

# 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 = "Australia"
```

Exposure files:  
Exposure\_Com\_Australia.csv  
Exposure\_Ind\_Australia.csv  
Exposure\_Res\_Australia.csv

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	24.5M	8,419.7K	\$7,442.6B	96.03%	57.79%
Ind	0.0M	143.9K	\$679.0B	1.64%	5.27%
Com	0.0M	204.3K	\$4,756.6B	2.33%	36.94%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	4,728.6M	\$6,881.1B	539	\$2,723
Res	3,017.3M	\$4,289.2B	358	\$2,467
Ind	220.9M	\$280.3B	1,535	\$3,073
Com	1,490.3M	\$2,311.7B	7,295	\$3,192

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
New South Wales	\$3,724.9B	2,413,764	7,673,560	28.92%	27.53%	31.31%
Victoria	\$3,564.9B	2,421,588	6,521,659	27.68%	27.62%	26.61%
Queensland	\$2,610.3B	1,765,415	4,826,801	20.27%	20.14%	19.70%
Western Australia	\$1,170.6B	995,844	2,657,805	9.09%	11.36%	10.85%
South Australia	\$1,092.2B	734,010	1,693,458	8.48%	8.37%	6.91%
Tasmania	\$416.4B	224,037	486,485	3.23%	2.56%	1.99%
Australian Capital Territory	\$153.6B	142,437	411,297	1.19%	1.62%	1.68%
Northern Territory	\$140.1B	68,627	231,404	1.09%	0.78%	0.94%
Other Territories	\$5.1B	2,136	4,298	0.04%	0.02%	0.02%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
W	\$5,068.0B	4,913,710	13,751.0K	39.35%	56.04%	56.11%
RC	\$3,288.0B	173,062	1,383.3K	25.53%	1.97%	5.64%
MUR	\$2,450.1B	3,475,394	9,172.8K	19.03%	39.64%	37.43%
S	\$1,834.3B	112,951	0.0K	14.24%	1.29%	0.00%
MR	\$217.5B	90,730	199.8K	1.69%	1.03%	0.82%
MIX	\$20.2B	2,012	0.0K	0.16%	0.02%	0.00%

## 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/LWAL+CDM/H:2/RES	\$1,504.8B	1,450,121	13.04%	16.97%
	W+WLI/LWAL+CDM/H:1/RES	\$1,319.9B	1,312,520	11.44%	15.36%
MUR	MUR+CL/LWAL+CDN/H:2/RES	\$1,123.2B	1,763,741	9.74%	20.64%
W	W+WLI/LWAL+CDL/H:2/RES	\$1,098.1B	1,079,565	9.52%	12.63%
MUR	MUR+CL/LWAL+CDN/H:1/RES	\$978.1B	1,592,715	8.48%	18.64%
W	W+WLI/LWAL+CDL/H:1/RES	\$969.4B	973,921	8.40%	11.40%
RC	CR/LFINF+CDM/HBET:4-7/COM	\$519.6B	19,071	4.50%	0.22%
	CR/LWAL+CDM/HBET:4-7/COM	\$519.6B	4,768	4.50%	0.06%
	CR/LFINF+CDM/HBET:1-3/COM	\$378.5B	32,385	3.28%	0.38%
	CR/LWAL+CDM/HBET:1-3/COM	\$378.5B	8,096	3.28%	0.09%
S	CR/LFINF+CDL/HBET:4-7/COM	\$298.2B	16,872	2.58%	0.20%
	CR/LWAL+CDL/HBET:4-7/COM	\$298.2B	4,218	2.58%	0.05%
	S+SR/LFM+CDM/HBET:4-7/COM	\$239.7B	7,325	2.08%	0.09%
	S+SR/LDUAL+CDM/HBET:4-7/COM	\$239.7B	1,831	2.08%	0.02%
RC	CR/LFINF+CDL/HBET:1-3/COM	\$222.5B	27,223	1.93%	0.32%
	CR/LWAL+CDL/HBET:1-3/COM	\$222.5B	6,806	1.93%	0.08%
MUR	MUR/LWAL+CDN/H:1/FME/IND	\$178.5B	48,551	1.55%	0.57%
S	S+SR/LFM+CDM/HBET:1-3/COM	\$163.1B	12,443	1.41%	0.15%
	S+SR/LDUAL+CDM/HBET:1-3/COM	\$163.1B	3,111	1.41%	0.04%
	S/LFM+CDM/H:1/FME/IND	\$137.0B	31,096	1.19%	0.36%
	S/LFM+CDL/H:1/FME/IND	\$123.6B	21,315	1.07%	0.25%
	S+SR/LFM+CDL/HBET:4-7/COM	\$98.6B	4,380	0.85%	0.05%
	S+SR/LDUAL+CDL/HBET:4-7/COM	\$98.6B	1,095	0.85%	0.01%
W	W+WLI/LWAL+CDM/H:3/RES	\$96.9B	52,618	0.84%	0.62%
RC	CR+PC/LWAL+CDM/H:1/FME/IND	\$88.4B	24,044	0.77%	0.28%
W	W+WLI/LWAL+CDL/H:3/RES	\$79.0B	44,965	0.68%	0.53%

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