

# 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 = "Netherlands"
```

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

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	17.3M	5,125.3K	\$1,817.8B	93.22%	61.39%
Ind	6.9M	125.0K	\$589.9B	2.27%	19.92%
Com	6.9M	248.0K	\$553.3B	4.51%	18.69%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	996.1M	\$1,966.8B	181	\$2,973
Res	807.4M	\$1,454.2B	158	\$2,252
Ind	104.0M	\$236.0B	832	\$5,672
Com	84.8M	\$276.7B	342	\$6,527

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Zuid-Holland	\$591.1B	932.2K	6,684.5K	19.96%	16.95%	21.44%
Noord-Holland	\$486.8B	756.8K	5,125.5K	16.44%	13.76%	16.44%
Noord-Brabant	\$450.9B	912.3K	4,591.2K	15.23%	16.59%	14.73%
Gelderland	\$352.8B	722.2K	3,740.3K	11.92%	13.13%	12.00%
Utrecht	\$215.3B	389.6K	2,352.5K	7.27%	7.09%	7.55%
Limburg	\$205.9B	420.1K	2,024.8K	6.95%	7.64%	6.49%
Overijssel	\$199.9B	408.7K	2,091.0K	6.75%	7.43%	6.71%
Friesland	\$120.8B	259.6K	1,175.4K	4.08%	4.72%	3.77%
Groningen	\$113.1B	202.3K	1,055.0K	3.82%	3.68%	3.38%
Drenthe	\$84.0B	192.2K	893.6K	2.84%	3.50%	2.87%
Zeeland	\$79.3B	162.1K	694.2K	2.68%	2.95%	2.23%
Flevoland	\$61.0B	140.2K	747.6K	2.06%	2.55%	2.40%

## Exposure by simplified taxonomy

Adding `MACRO_TAXO` column						
	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
MUR	\$1,226.3B	4,668.3K	12,287.7K	41.41%	84.90%	39.41%
RC	\$1,089.5B	539.5K	11,228.1K	36.80%	9.81%	36.02%
S	\$541.8B	144.7K	6,463.0K	18.30%	2.63%	20.73%
W	\$103.4B	145.8K	1,196.8K	3.49%	2.65%	3.84%

## Exposure by taxonomy

Showing only taxonomies that represent 90% of the total `COST\_USD`

		COST_USD	BUILDINGS	COST_USD_%	BUILDINGS_%
MACRO_TAXO	TAXONOMY				
MUR	MUR/LWAL+CDN/H:1/RES	\$669.8B	2,469.8K	25.20%	46.96%
	MUR/LWAL+CDN/H:2/RES	\$438.7B	2,101.3K	16.50%	39.95%
S	S/LFBR+CDN/H:1/IND	\$345.5B	73.8K	13.00%	1.40%
RC	CR/LWAL+CDN/HBET:3-5/RES	\$235.2B	79.1K	8.85%	1.50%
	CR/LWAL+CDN/HBET:6-/RES	\$179.3B	27.9K	6.74%	0.53%
	CR+PC/LWAL+CDN/HBET:3-5/RES	\$141.3B	49.1K	5.31%	0.93%
	CR/LFM+CDN/H:2/IND	\$98.4B	20.0K	3.70%	0.38%
W	CR/LWAL+CDN/HBET:3-5/COM	\$84.6B	21.7K	3.18%	0.41%
	W+S/LPB+CDN/H:1/IND	\$72.3B	16.2K	2.72%	0.31%
	CR/LWAL+CDN/H:2/RES	\$60.3B	256.2K	2.27%	4.87%
RC	CR/LFM+CDN/HBET:3-5/COM	\$57.8B	14.8K	2.17%	0.28%
	MUR/LWAL+CDN/H:2/COM	\$55.3B	34.2K	2.08%	0.65%
	MUR/LWAL+CDN/H:1/COM	\$48.9B	58.1K	1.84%	1.10%
RC	CR+PC/LWAL+CDN/HBET:6-/RES	\$48.6B	7.5K	1.83%	0.14%
S	S/LFBR+CDN/HBET:3-5/COM	\$42.8B	11.3K	1.61%	0.21%
	S/LFM+CDN/HBET:3-5/COM	\$42.8B	11.3K	1.61%	0.21%
RC	CR+PC/LPB+CDN/H:1/IND	\$36.9B	7.5K	1.39%	0.14%

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