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 = "Czechia"
```

```
Exposure files:
  Exposure_Com_Czechia.csv
  Exposure_Ind_Czechia.csv
  Exposure_Res_Czechia.csv
```

Sanity checks and formats

Exposure at National level

Summary by occupancy type

OCCUPANCY	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
Res	10,670.0K	2,184.3K	$338.2B	92.04%	48.12%
Ind	4,252.8K	80.0K	$210.0B	3.37%	29.88%
Com	4,268.0K	108.9K	$154.5B	4.59%	21.99%

Other metrics to consider

OCCUPANCY	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
Total	337.6M	$431.8B	142	$2,081
Res	259.6M	$270.5B	119	$1,303
Ind	48.2M	$84.0B	602	$4,359
Com	29.9M	$77.3B	274	$5,175

Exposure summary at Admin level 1

NAME_1	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
Stredocesky	$88.0B	268.0K	2,878,135	12.52%	11.29%	15.00%
Jihomoravsky	$86.0B	323.9K	2,597,506	12.25%	13.65%	13.54%
Moravskoslezsky	$85.3B	281.3K	670	12.14%	11.85%	0.00%
Prague	$81.6B	258.4K	2,817,397	11.61%	10.89%	14.68%
Ustecky	$56.1B	184.9K	1,805,987	7.98%	7.79%	9.41%
Jihocesky	$43.1B	140.7K	1,402,746	6.13%	5.93%	7.31%
Olomoucky	$42.7B	142.2K	891	6.07%	5.99%	0.00%
Kralovehradecky	$39.7B	126.1K	1,223,210	5.65%	5.31%	6.37%
Zlinsky	$38.0B	133.1K	1,294,712	5.41%	5.61%	6.75%
Plzensky	$35.3B	123.3K	1,273,407	5.02%	5.20%	6.64%
Pardubicky	$31.9B	112.1K	1,142,196	4.54%	4.72%	5.95%
Kraj Vysocina	$30.7B	115.5K	1,128,663	4.36%	4.87%	5.88%
Liberecky	$26.0B	95.3K	965,410	3.70%	4.01%	5.03%
Karlovarsky	$18.4B	68.4K	659,909	2.62%	2.88%	3.44%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

MACRO_TAXO	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
RC	$491,451.4M	1,349.9K	13,606.5K	69.94%	56.88%	70.90%
MUR	$109,729.7M	977.5K	3,482.5K	15.62%	41.19%	18.15%
S	$100,934.7M	39.2K	2,083.9K	14.36%	1.65%	10.86%
W	$602.8M	6.6K	18.0K	0.09%	0.28%	0.09%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
RC	CR/LWAL+CDN/HBET:4-10/RES	$130.9B	602.6K	21.08%	31.47%
	CR/LFINF+CDN/HBET:4-10/RES	$100.2B	461.1K	16.13%	24.08%
S	S/LFM+CDN/H:1/IND	$68.0B	26.4K	10.94%	1.38%
	CR+PC/LFM+CDN/H:1/IND	$67.0B	24.8K	10.79%	1.29%
RC	CR/LWAL+CDL/HBET:3-5/COM	$52.4B	20.4K	8.43%	1.06%
	CR/LFINF+CDL/HBET:3-5/COM	$40.5B	15.8K	6.52%	0.82%
MUR	MUR+CL/LWAL+CDN/HBET:1-4/RES	$35.5B	518.4K	5.72%	27.07%
RC	CR/LFM+CDN/H:2/IND	$30.3B	11.2K	4.88%	0.58%
S	S+SL/LFM+CDN/H:1/IND	$26.8B	10.4K	4.31%	0.54%
RC	CR/LWAL+CDL/HBET:4-10/RES	$23.1B	106.3K	3.72%	5.55%
	CR/LFINF+CDL/HBET:4-10/RES	$17.7B	81.4K	2.85%	4.25%
MUR	MUR+CL/LWAL+CDN/H:2/COM	$14.8B	16.2K	2.38%	0.84%
RC	CR/LFINF+CDL/H:1/COM	$14.0B	20.1K	2.26%	1.05%