

# 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 = "Belgium"
```

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

## Sanity checks and formats

## Exposure at National level

### Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	11,484.0K	3,681.6K	\$759.1B	95.72%	51.31%
Ind	4,251.2K	59.2K	\$354.3B	1.54%	23.94%
Com	4,593.6K	105.6K	\$366.1B	2.75%	24.74%

### Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	458.4M	\$932.0B	119	\$3,227
Res	333.6M	\$607.3B	91	\$2,276
Ind	65.5M	\$141.7B	1,106	\$5,412
Com	59.4M	\$183.0B	562	\$6,167

## Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
Vlaanderen	\$887.2B	2,298.2K	11,822.6K	59.97%	59.75%	58.16%
Wallonie	\$431.2B	1,362.3K	6,544.7K	29.15%	35.42%	32.19%
Bruxelles	\$161.0B	185.9K	1,961.5K	10.89%	4.83%	9.65%

## Exposure by simplified taxonomy

Adding `MACRO\_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$639.3B	275.8K	7,600.0K	43.21%	7.17%	37.39%
MUR	\$612.5B	3,492.6K	9,832.9K	41.40%	90.80%	48.37%
S	\$159.4B	27.1K	1,934.8K	10.77%	0.70%	9.52%
W	\$68.3B	51.0K	961.2K	4.62%	1.33%	4.73%

## 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	\$260.4B	1,714,890	19.70%	47.04%
	MUR/LWAL+CDN/H:2/RES	\$233.4B	1,731,967	17.66%	47.50%
S	S/LFM+CDN/H:1/IND	\$122.5B	20,720	9.27%	0.57%
RC	CR+PC/LFM+CDN/H:1/IND	\$110.2B	17,760	8.34%	0.49%
	CR/LFINF+CDN/HBET:3-5/RES	\$108.0B	41,399	8.17%	1.14%
	CR/LWAL+CDN/HBET:3-5/COM	\$88.4B	19,504	6.69%	0.53%
	CR/LFINF+CDN/HBET:3-5/COM	\$87.4B	20,529	6.61%	0.56%
MUR	MUR/LWAL+CDN/H:2/COM	\$60.9B	18,687	4.61%	0.51%
RC	CR/LFINF+CDN/H:2/IND	\$36.7B	5,920	2.78%	0.16%
S	S+SL/LFM+CDN/H:1/IND	\$35.0B	5,920	2.65%	0.16%
RC	CR+PC/LWAL+CDN/HBET:3-5/RES	\$34.1B	12,180	2.58%	0.33%
W	W/LWAL+CDN/H:1/IND	\$33.2B	5,920	2.51%	0.16%
RC	CR/LFINF+CDN/HBET:6-/RES	\$31.4B	4,398	2.37%	0.12%
	CR/LWAL+CDN/HBET:6-/RES	\$28.5B	4,012	2.15%	0.11%
MUR	MUR/LWAL+CDN/H:1/COM	\$28.2B	18,123	2.14%	0.50%
RC	CR+PC/LWAL+CDN/HBET:3-5/COM	\$23.3B	3,995	1.76%	0.11%

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