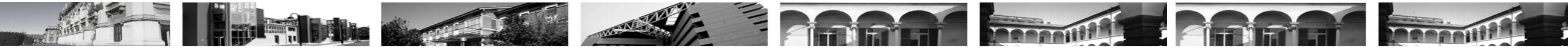




POLITECNICO
MILANO 1863



Explaining the evolution of Italian electricity prices

Dataset specifications

Endogeneous variables > GME day-ahead prices dataset

	PUN	NAT	CALA	CNOR	CSUD	NORD	SARD	SICI	SUD	AUST	...	GREC	SLOV	SVIZ	BSP	MALT	XAUS	XFRA	MONT	XGRE	ROSN
2024-01-01 00:00:00	107.09000	107.09	107.09	107.09	107.09	107.09	107.09	107.09	107.09	107.09	...	107.09	107.09	107.09	107.09	107.09	107.09	107.09	107.09	107.09	NaN
2024-01-01 01:00:00	104.00000	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	...	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	NaN
2024-01-01 02:00:00	100.00000	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	...	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	NaN
2024-01-01 03:00:00	85.66000	85.66	85.66	85.66	85.66	85.66	85.66	85.66	85.66	85.66	...	85.66	85.66	85.66	85.66	85.66	85.66	85.66	85.66	85.66	NaN
2024-01-01 04:00:00	85.00000	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	...	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00	NaN
...
2024-07-24 19:00:00	139.79000	139.79	139.79	139.79	139.79	139.79	139.79	139.79	139.79	139.79	...	139.79	139.79	139.79	139.79	139.79	139.79	139.79	139.79	139.79	NaN
2024-07-24 20:00:00	157.17639	155.00	172.66	172.66	172.66	143.84	172.66	172.66	172.66	143.84	...	172.66	143.84	143.84	143.84	172.66	143.84	143.84	172.66	172.66	NaN
2024-07-24 21:00:00	141.31577	143.44	154.99	154.99	154.99	129.71	154.99	154.99	154.99	129.71	...	154.99	129.71	129.71	129.71	154.99	129.71	129.71	154.99	154.99	NaN
2024-07-24 22:00:00	113.32512	113.72	115.03	115.03	115.03	111.87	115.03	115.03	115.03	111.87	...	115.03	111.87	111.87	111.87	115.03	111.87	111.87	115.03	115.03	NaN
2024-07-24 23:00:00	104.70852	105.00	105.50	105.50	105.50	104.00	105.50	105.76	105.50	104.00	...	105.50	104.00	104.00	104.00	105.76	104.00	104.00	105.50	105.50	NaN

- 2019 to July 24th, 2024
- €/MWh
- 22 physical and virtual zonal prices
- NAT price: unconstrained national price
- PUN price: Unique national price, for buying

Exogenous variables > Forecasted net transfer capacity

	CH > IT_NORD	FR > IT_NORD	SI > IT_NORD	AT > IT_NORD	IT_CNOR > IT_NORD	IT_CSUD > IT_SUD	IT_CALA > IT_SUD	IT_CNOR > IT_CSUD	IT_SARD > IT_CSUD	IT_SUD > IT_CSUD	IT_NORD > IT_CNOR	IT_CSUD > IT_CNOR	IT_CSUD > IT_SARD	IT_CALA > IT_SICI	IT_SICI > IT_CALA	IT_SUD > IT_CALA
2024-01-01 00:00:00+01:00	1185.0	3815.0	564.0	462.0	4281.0	3191.0	2350.0	2870.0	870.0	5358.0	3334.0	3210.0	720.0	1518.0	1441.0	1869.0
2024-01-01 01:00:00+01:00	1185.0	3815.0	564.0	462.0	4281.0	3191.0	2350.0	2870.0	870.0	5358.0	3334.0	3210.0	720.0	1518.0	1441.0	1869.0
2024-01-01 02:00:00+01:00	1185.0	3815.0	564.0	462.0	4281.0	3191.0	2350.0	2970.0	870.0	5358.0	3334.0	3210.0	720.0	1518.0	1441.0	1869.0
2024-01-01 03:00:00+01:00	1142.0	4338.0	641.0	525.0	4519.0	3321.0	2350.0	2814.0	870.0	5255.0	3340.0	3162.0	720.0	1528.0	1440.0	1905.0
2024-01-01 04:00:00+01:00	1100.0	4338.0	641.0	525.0	4519.0	3321.0	2350.0	2814.0	870.0	5255.0	3340.0	3162.0	720.0	1528.0	1440.0	1905.0
2024-01-01 05:00:00+01:00	1100.0	4338.0	641.0	525.0	4519.0	3321.0	2350.0	2814.0	870.0	5255.0	3340.0	3162.0	720.0	1528.0	1440.0	1905.0
2024-01-01 06:00:00+01:00	1058.0	4338.0	641.0	525.0	4442.0	3714.0	2350.0	2872.0	870.0	5277.0	3477.0	3260.0	720.0	1540.0	1464.0	1786.0
2024-01-01 07:00:00+01:00	1058.0	4338.0	641.0	525.0	4442.0	3714.0	2350.0	2872.0	870.0	5277.0	3477.0	3260.0	720.0	1540.0	1464.0	1786.0

- Jan 2023 - actual
- Maximum power that can flow between two zones for every hour
- Unilateral for foreign connections, bilateral for domestic connections
- MW

Exogenous variables > Gas price

GasPrice	
Date	
2024-06	34.575
2024-05	34.223
2024-04	29.120
2024-03	27.340
2024-02	24.865
...	...
2019-05	11.205
2019-04	14.390
2019-03	14.215
2019-02	17.815
2019-01	19.850

- Jan 2019 - Actual
- €/MWh
- Monthly value

Exogenous variables > Wind and solar forecast

	ECe Solar ITA	ECe Wind ITA	ECe Solar ITA	ECe Wind ITA	GFSe Solar ITA	GFSe Wind ITA	GFSo Solar ITA	GFSo Wind ITA	Solar CALA	Solar CNOR	...	Solar SICI	Solar SUD	Wind CALA	Wind CNOR	Wind CSUD	Wind ITA	Wind NORD	Wind SARD	Wind SICI	Wind SUD
2023-01-01 00:00:00	0.0	217.237578	0.0	414.4651	0.0	584.136977	0.0	528.5650	0.0	0.0	...	0.0	0.0	326.432	47.835	636.772	3127.238	21.371	277.507	586.296	1231.026
2023-01-01 01:00:00	0.0	258.942118	0.0	434.8042	0.0	644.132658	0.0	533.8854	0.0	0.0	...	0.0	0.0	328.432	47.843	639.569	3135.806	21.972	277.756	583.534	1236.701
2023-01-01 02:00:00	0.0	232.645384	0.0	416.6655	0.0	644.112584	0.0	563.5090	0.0	0.0	...	0.0	0.0	327.285	47.680	639.625	3126.708	22.327	275.132	575.989	1238.670
2023-01-01 03:00:00	0.0	223.225457	0.0	413.5910	0.0	647.808971	0.0	595.0065	0.0	0.0	...	0.0	0.0	324.280	47.387	637.829	3106.304	22.324	270.570	564.864	1239.051
2023-01-01 04:00:00	0.0	224.787718	0.0	418.7922	0.0	652.151481	0.0	628.3012	0.0	0.0	...	0.0	0.0	320.101	46.981	634.811	3078.065	21.967	265.010	551.844	1237.351
...
2024-09-28 19:00:00	2.0	4193.052000	2.0	4258.2320	3.0	5620.747000	3.0	5006.2890	0.0	0.0	...	0.0	0.0	229.547	41.119	548.721	2477.213	18.765	222.964	421.828	994.268
2024-09-28 20:00:00	0.0	3946.396000	0.0	4104.4790	0.0	5834.264000	0.0	4726.2430	0.0	0.0	...	0.0	0.0	220.786	39.545	513.995	2320.310	18.588	206.282	381.894	939.220
2024-09-28 21:00:00	0.0	3810.256000	0.0	3965.9370	0.0	5984.930000	0.0	4425.6090	0.0	0.0	...	0.0	0.0	215.223	37.894	484.016	2180.595	18.345	190.953	348.417	885.746
2024-09-28 22:00:00	0.0	3778.270000	0.0	3896.0470	0.0	6036.547000	0.0	4134.1000	0.0	0.0	...	0.0	0.0	213.469	36.525	463.399	2083.041	18.110	179.845	326.986	844.707
2024-09-28 23:00:00	0.0	3773.608000	0.0	3828.5770	0.0	5989.990000	0.0	3946.8690	0.0	0.0	...	0.0	0.0	214.843	35.719	453.885	2039.587	17.951	174.619	319.681	822.891

- Jan 2023 - Actual
- National day-ahead wind and solar generation forecasts according to different meteorological models
- Actual zonal generation
- MW

Exogenous variables > Load forecast

- Jan 2023 - Actual
- Day-ahead hourly load forecast in seven physical zones
- MW