811	0.79%	0.11%
	CR/LFINF+CDM+LFC:0.0/HBET:3-5/RES	$1,206.6M	7,496	0.75%	0.46%
RC	CR/LFM+CDL/H:2/IND	$1,095.2M	1,890	0.68%	0.12%
	CR/LFINF+CDL+LFC:7.5/HBET:6-/RES	$1,079.7M	1,419	0.67%	0.09%
	CR/LFINF+CDL+LFC:0.0/HBET:3-5/COM	$1,003.6M	780	0.62%	0.05%
RC	CR/LFINF+CDM+LFC:0.0/HBET:6-/RES	$993.0M	1,316	0.62%	0.08%