

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 = "Chile"
```

Exposure files:
Exposure_Com_Chile.csv
Exposure_Ind_Chile.csv
Exposure_Res_Chile.csv

Sanity checks and formats

Exposure at National level

Summary by occupancy type

	OCCUPANTS	BUILDINGS	COST_USD	BUILDINGS_%	COST_USD_%
OCCUPANCY					
Res	19.5M	3,912.9K	\$700.6B	89.89%	75.69%
Ind	0.0M	149.9K	\$88.2B	3.44%	9.53%
Com	0.0M	290.2K	\$136.8B	6.67%	14.78%

Other metrics to consider

	AREA_SQM	COST_BUILDING_USD	AVG_BUILDING_AREA_SQM	AVG_COST_PER_AREA_USD
OCCUPANCY				
Total	670.4M	\$654.1B	154	\$1,381
Res	536.7M	\$520.0B	137	\$1,305
Ind	45.3M	\$45.3B	302	\$1,947
Com	88.4M	\$88.8B	305	\$1,548

Exposure summary at Admin level 1

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
NAME_1						
REGION METROPOLITANA DE SANTIAGO	\$376.6B	1,389.6K	7,932.5K	40.68%	31.92%	40.75%
REGION DE VALPARAISO	\$106.7B	510.3K	2,002.6K	11.52%	11.72%	10.29%
REGION DEL BIOBIO	\$78.6B	422.7K	1,730.0K	8.49%	9.71%	8.89%
REGION DEL MAULE	\$52.8B	269.3K	1,145.8K	5.70%	6.19%	5.89%
REGION DE LA ARAUCANIA	\$49.7B	325.4K	1,057.5K	5.37%	7.48%	5.43%
REGION DEL LIBERTADOR GENERAL BERNARDO O'HIGGINS	\$45.1B	232.4K	1,006.2K	4.87%	5.34%	5.17%
REGION DE LOS LAGOS	\$43.7B	304.3K	914.7K	4.72%	6.99%	4.70%
REGION DE COQUIMBO	\$40.3B	196.4K	828.6K	4.35%	4.51%	4.26%
REGION DE ANTOFAGASTA	\$28.9B	118.7K	670.1K	3.12%	2.73%	3.44%
REGION DE ÑUBLE	\$24.4B	147.2K	529.9K	2.64%	3.38%	2.72%
REGION DE LOS RIOS	\$19.9B	139.8K	425.0K	2.15%	3.21%	2.18%
REGION DE TARAPACA	\$17.2B	72.1K	367.0K	1.86%	1.66%	1.89%
REGION DE ATACAMA	\$15.9B	78.8K	311.3K	1.72%	1.81%	1.60%
REGION DE ARICA Y PARINACOTA	\$10.9B	47.0K	248.1K	1.18%	1.08%	1.27%
REGION DE MAGALLANES Y DE LA ANTARTICA CHILENA	\$9.5B	59.6K	183.3K	1.02%	1.37%	0.94%
REGION DE AYSEN DEL GENERAL CARLOS IBAÑEZ DEL CAMPO	\$5.6B	39.4K	113.0K	0.61%	0.91%	0.58%

Exposure by simplified taxonomy

Adding `MACRO_TAXO` column

	COST_USD	BUILDINGS	OCCUPANTS	COST_USD_%	BUILDINGS_%	OCCUPANTS_%
MACRO_TAXO						
RC	\$335.6B	637.8K	4,080.7K	36.25%	14.65%	20.96%
MCF	\$177.8B	841.9K	4,343.9K	19.21%	19.34%	22.32%
W	\$161.2B	1,592.1K	4,678.9K	17.42%	36.58%	24.04%
MR	\$158.8B	679.1K	3,823.2K	17.16%	15.60%	19.64%
MUR	\$43.5B	363.1K	2,138.5K	4.70%	8.34%	10.99%
S	\$36.4B	79.7K	0.0K	3.94%	1.83%	0.00%
OT	\$6.5B	63.8K	156.2K	0.70%	1.46%	0.80%
ADO/E	\$5.8B	95.4K	244.3K	0.63%	2.19%	1.26%

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/H:1-2/RES	\$128.8B	1,271,617	15.57%	31.96%
MR	MR/DUL/H:1-3/RES	\$87.1B	430,099	10.53%	10.81%
MCF	MCF/DUH/H:1-3/RES	\$75.2B	250,694	9.09%	6.30%
	MCF/DUL/H:1-3/RES	\$74.5B	367,977	9.01%	9.25%
MR	MR/DUH/H:1-3/RES	\$57.1B	190,294	6.90%	4.78%
RC	CR/LWAL/DUH/H:1-3/RES	\$49.9B	166,364	6.03%	4.18%
	CR/LWAL/DUH/H:4-7/RES	\$42.5B	28,338	5.14%	0.71%
MUR	MUR/H:1-3/RES	\$42.5B	346,662	5.13%	8.71%
RC	CR/LWAL/DUL/H:1-3/RES	\$32.8B	161,908	3.96%	4.07%
W	W+WS/H:1-2/RES	\$32.5B	320,507	3.92%	8.06%
	CR/LWAL/DUH/H:8-19/RES	\$24.8B	4,301	3.00%	0.11%
RC	CR/LWAL/DUL/H:4-7/RES	\$21.8B	21,517	2.63%	0.54%
	CR/LWAL+DUH/HBET:1-3/IND3	\$21.1B	30,181	2.55%	0.76%
MCF	MCF/DUL/H:1/RES	\$17.9B	176,999	2.17%	4.45%
	CR/LWAL+DNO/HBET:1-3/IND3	\$16.0B	22,835	1.93%	0.57%
	CR/LWAL+DUH/HBET:1-3/COM6	\$10.4B	25,724	1.26%	0.65%
	CR/LWAL+DUH/HBET:7-10/COM6	\$9.7B	5,235	1.17%	0.13%
RC	CR/LWAL+DNO/HBET:1-3/IND4	\$9.6B	13,721	1.16%	0.34%
	CR/LWAL+DUH/HBET:1-3/IND4	\$9.6B	13,713	1.16%	0.34%
	CR+PC/LWAL+DUH/HBET:1-3/IND4	\$9.3B	13,335	1.13%	0.34%
S	SR/LFM+DUH/HBET:1-3/COM2	\$8.6B	11,801	1.05%	0.30%
	SR/LFM+DUH/HBET:1-3/COM1	\$8.1B	18,506	0.98%	0.47%
	CR+PC/LWAL+DUH/HBET:1-3/COM2	\$7.9B	11,727	0.96%	0.29%
RC	CR/LWAL+DNO/HBET:1-3/COM1	\$7.5B	18,598	0.91%	0.47%
	CR/LWAL+DUH/HBET:1-3/COM1	\$7.5B	18,374	0.90%	0.46%
S	SR/LFM+DUH/H:1/IND4	\$7.4B	20,251	0.89%	0.51%
RC	CR/LWAL+DNO/HBET:1-3/COM6	\$7.0B	17,317	0.85%	0.44%

--