

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 = "Ethiopia"
```

Exposure files:
Exposure_Com_Ethiopia.csv
Exposure_Ind_Ethiopia.csv
Exposure_Res_Ethiopia.csv

Sanity checks and formats

Ethiopia
Exposure/Exposure/Exposure_Com_Ethiopia.csv
Exposure/Exposure/Exposure_Ind_Ethiopia.csv
Exposure/Exposure/Exposure_Res_Ethiopia.csv
Occupants / Dwellings = 4.5
Reference avg household size (2019) = 4.61
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	114.6M	25,253.2K	\$263.7B	97.85%	88.55%
Ind	0.0M	145.2K	\$9.6B	0.56%	3.24%
Com	0.0M	409.9K	\$24.4B	1.59%	8.21%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	1,909.1M	\$233.5B	74	\$156
Res	1,788.3M	\$210.4B	71	\$147
Ind	41.4M	\$6.4B	285	\$233
Com	79.4M	\$16.8B	194	\$308

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Oromia	\$111,977.9M	9,941.4K	43,952.4K	37.61%	38.52%	38.37%
Amhara	\$61,823.4M	5,503.5K	24,375.3K	20.76%	21.32%	21.28%
SNNPR	\$61,671.5M	5,401.6K	23,931.4K	20.71%	20.93%	20.89%
Tigray	\$19,745.6M	1,434.8K	6,565.8K	6.63%	5.56%	5.73%
Somali	\$19,326.3M	1,573.7K	7,030.9K	6.49%	6.10%	6.14%
Addis Ababa	\$10,509.7M	886.9K	3,943.1K	3.53%	3.44%	3.44%
Afar	\$5,781.8M	455.7K	2,042.2K	1.94%	1.77%	1.78%
Beneshangul Gumu	\$3,029.5M	286.6K	1,264.1K	1.02%	1.11%	1.10%
Gambela	\$1,678.7M	144.4K	640.3K	0.56%	0.56%	0.56%
Dire Dawa	\$1,479.5M	115.4K	519.9K	0.50%	0.45%	0.45%
Hareri	\$741.0M	64.3K	285.6K	0.25%	0.25%	0.25%

Exposure by simplified taxonomy

Adding `MACRO_TAX0` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
W	\$197,615.9M	16,314,748	72,795.1K	66.37%	63.22%	63.55%
ADO/E	\$50,997.6M	6,827,059	30,737.4K	17.13%	26.45%	26.83%
MUR	\$44,267.6M	2,384,145	9,944.1K	14.87%	9.24%	8.68%
S	\$3,576.3M	36,309	0.0K	1.20%	0.14%	0.00%
OT	\$1,021.0M	239,427	1,049.4K	0.34%	0.93%	0.92%
RC	\$157.2M	2,931	12.5K	0.05%	0.01%	0.01%
MCF	\$129.3M	3,706	12.6K	0.04%	0.01%	0.01%

Exposure by taxonomy

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

MACRO_TAXO	TAXONOMY	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
W	W+WWD/LWAL+CDN/H:1/RES	\$85,548.5M	10,030.7K	32.14%	40.81%
	W+WWD/LWAL+CDN/H:2/RES	\$60,379.6M	4,191.4K	22.69%	17.05%
ADO/E	E+ETO/LWAL+CDN/H:1/RES	\$40,737.4M	4,776.5K	15.31%	19.44%
W	W/LWAL+CDM/H:2/RES	\$9,803.8M	425.4K	3.68%	1.73%
MUR	MUR+STRUB+MOM/LWAL+CDN/H:2/RES	\$9,695.7M	631.0K	3.64%	2.57%
ADO/E	EWV/LN+CDN/H:1/RES	\$8,292.2M	1,944.5K	3.12%	7.91%
W	W/LWAL+CDM/H:3/RES	\$6,022.2M	170.0K	2.26%	0.69%
	W/LWAL+CDM/H:1/RES	\$5,953.1M	436.3K	2.24%	1.78%
MUR	MUR+STRUB+MOM/LWAL+CDN/H:1/RES	\$5,887.4M	647.2K	2.21%	2.63%
W	W/LWAL+CDL/H:2/RES	\$5,050.4M	219.1K	1.90%	0.89%
	W/LWAL+CDM/H:2/COM	\$4,051.3M	47.0K	1.52%	0.19%
	W/LWAL+CDM/H:1/COM	\$3,945.8M	94.1K	1.48%	0.38%
MUR	MUR+CLBLH/LWAL+CDN/H:2/RES	\$3,188.3M	166.0K	1.20%	0.68%
W	W/LWAL+CDL/H:3/RES	\$3,102.3M	87.6K	1.17%	0.36%
	W/LWAL+CDL/H:1/RES	\$3,066.7M	224.7K	1.15%	0.91%
	W+WBB/LN+CDN/H:1/RES	\$2,846.8M	292.1K	1.07%	1.19%
	W/LWAL+CDM/H:3/COM	\$2,459.1M	15.7K	0.92%	0.06%
	W/LWAL+CDL/H:2/COM	\$2,087.0M	24.2K	0.78%	0.10%
	W/LWAL+CDL/H:1/COM	\$2,032.7M	48.5K	0.76%	0.20%
MUR	MUR+STDRE+MOM/LWAL+CDN/H:2/RES	\$2,014.0M	104.9K	0.76%	0.43%

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