Supplementary Materials

How carbon price shocks reshape built-environment supply formation: Evidence from construction activity in China

These supplementary tables provide numerical outputs supporting the IRF and FEVD results reported in the manuscript. The values are reported for auditability and should be interpreted together with the figures and discussion in the main text.

Table S1: Cumulative FEVD summary at selected horizons.

Notes: The table reports the carbon-price shock contribution, rank, own-shock share, and the three largest contributors at h = 20 for cumulative FEVD. Values are percentages. PRE and POST refer to the pre- and post-national ETS transition regimes used in the baseline TVP-SVAR design.

Response	Regime	h1 CP %	h1 CP rank	h1 own %	h6 CP %	h6 CP rank	h6 own %	h12 CP %	h12 CP rank	h12 own %	h20 CP %	h20 CP rank	h20 own %	h20 Top1	h20 Top2	h20 Top3
Trading volume (Vol)	PRE	0.5	8	78.3	5.3	3	58.6	13.7	2	42.7	19.6	2	30.6	Vol (30.6%)	CP (19.6%)	UC (8.1%)
Housing starts (NS)	PRE	2.9	4	7.1	13.6	2	4.4	18.7	2	3.9	19.2	2	4.0	UC (28.3%)	CP (19.2%)	CementPPI (7.2%)
Area under construction (UC)	PRE	1.1	6	83.9	7.8	2	56.0	16.3	2	34.2	21.6	2	21.7	UC (21.7%)	CP (21.6%)	PPI (8.4%)
Shibor	PRE	1.4	6	79.7	7.0	2	55.6	14.7	2	36.3	20.2	2	22.4	Shibor (22.4%)	CP (20.2%)	CementPPI (7.2%)
Trading volume (Vol)	POST	0.5	7	77.8	4.4	4	61.7	10.8	2	47.7	16.5	2	35.4	Vol (35.4%)	CP (16.5%)	CoalPPI (9.1%)
Housing starts (NS)	POST	3.1	4	6.1	14.2	2	3.6	18.4	2	3.2	19.1	2	3.1	UC (23.4%)	CP (19.1%)	CoalPPI (10.1%)
Area under construction (UC)	POST	1.2	5	79.4	8.9	2	48.9	17.3	2	28.5	21.3	1	16.8	CP (21.3%)	UC (16.8%)	CementPPI (9.3%)
Shibor	POST	1.8	6	66.9	7.3	3	42.5	15.5	2	24.3	20.6	1	14.4	CP (20.6%)	Shibor (14.4%)	CementPPI (10.8%)

Table S2: Numerical impulse responses to a carbon-price shock at selected horizons.

Notes: The table reports posterior quantiles of impulse responses to a carbon-price shock for the main response variables at selected horizons. Responses are in standardized units. PRE and POST refer to the pre- and post-national ETS transition states. The 5% and 95% columns correspond to the uncertainty bands used for numerical auditability.

Response	Regime	Horizon	5%	16%	Median	84%	95%
Shibor	PRE	0	-0.0375	-0.0251	-0.0077	0.0074	0.0185
Shibor	PRE	1	-0.0470	-0.0321	-0.0141	0.0015	0.0131
Shibor	PRE	6	-0.1239	-0.0864	-0.0469	-0.0162	0.0134
Shibor	PRE	12	-0.1901	-0.1320	-0.0697	-0.0228	0.0173
Shibor	PRE	20	-0.2752	-0.1687	-0.0723	-0.0117	0.0366
Shibor	POST	0	-0.0515	-0.0326	-0.0082	0.0162	0.0336
Shibor	POST	1	-0.0620	-0.0425	-0.0174	0.0075	0.0261
Shibor	POST	6	-0.1545	-0.1145	-0.0618	-0.0185	0.0145
Shibor	POST	12	-0.2322	-0.1678	-0.0929	-0.0315	0.0175
Shibor	POST	20	-0.3159	-0.2119	-0.1036	-0.0257	0.0403
Area under construction (UC)	PRE	0	-0.0565	-0.0336	-0.0032	0.0312	0.0572
Area under construction (UC)	PRE	1	-0.0744	-0.0540	-0.0247	0.0023	0.0222
Area under construction (UC)	PRE	6	-0.1689	-0.1234	-0.0750	-0.0349	-0.0070
Area under construction (UC)	PRE	12	-0.2629	-0.1851	-0.1039	-0.0482	-0.0160
Area under construction (UC)	PRE	20	-0.4056	-0.2416	-0.1085	-0.0368	0.0128
Area under construction (UC)	POST	0	-0.0898	-0.0523	-0.0057	0.0416	0.0766
Area under construction (UC)	POST	1	-0.1103	-0.0759	-0.0304	0.0066	0.0338
Area under construction (UC)	POST	6	-0.2223	-0.1617	-0.0986	-0.0441	-0.0091
Area under construction (UC)	POST	12	-0.3488	-0.2374	-0.1390	-0.0666	-0.0216
Area under construction (UC)	POST	20	-0.4928	-0.3103	-0.1451	-0.0479	-0.0001
Housing starts (NS)	PRE	0	-0.1541	-0.1001	-0.0308	0.0377	0.0846
Housing starts (NS)	PRE	1	-0.1807	-0.1338	-0.0762	-0.0267	0.0050
Housing starts (NS)	PRE	6	-0.2418	-0.1751	-0.1002	-0.0503	-0.0167
Housing starts (NS)	PRE	12	-0.2775	-0.1824	-0.0865	-0.0284	0.0097
Housing starts (NS)	PRE	20	-0.3515	-0.1996	-0.0608	0.0035	0.0580
Housing starts (NS)	POST	0	-0.2428	-0.1526	-0.0438	0.0473	0.1223
Housing starts (NS)	POST	1	-0.2554	-0.1860	-0.1013	-0.0344	0.0195
Housing starts (NS)	POST	6	-0.3067	-0.2230	-0.1338	-0.0653	-0.0241
Housing starts (NS)	POST	12	-0.3685	-0.2401	-0.1138	-0.0414	0.0072
Housing starts (NS)	POST	20	-0.4088	-0.2486	-0.0814	0.0037	0.0630
Trading volume (Vol)	PRE	0	-0.1181	-0.0764	-0.0102	0.0496	0.0959
Trading volume (Vol)	PRE	1	-0.0566	-0.0229	0.0182	0.0553	0.0875
Trading volume (Vol)	PRE	6	-0.0004	0.0311	0.0736	0.1235	0.1706
Trading volume (Vol)	PRE	12	0.0079	0.0390	0.0909	0.1707	0.2470
Trading volume (Vol)	PRE	20	-0.0041	0.0278	0.0878	0.2124	0.3555
Trading volume (Vol)	POST	0	-0.1955	-0.1101	-0.0041	0.0933	0.1692
Trading volume (Vol)	POST	1	-0.0851	-0.0344	0.0294	0.0899	0.1364
Trading volume (Vol)	POST	6	0.0015	0.0396	0.1013	0.1737	0.2205
Trading volume (Vol)	POST	12	0.0105	0.0550	0.1263	0.2203	0.3096
Trading volume (Vol)	POST	20	-0.0019	0.0381	0.1238	0.2644	0.4400

Computational note:

The IRF numerical outputs were exported from the baseline TVP-SVAR model used in the manuscript. The model was estimated using 142 monthly observations and 8 endogenous variables. The state-evolution training window was tau = 80, the impulse-response horizon was 20 months, and the carbon-price shock was used as the impulse variable. PRE and POST states correspond to the regime-aware design described in the manuscript.