

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 Shapely 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 = "Bhutan"
```

Exposure files:
Exposure_Com_Bhutan.csv
Exposure_Ind_Bhutan.csv
Exposure_Res_Bhutan.csv

Sanity checks and formats

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	727.1K	153,372	\$8,955.9M	95.85%	92.19%
Ind	0.0K	702	\$98.8M	0.44%	1.02%
Com	0.0K	5,937	\$660.2M	3.71%	6.80%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	20,285.2K	\$8,169.5M	127	\$479
Res	19,481.4K	\$7,638.1M	127	\$460
Ind	169.5K	\$57.8M	241	\$583
Com	634.3K	\$473.7M	107	\$1,041

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Thimphu	\$4,599.5M	26,807	138,736	47.35%	16.75%	19.08%
Chhukha	\$1,217.3M	15,596	68,963	12.53%	9.75%	9.48%
Samtse	\$462.4M	14,518	62,598	4.76%	9.07%	8.61%
Sarpang	\$444.8M	10,580	46,006	4.58%	6.61%	6.33%
Samdrupjongkhar	\$366.4M	8,086	35,078	3.77%	5.05%	4.82%
Paro	\$345.9M	10,577	46,318	3.56%	6.61%	6.37%
Wangduephodrang	\$345.2M	8,653	42,186	3.55%	5.41%	5.80%
Monggar	\$300.4M	8,689	37,143	3.09%	5.43%	5.11%
Trashigang	\$271.0M	10,804	45,512	2.79%	6.75%	6.26%
Pemagatshel	\$229.6M	6,062	23,642	2.36%	3.79%	3.25%
Dagana	\$187.7M	5,761	24,965	1.93%	3.60%	3.43%
Punakha	\$176.1M	6,122	28,747	1.81%	3.83%	3.95%
Bumthang	\$129.5M	3,887	17,814	1.33%	2.43%	2.45%
Zhemgang	\$126.7M	3,853	17,751	1.30%	2.41%	2.44%
Tsirang	\$117.5M	5,119	22,381	1.21%	3.20%	3.08%
Trongsa	\$98.8M	3,776	19,957	1.02%	2.36%	2.74%
Lhuentse	\$90.7M	3,154	14,444	0.93%	1.97%	1.99%
Yangtse	\$84.8M	4,021	17,300	0.87%	2.51%	2.38%
Haa	\$79.5M	3,025	13,660	0.82%	1.89%	1.88%
Gasa	\$41.1M	921	3,948	0.42%	0.58%	0.54%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column						
	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$7,725.5M	3,986	55.7K	79.52%	2.49%	7.65%
MUR	\$1,356.0M	102,248	437.6K	13.96%	63.90%	60.18%
W	\$441.8M	39,199	167.9K	4.55%	24.50%	23.09%
ADO/E	\$119.8M	10,236	47.2K	1.23%	6.40%	6.49%
S	\$37.2M	187	0.0K	0.38%	0.12%	0.00%
OT	\$34.6M	4,155	18.8K	0.36%	2.60%	2.58%

Exposure by taxonomy

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

	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY			
	CR/LFINF+DUL/H:4/RES	\$4,167.1M	506	47.95%
RC	CR/LFINF+DUL/H:5/RES	\$2,637.9M	205	30.35%
	CR/LFINF+DUL/H:3/RES	\$606.9M	2,047	6.98%
MUR	MUR/LWAL+DNO/H:2/RES	\$296.2M	23,695	3.41%
	MUR+ST+MOM/LWAL+DNO/H:2/RES	\$250.7M	20,053	2.88%
	MUR/LWAL+DNO/H:1/RES	\$198.9M	23,866	2.29%
	MUR/LWAL+DNO/H:1/COM12	\$184.3M	512	2.12%
W	W+WO/LN/H:1/RES	\$179.4M	19,134	2.06%
MUR	MUR+ST+MOM/LWAL+DNO/H:1/RES	\$169.1M	20,295	1.95%

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