

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(
```

```
# Parameters
country = "Rwanda"
```

Exposure files:
Exposure_Com_Rwanda.csv
Exposure_Ind_Rwanda.csv
Exposure_Res_Rwanda.csv

Sanity checks and formats

Rwanda
Exposure/Exposure/Exposure_Com_Rwanda.csv
Exposure/Exposure/Exposure_Ind_Rwanda.csv
Exposure/Exposure/Exposure_Res_Rwanda.csv
Occupants / Dwellings = 4.0
Reference avg household size (2019) = 4.13
Population (exposure / UN_2021) = 0.97
Exposure models OK

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	12.9M	3,113.7K	\$48,171.9M	98.24%	93.27%
Ind	0.0M	11.1K	\$943.7M	0.35%	1.83%
Com	0.0M	44.6K	\$2,534.7M	1.41%	4.91%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	257,164.1K	\$41,951.2M	81	\$201
Res	245,801.0K	\$39,426.6M	79	\$196
Ind	3,157.5K	\$627.6M	284	\$299
Com	8,205.6K	\$1,897.0M	184	\$309

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Eastern Province	\$14.2B	893.8K	3,638.7K	27.52%	28.20%	28.12%
Western Province	\$11.9B	681.8K	2,809.0K	23.11%	21.51%	21.71%
Southern Province	\$11.9B	742.8K	3,025.2K	22.98%	23.44%	23.38%
Northern Province	\$7.4B	452.8K	1,852.5K	14.40%	14.29%	14.31%
Kigali City	\$6.2B	398.2K	1,616.0K	11.98%	12.57%	12.49%

Exposure by simplified taxonomy

Adding `MACRO_TAX0` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
ADO/E	\$23,260.7M	1,277,004	5,277.0K	45.03%	40.29%	40.78%
W	\$16,659.3M	1,354,333	5,446.0K	32.25%	42.73%	42.08%
MUR	\$10,624.1M	500,137	2,059.2K	20.57%	15.78%	15.91%
RC	\$396.7M	8,142	45.8K	0.77%	0.26%	0.35%
S	\$322.1M	2,781	0.0K	0.62%	0.09%	0.00%
MCF	\$298.0M	9,176	41.7K	0.58%	0.29%	0.32%
OT	\$89.5M	17,834	71.7K	0.17%	0.56%	0.55%

Exposure by taxonomy

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

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
ADO/E	MUR+ADO/LWAL+CDN/H:2/RES	\$12,386.4M	608.6K	27.03%	20.09%
W	W+WWD/LWAL+CDN/H:1/RES	\$9,436.1M	939.8K	20.59%	31.02%
ADO/E	MUR+ADO/LWAL+CDN/H:1/RES	\$7,521.3M	624.2K	16.41%	20.60%
W	W+WWD/LWAL+CDN/H:2/RES	\$6,659.9M	392.7K	14.53%	12.96%
MUR	MUR+CL/LWAL+CDN/H:2/RES	\$5,096.1M	225.4K	11.12%	7.44%
	MUR+CL/LWAL+CDN/H:1/RES	\$3,094.5M	231.1K	6.75%	7.63%
ADO/E	MUR+ADO/LWAL+CDN/HBET:3-6/RES	\$1,637.6M	8.2K	3.57%	0.27%
