

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 = "Tonga"
```

Exposure files:
Exposure_Com_Tonga.csv
Exposure_Ind_Tonga.csv
Exposure_Res_Tonga.csv

Sanity checks and formats

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	100.7K	30,156	\$2,896.8M	92.16%	79.19%
Ind	0.0K	233	\$81.0M	0.71%	2.21%
Com	0.0K	2,333	\$680.5M	7.13%	18.60%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	3,264.7K	\$2,532.8M	100	\$1,121
Res	2,753.9K	\$2,041.6M	91	\$1,052
Ind	44.6K	\$46.6M	191	\$1,815
Com	466.2K	\$444.6M	200	\$1,460

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Tongatapu	\$2,927.9M	18,929	74,611	80.04%	57.85%	74.13%
Vava'u	\$530.7M	7,677	13,738	14.51%	23.46%	13.65%
Ha'apai	\$90.8M	3,014	6,125	2.48%	9.21%	6.09%
'Eua	\$83.5M	2,288	4,945	2.28%	6.99%	4.91%
Niuas	\$25.4M	814	1,232	0.69%	2.49%	1.22%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
W	\$1,792.0M	21,577	67,236	48.99%	65.94%	66.80%
MCF	\$1,138.0M	9,591	29,332	31.11%	29.31%	29.14%
RC	\$649.5M	952	2,767	17.75%	2.91%	2.75%
S	\$78.7M	602	1,316	2.15%	1.84%	1.31%

Exposure by taxonomy

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

	COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY			
W	W+WLI/LFBR+DUH/H:1/RES	\$1,389.0M	17,709	42.29%
MCF	MCF/LWAL+DUM/H:1/RES	\$939.5M	8,700	28.60%
RC	CR+CIP/LWAL+DUH/HBET:2-3/RES	\$387.8M	736	11.81%
	CR+CIP/LWAL+DUH/HBET:2-3/COM	\$256.1M	205	7.80%
MCF	MCF/LWAL+DUM/H:1/COM	\$186.9M	840	5.69%
W	W+WLI/LFBR+DUH/H:1/COM	\$125.3M	953	3.81%

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