



# Energy Cost Monitoring (ECM)

Nomura Lab at Keio Economic Observatory (KEO), Keio University, Tokyo

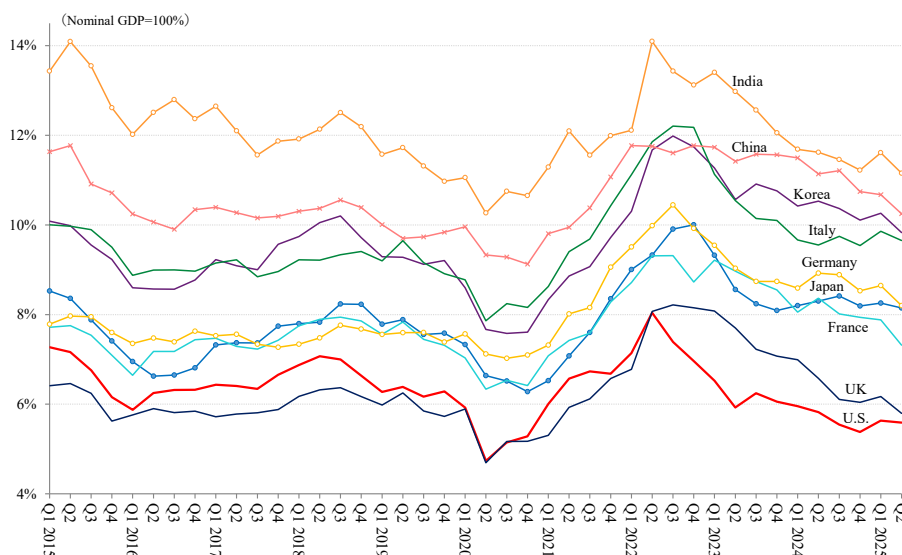
ECM\_202509

October 15, 2025

Koji Nomura, Sho Inaba, and Mansaku Yoshida.

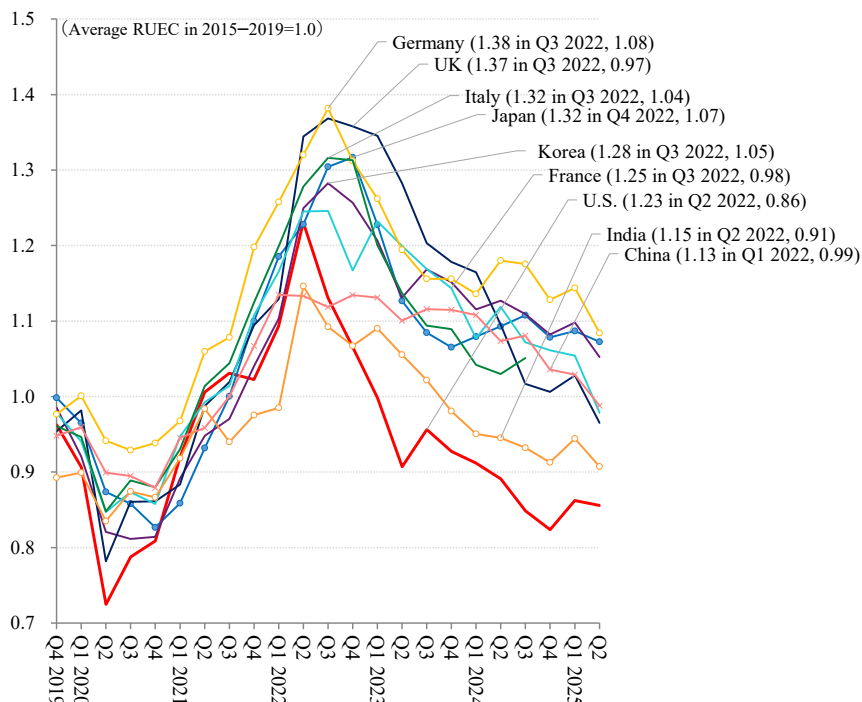
## 1 RUEC (Real Unit Energy Cost)

### 1.1 RUEC Levels



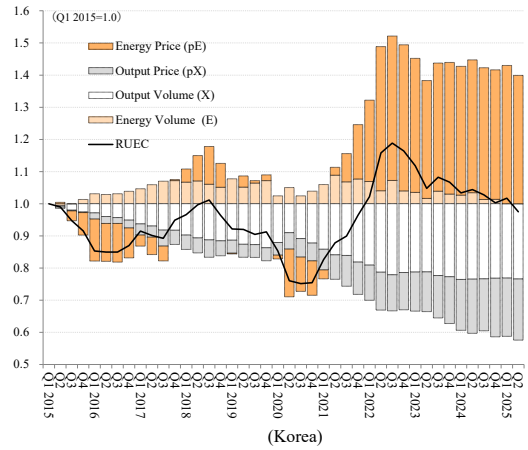
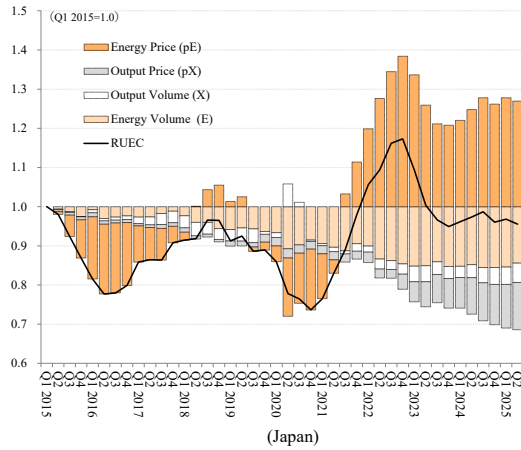
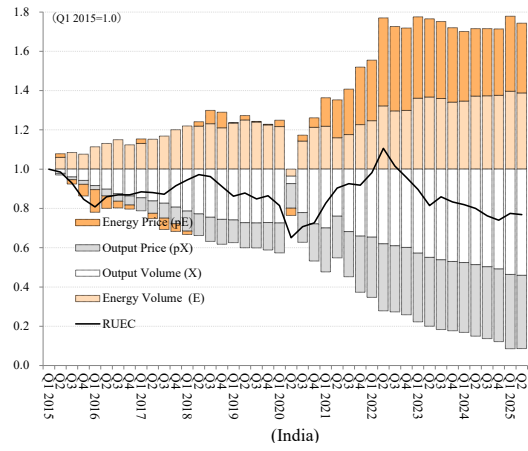
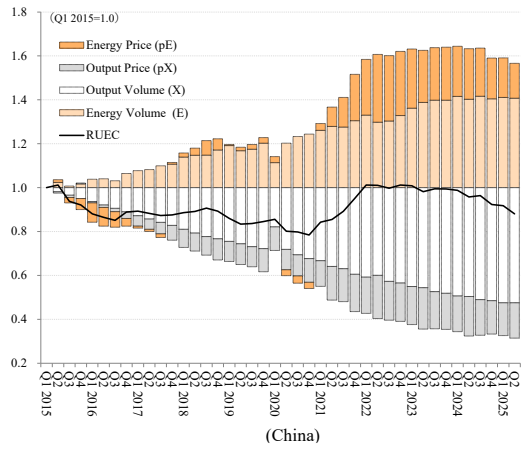
Unit: Share (GDP at current market prices in each period=100% in each country). Period: Q1 2015–Q2 2025. Notes: The prices are seasonally adjusted and include taxes and subsidies. The volumes are seasonally adjusted.

### 1.2 Post-Pandemic RUEC Indices



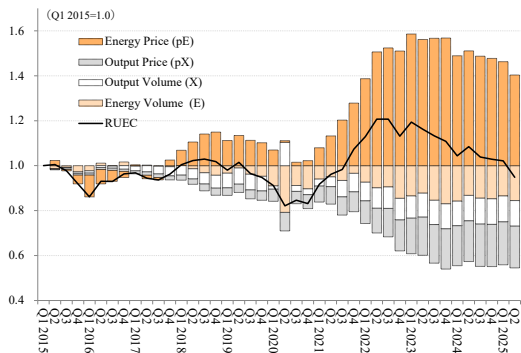
Unit: Index (average RUEC in 2015–2019=1.0 in each country). Period: Q4 2019–Q2 2025. Notes: The counts after the country name indicate the peaks in RUEC surges and the recovered level as of Q2 2025 relative to the pre-pandemic level. The prices are seasonally adjusted and include taxes and subsidies. The volumes are seasonally adjusted.

1.3 RUEC Decomposition  
 • Asia (China, India, Japan, and Korea)

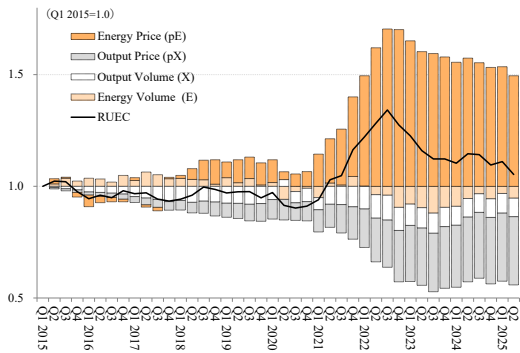


Unit: Index (RUEC in Q1 2015=1.0). Period: Q1 2015–Q2 2025. Notes: The prices are seasonally adjusted and include taxes and subsidies. The volumes are seasonally adjusted.

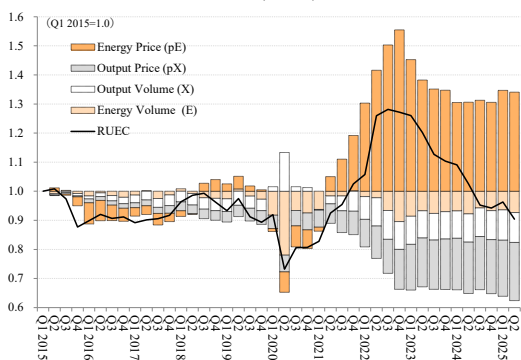
• EU (France, Germany, and Italy), the UK, and the U.S.



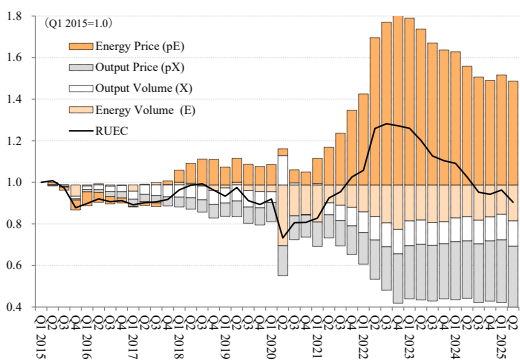
(France)



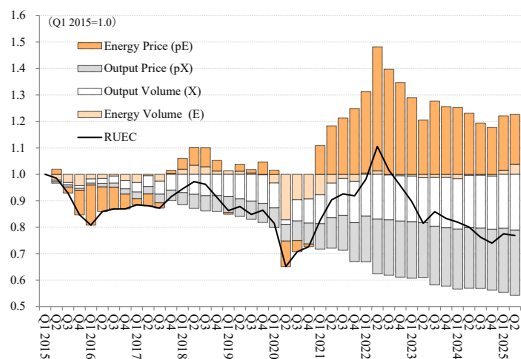
(Germany)



(Italy)



(the UK)

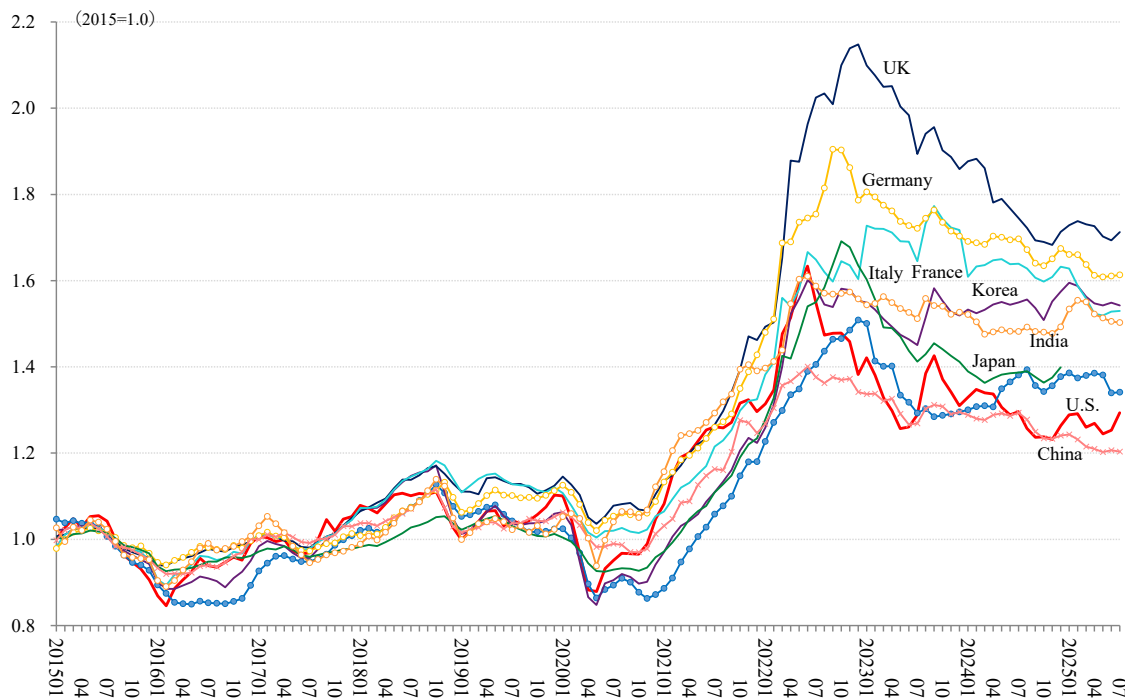


(the U.S.)

Unit: Index (RUEC in Q1 2015=1.0). Period: Q1 2015– Q2 2025. Notes: The prices are seasonally adjusted and include taxes and subsidies. The volumes are seasonally adjusted.

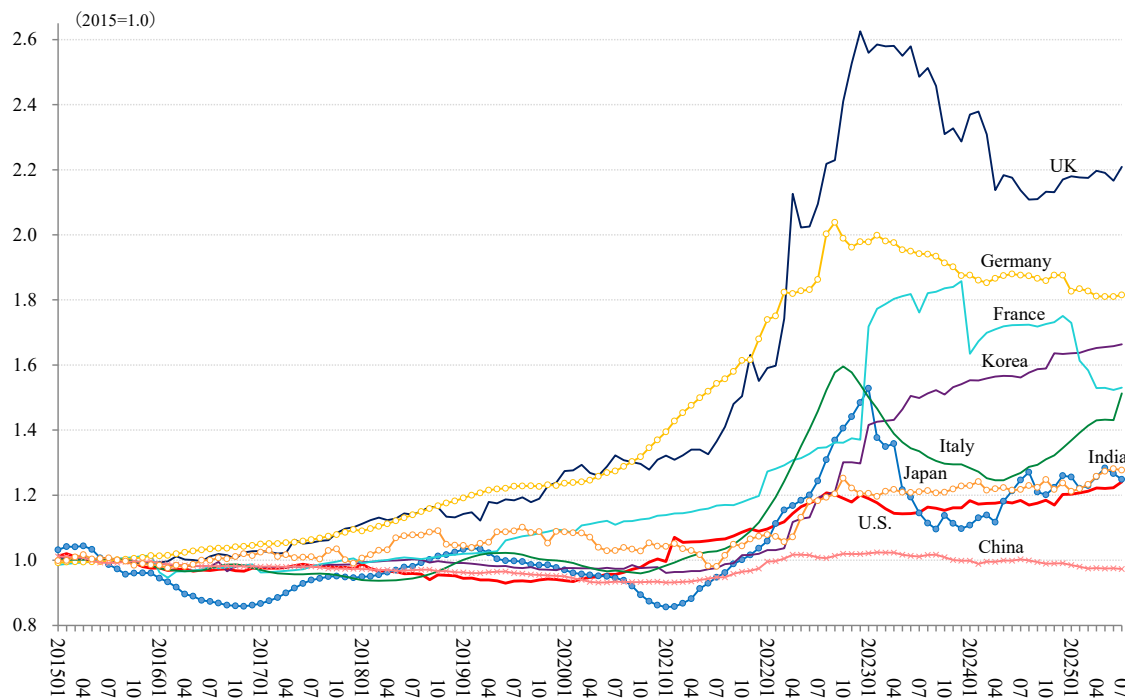
## 2 Energy Prices

### 2.1 Quality-adjusted Energy Prices for Final Use



Unit: Index (average price at local currency unit in 2015=1.0 in each country). Period: January 2015– July 2025. Notes: Quality-adjusted energy price is defined as the implicit Translog index. The prices are seasonally adjusted and include taxes and subsidies.

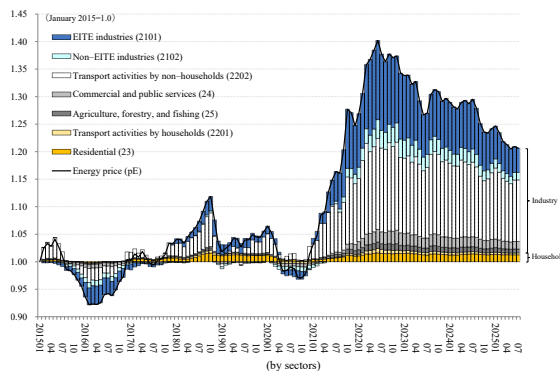
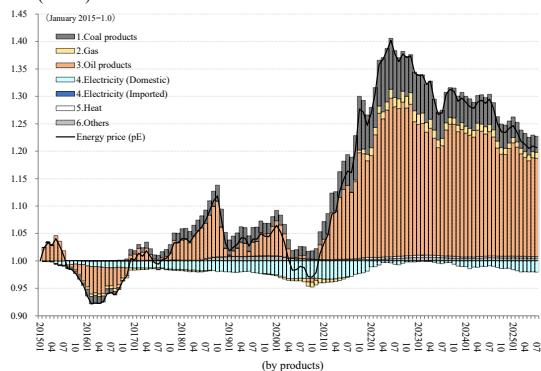
### 2.2 Electricity price



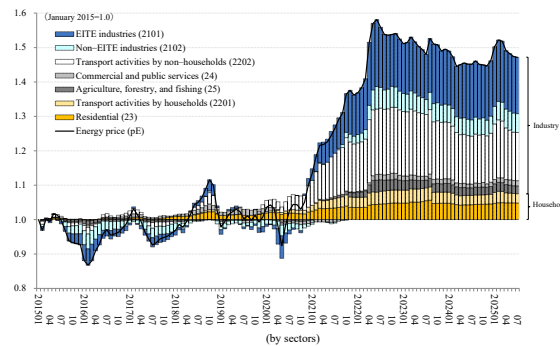
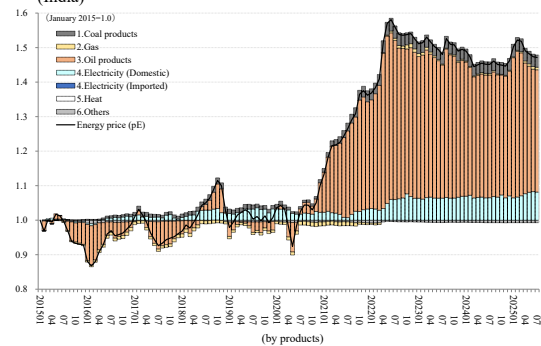
Unit: Index (price at local currency unit in 2015=1.0 in each country). Period: January 2015– July 2025. Notes: Energy price is defined as the implicit Translog index. The prices are seasonally adjusted and include taxes and subsidies.

### 2.3 Sources of Energy Price Changes • Asia (China, India, Japan, and Korea)

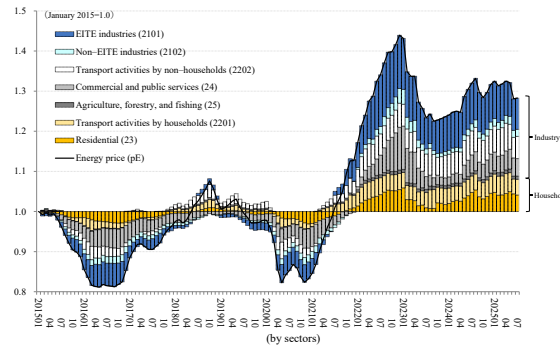
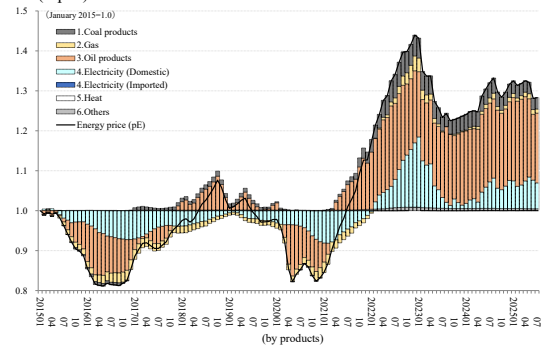
(China)



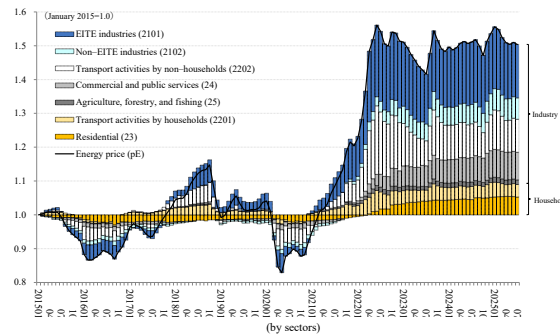
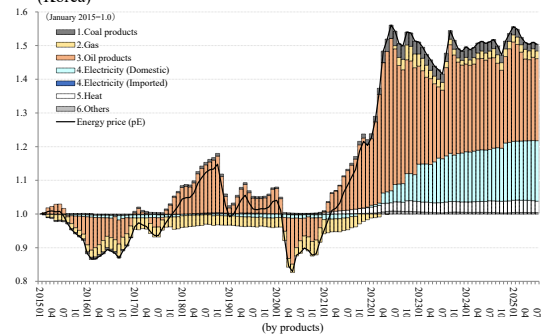
(India)



(Japan)



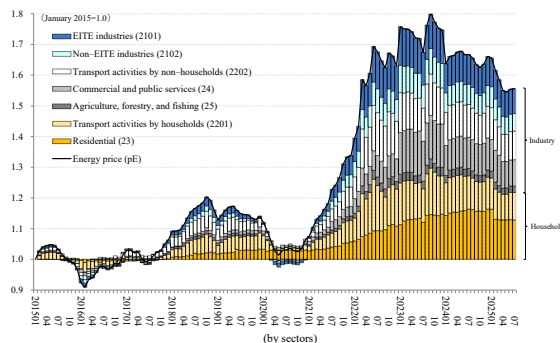
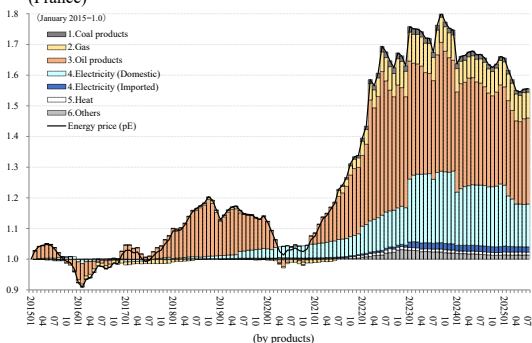
(Korea)



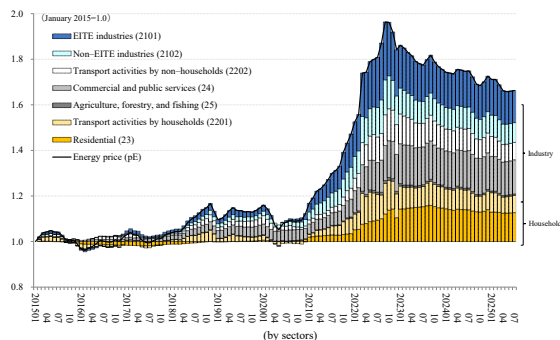
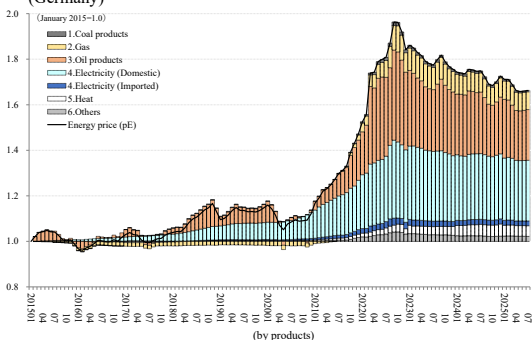
Unit: Index (price at local currency unit in January 2015=1.0 in each country). Period: January 2015– July 2025. Note: The prices are seasonally adjusted and include taxes and subsidies.

• EU (France, Germany, and Italy), the UK, and the U.S.

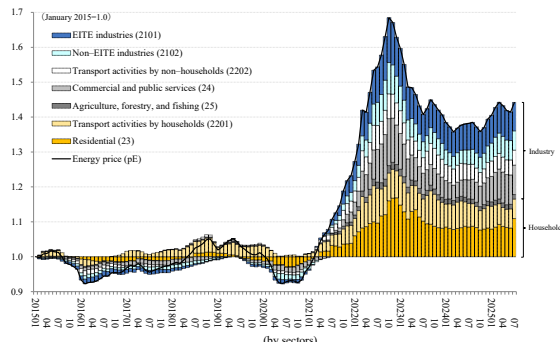
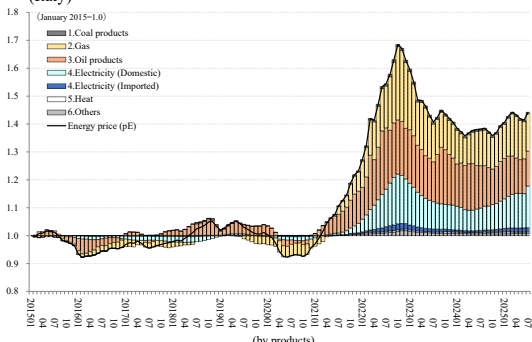
(France)



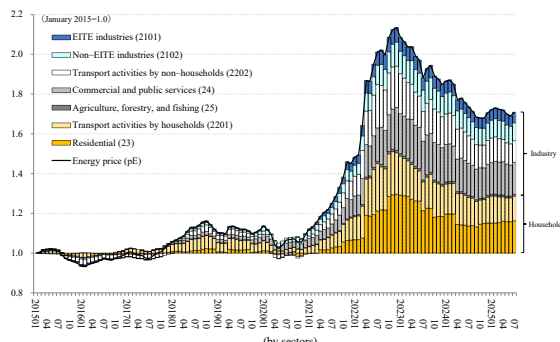
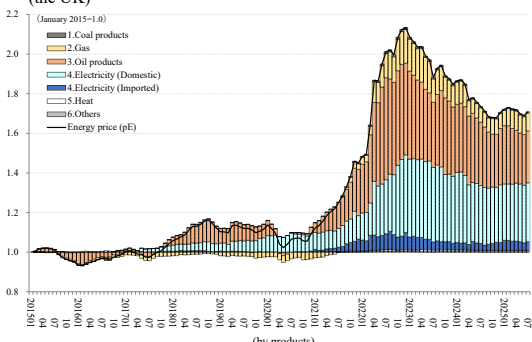
(Germany)



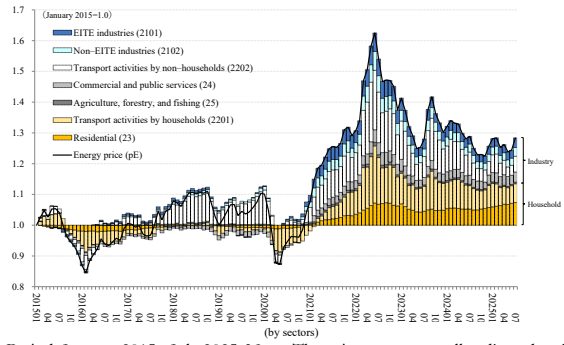
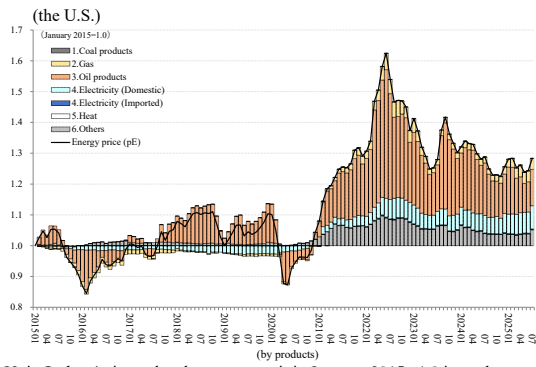
(Italy)



(the UK)

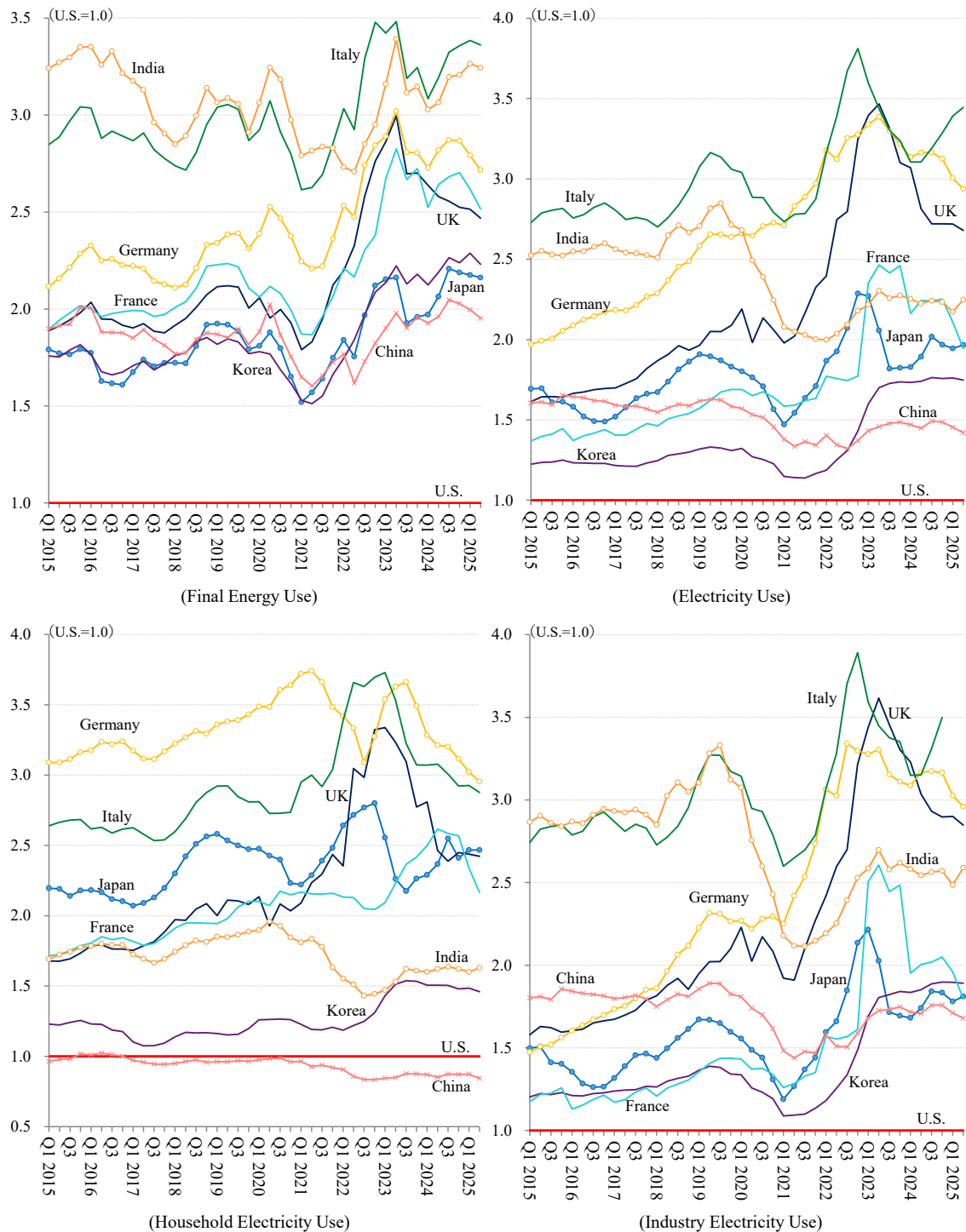


Unit: Index (price at local currency unit in January 2015=1.0 in each country). Period: January 2015– July 2025. Note: The prices are seasonally adjusted and include taxes and subsidies.



Unit: Index (price at local currency unit in January 2015=1.0 in each country). Period: January 2015– July 2025. Note: The prices are seasonally adjusted and include taxes and subsidies.

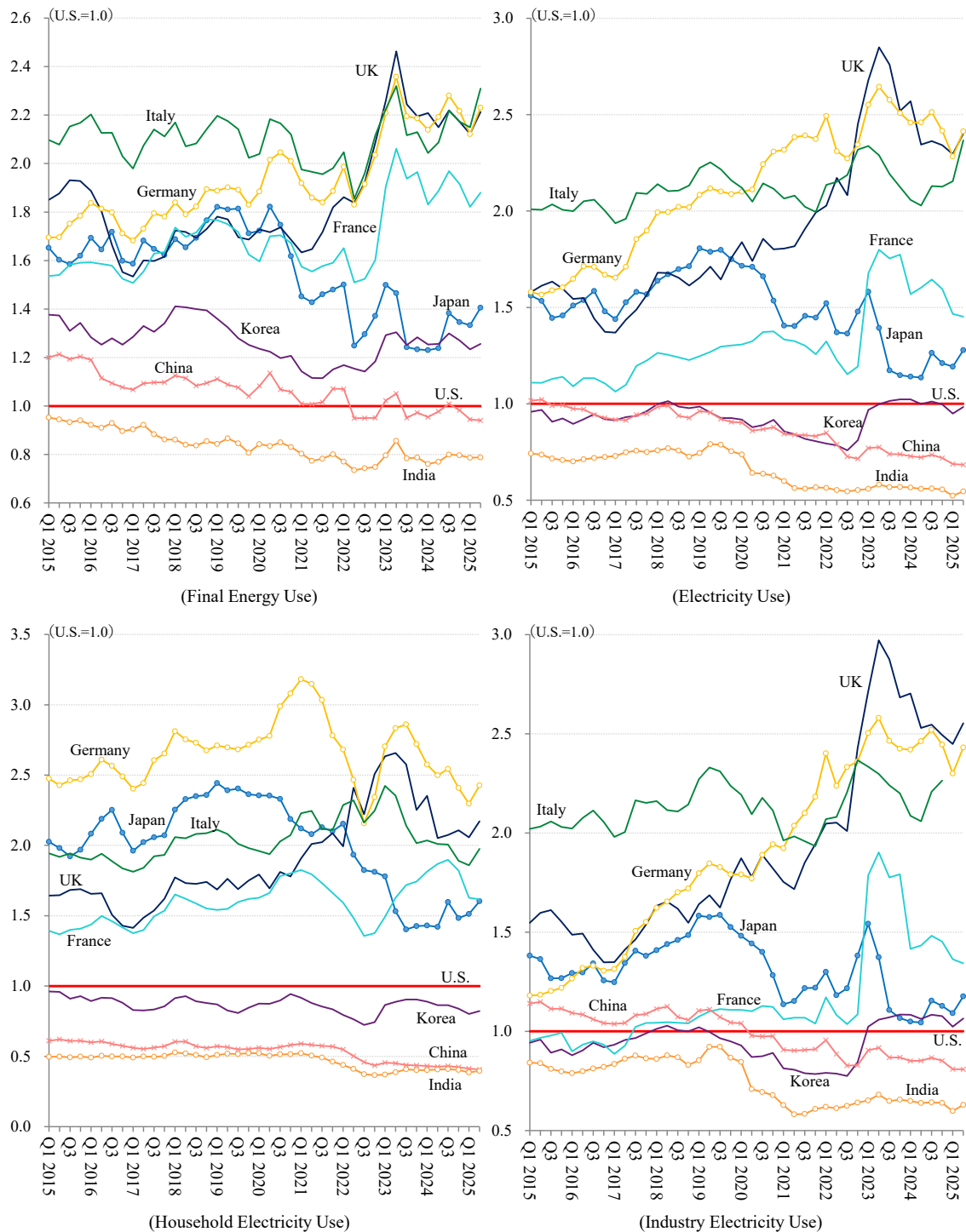
3 Real PLI



Unit: Index (the U.S. REP in each period=1.0). Period: Q1 2015–Q2 2025. Notes: The prices are seasonally adjusted and include taxes and subsidies.



4 Nominal PLI



Unit: Index (the U.S. in each period=1.0). Period: Q1 2015–Q2 2025. Notes: The prices are seasonally adjusted and include taxes and subsidies.

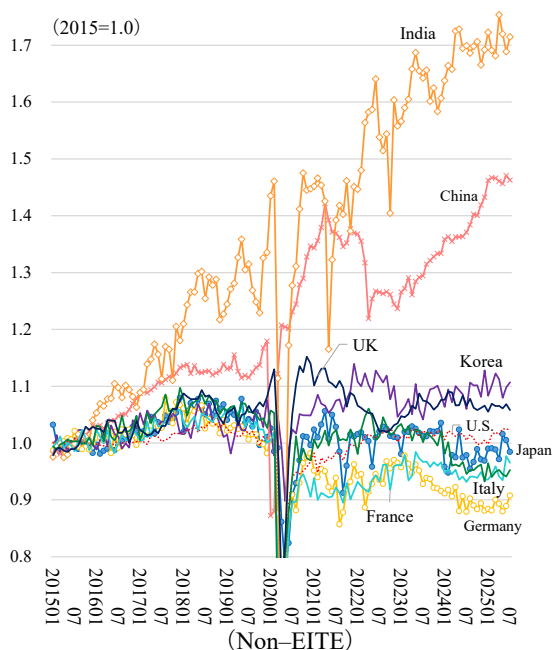
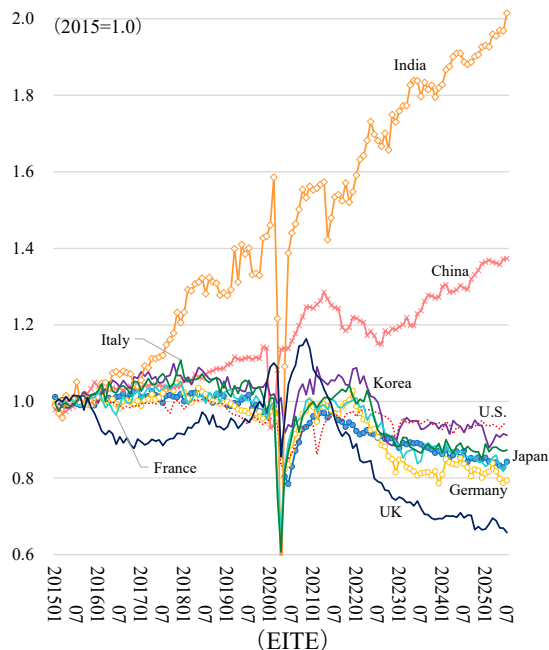
5 Nominal/Real PLI Matrix

		(Nominal PLI)											(Real PLI)								
Reference country	a.Q2 2025 b.2015–19 c.ln(a/b)	Comparison country									Reference country	a.Q2 2025 b.2015–19 c.ln(a/b)	Comparison country								
	CHN	IND	JPN	KOR	FRA	DEU	ITA	GBR	USA	CHN		IND	JPN	KOR	FRA	DEU	ITA	GBR	USA		
China (CHN)	1.00	1.66	1.11	1.14	1.29	1.39	1.72	1.26	0.51	China (CHN)	1.00	0.84	1.49	1.34	2.00	2.37	2.46	2.35	1.06		
	1.00	1.67	0.94	0.94	1.09	1.19	1.55	1.05	0.53	1.00	0.79	1.51	1.19	1.46	1.61	1.89	1.89	1.55	0.90		
India (IND)	0.60	1.00	0.67	0.69	0.78	0.84	1.04	0.76	0.31	India (IND)	1.19	1.00	1.78	1.59	2.38	2.83	2.93	2.81	1.27		
	0.60	1.00	0.57	0.57	0.66	0.72	0.93	0.63	0.32	1.26	1.00	1.90	1.50	1.84	2.03	2.39	1.95	1.13			
Japan (JPN)	0.90	1.50	1.00	1.03	1.16	1.26	1.55	1.14	0.46	Japan (JPN)	0.67	0.56	1.00	0.89	1.34	1.59	1.64	1.57	0.71		
	1.07	1.78	1.00	1.00	1.16	1.27	1.65	1.12	0.57	0.67	0.53	1.00	0.79	0.97	1.07	1.26	1.03	0.60			
Korea (KOR)	0.88	1.45	0.97	1.00	1.13	1.22	1.51	1.11	0.45	Korea (KOR)	0.75	0.63	1.12	1.00	1.50	1.78	1.84	1.76	0.80		
	1.07	1.78	1.00	1.00	1.16	1.27	1.65	1.12	0.57	0.84	0.67	1.27	1.00	1.23	1.35	1.59	1.31	0.75			
France (FRA)	0.78	1.29	0.86	0.89	1.00	1.08	1.34	0.98	0.40	France (FRA)	0.50	0.42	0.75	0.67	1.00	1.19	1.23	1.18	0.53		
	0.92	1.54	0.86	0.86	1.00	1.10	1.42	0.97	0.49	0.69	0.55	1.03	0.82	1.00	1.10	1.30	1.06	0.61			
Germany (DEU)	0.72	1.19	0.80	0.82	0.93	1.00	1.24	0.91	0.37	Germany (DEU)	0.42	0.35	0.63	0.56	0.84	1.00	1.04	0.99	0.45		
	0.84	1.40	0.79	0.79	0.91	1.00	1.30	0.88	0.45	0.62	0.50	0.94	0.74	0.91	1.00	1.18	0.96	0.56			
Italy (ITA)	0.58	0.97	0.64	0.66	0.75	0.81	1.00	0.73	0.30	Italy (ITA)	0.41	0.34	0.61	0.54	0.81	0.97	1.00	0.96	0.43		
	0.65	1.08	0.61	0.61	0.70	0.77	1.00	0.68	0.34	0.53	0.42	0.79	0.63	0.77	0.85	1.00	0.82	0.47			
UK (GBR)	0.79	1.31	0.88	0.90	1.02	1.10	1.36	1.00	0.41	UK (GBR)	0.42	0.36	0.63	0.57	0.85	1.01	1.04	1.00	0.45		
	0.95	1.59	0.89	0.89	1.03	1.13	1.47	1.00	0.51	0.65	0.51	0.97	0.77	0.95	1.04	1.23	1.00	0.58			
U.S. (USA)	1.95	3.24	2.16	2.23	2.52	2.72	3.36	2.47	1.00	U.S. (USA)	0.94	0.79	1.41	1.26	1.88	2.23	2.31	2.21	1.00		
	1.87	3.12	1.76	1.76	2.04	2.24	2.90	1.97	1.00	1.12	0.89	1.68	1.33	1.63	1.80	2.11	1.73	1.00			

Unit: Bilateral ratios, reference country = 1.0. Notes: For each cell, the upper figure refers to Q2 2025, the lower figure to the pre-pandemic average (2015–2019), and the value in parentheses shows the log-growth from the pre-pandemic average, computed to preserve transitivity in bilateral comparisons. Cells in blue indicate a relative narrowing of the gap of the comparison country vis-à-vis the reference country, whereas cells in red indicate a widening.

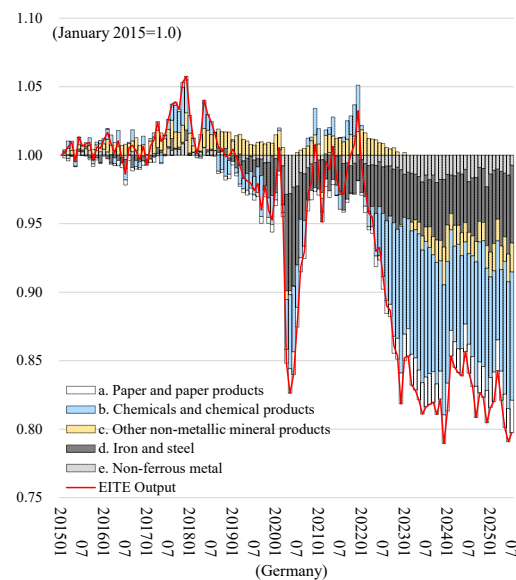
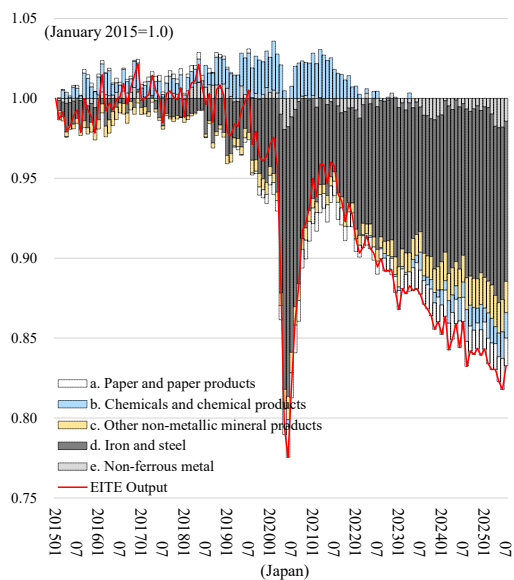
## 6 EITE Output

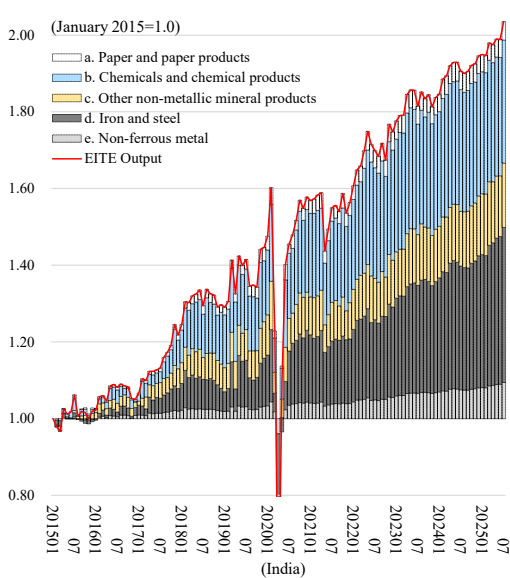
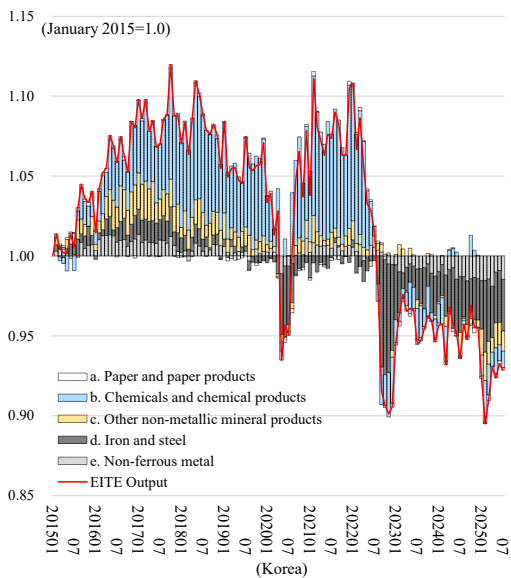
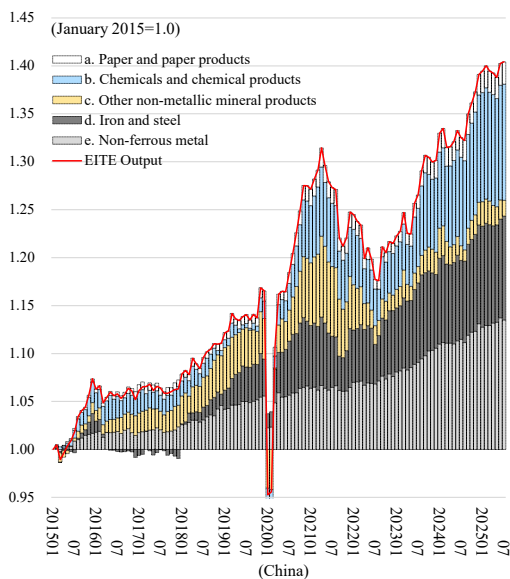
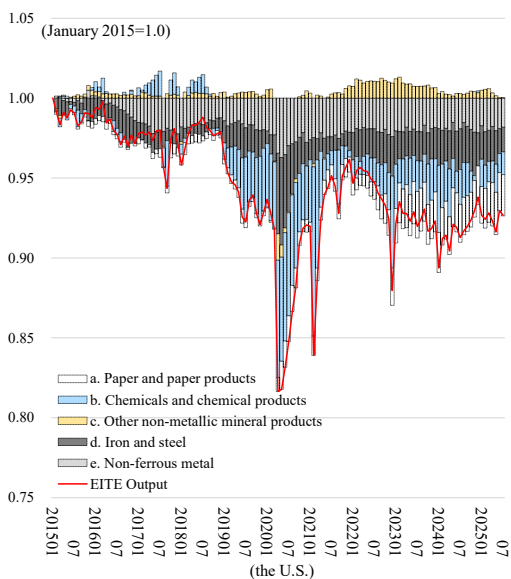
### 6.1 EITE Outputs



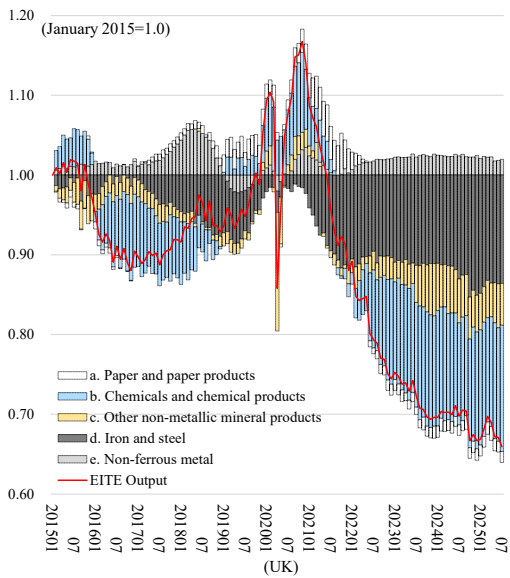
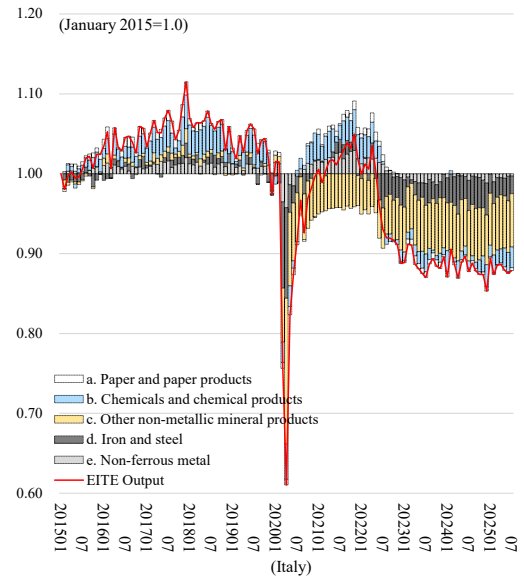
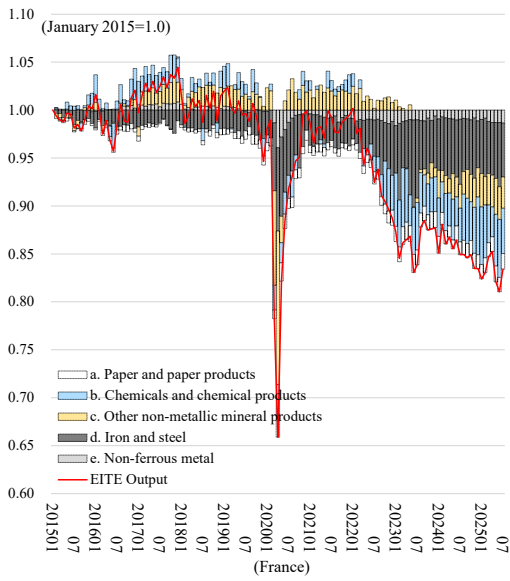
Unit: Index (output in January 2015=1.0). Period: January 2015– July 2025. Notes: EITE manufacturing are defined as Paper and paper products, Chemicals and chemical products (excluding pharmaceuticals), Other non-metallic mineral products, Iron and steel, and Non-ferrous metal. Non-EITE manufacturing are all other manufacturing industries. Indices.

### 6.2 EITE Output Decomposition



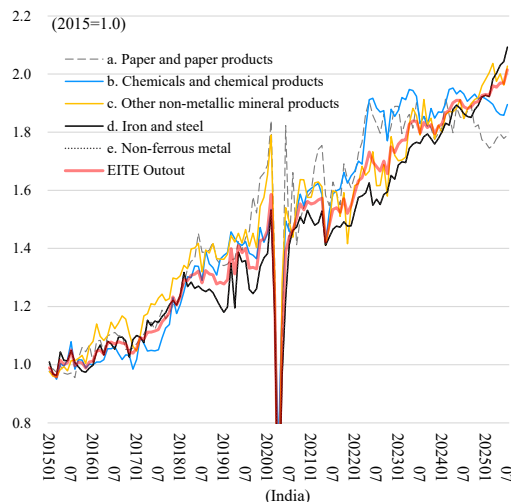
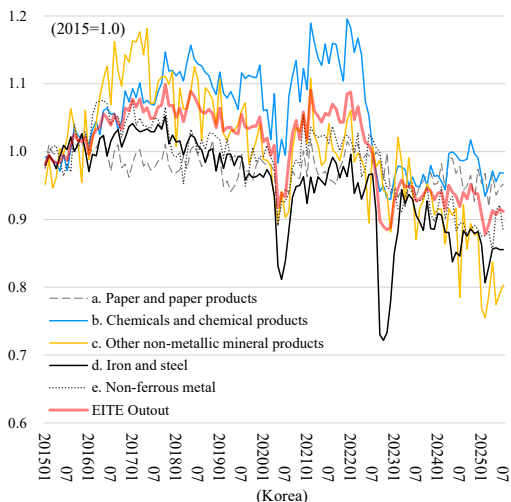
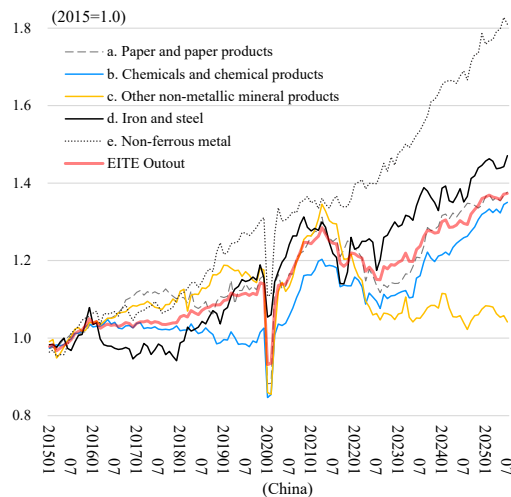
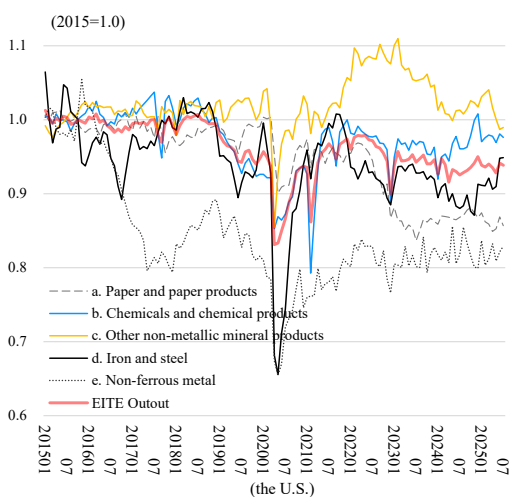
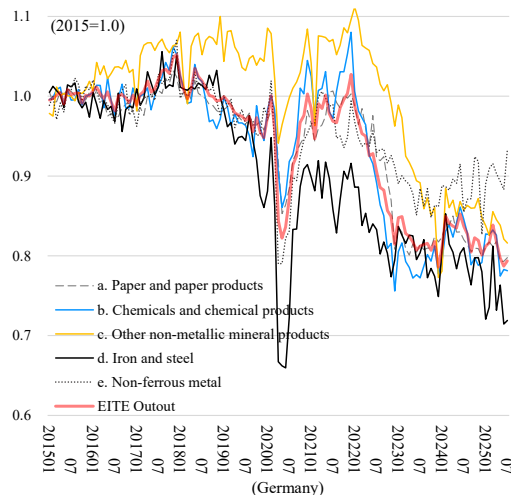
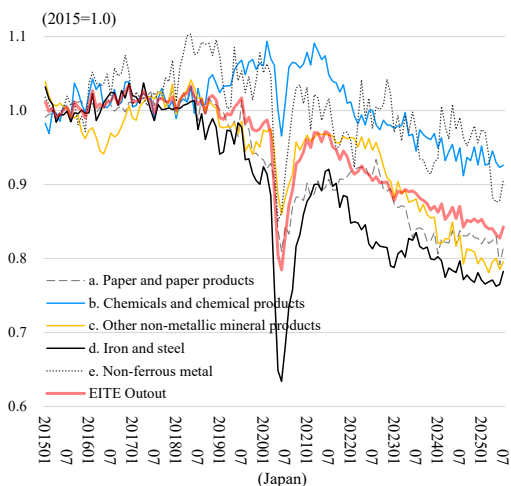


Unit: Index (output in January 2015=1.0). Period: January 2015– July 2025. Source: see section 6.1. Note: The industry contribution is based on the Translog index using the previous year's output value share.

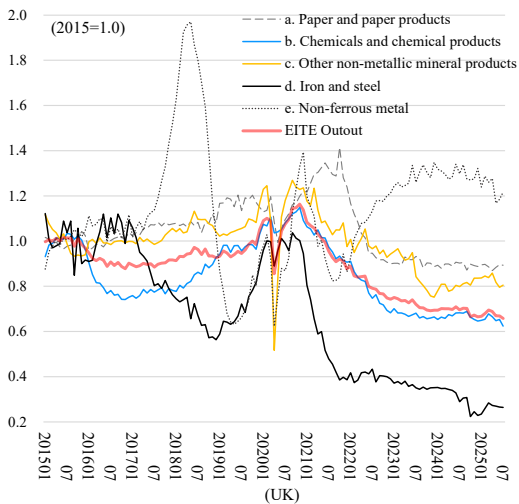
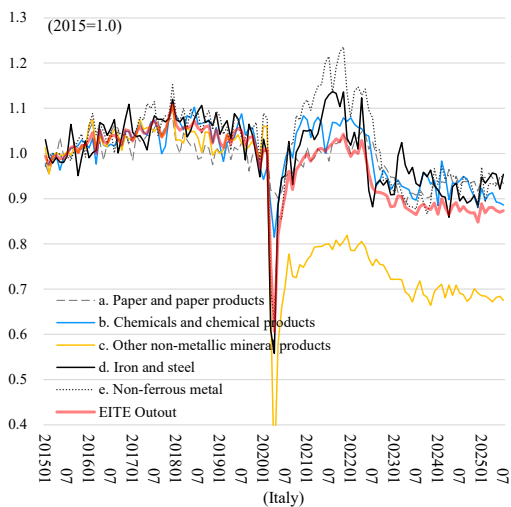
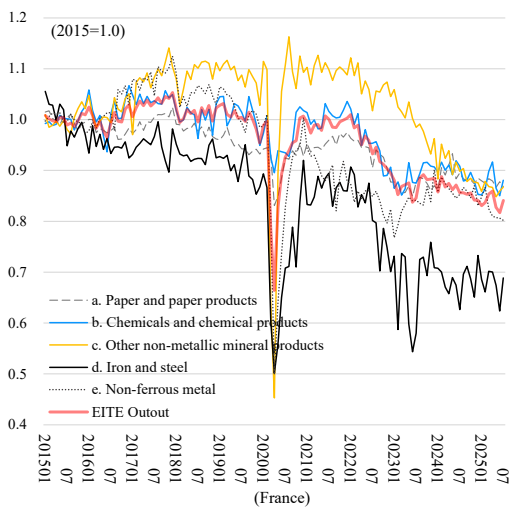


Unit: Index (output in January 2015=1.0). Period: January 2015– July 2025. Source: see section 6.1. Note: The industry contribution is based on the Translog index using the previous year's output value share.

### 6.3 EITE Output Indices by Country

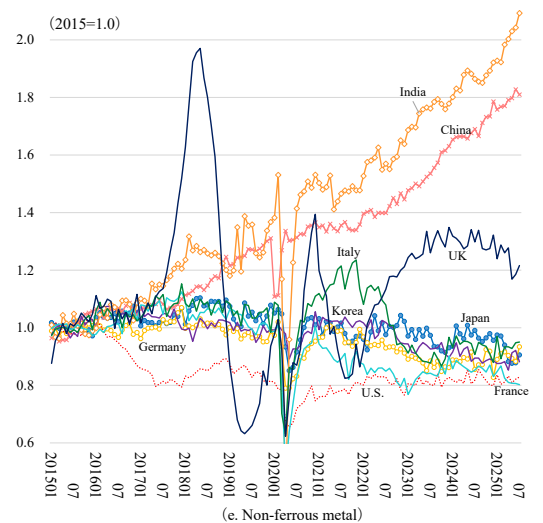
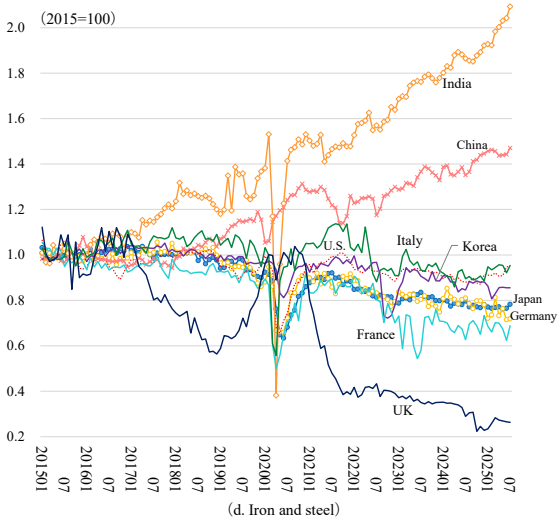
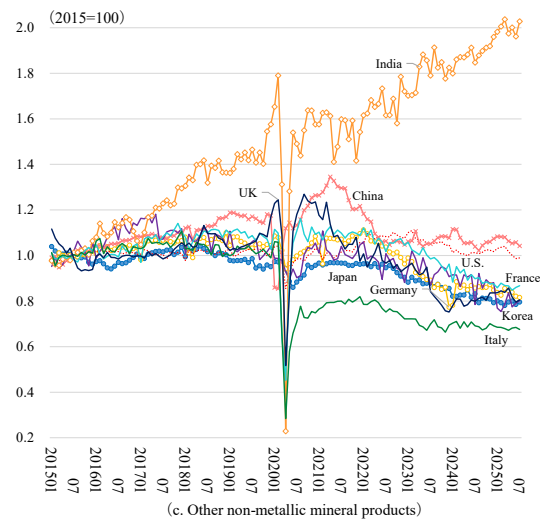
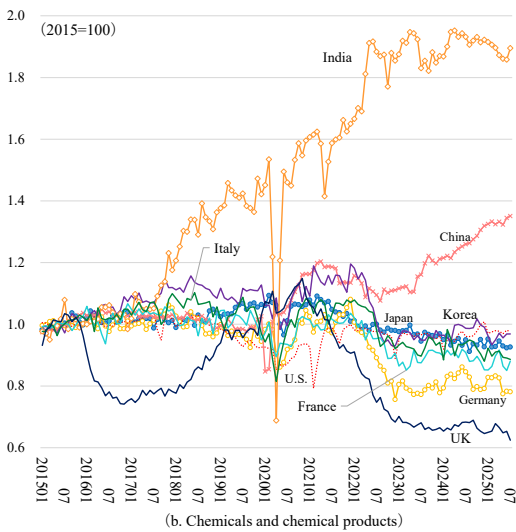
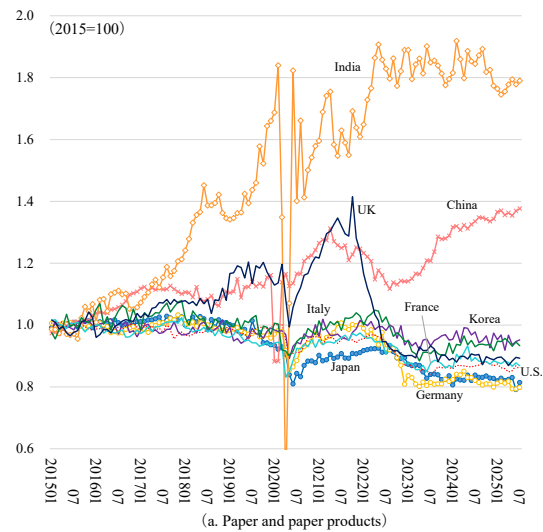


Unit: Index (output in 2015=1.0). Period: January 2015– July 2025. Source: see section 6.1.



Unit: Index (output in 2015=1.0). Period: January 2015– July 2025. Source: see section 6.1.

### 6.4 EITE Output Indices by Industry

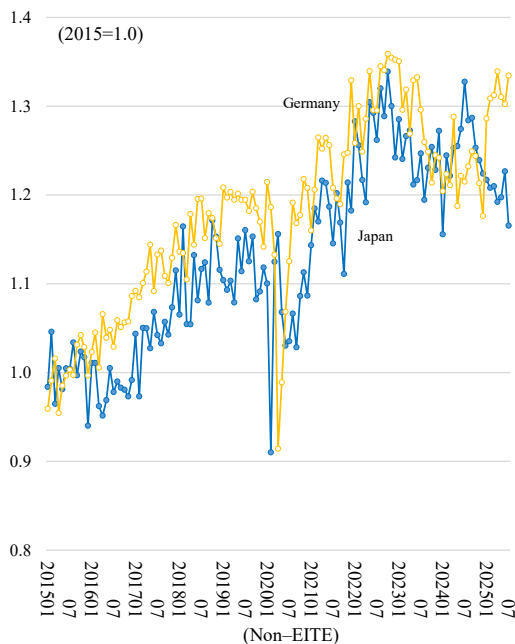
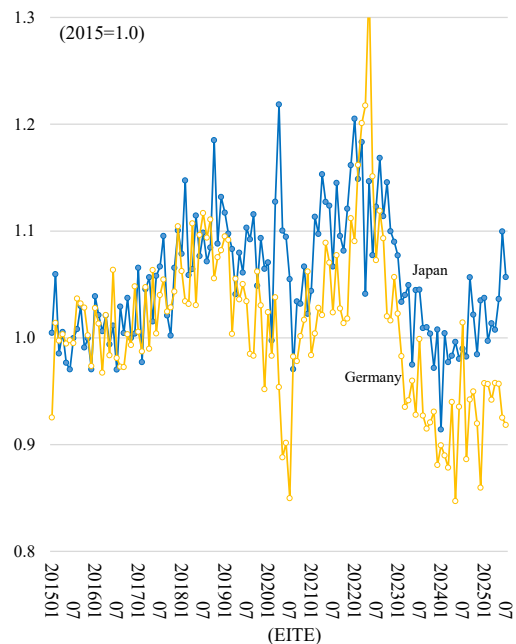


Unit: Index (output in 2015=1.0). Period: January 2015– July 2025. Source: see section 6.1.



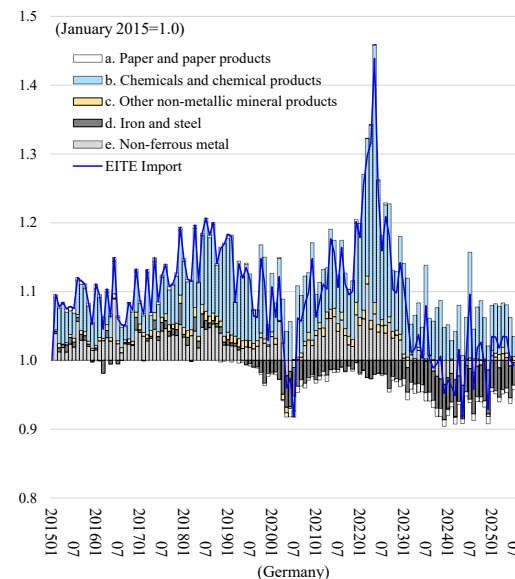
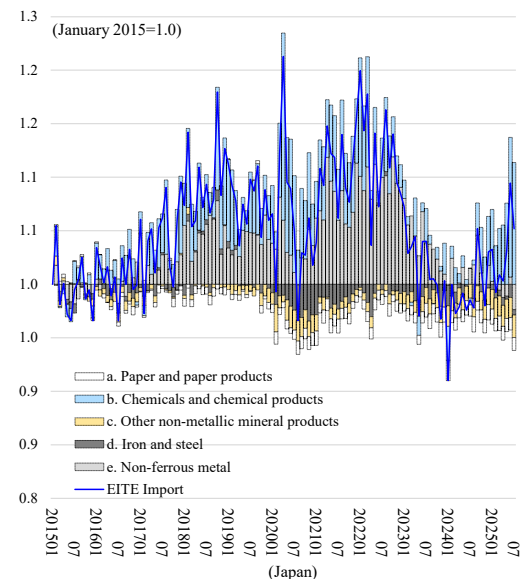
7 EITE Import

5.1 EITE Imports



Unit: Index (import in January 2015=1.0). Period: January 2015– July 2025. Note: Import Indices is based on the Translog index using the previous year's import value share.

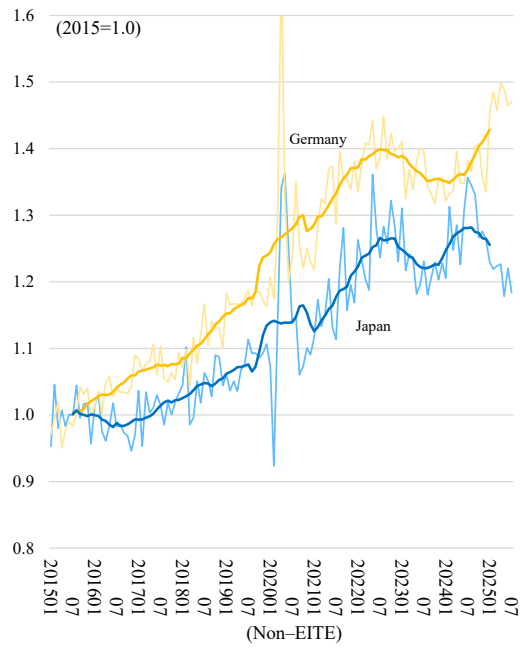
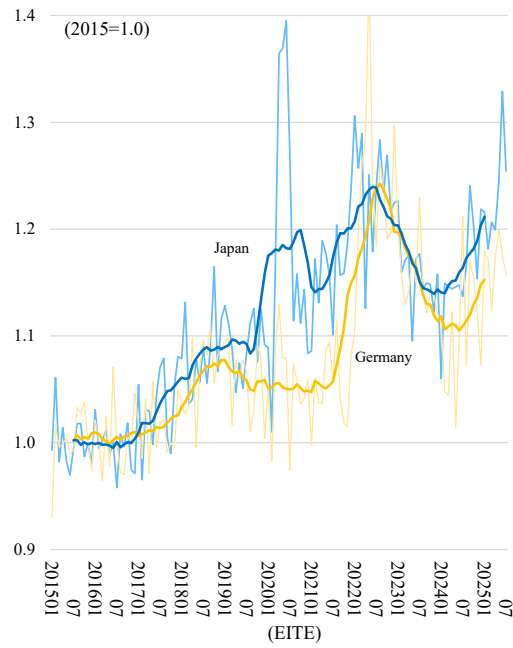
5.2 EITE Import Decomposition



Unit: Index (import in January 2015=1.0). Period: January 2015– July 2025. Note: Import Indices is based on the Translog index using the previous year's import value share.

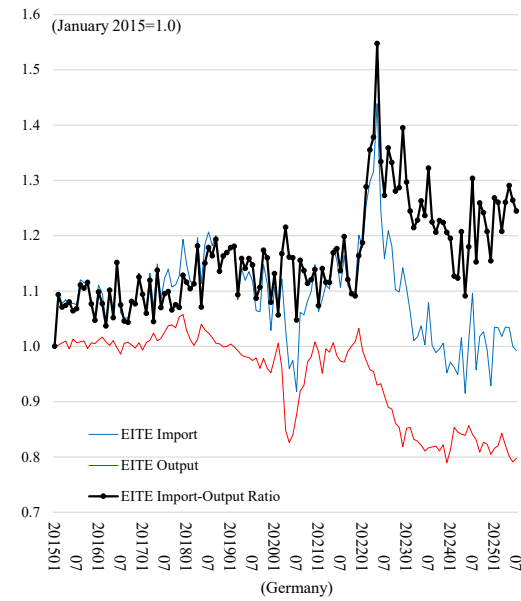
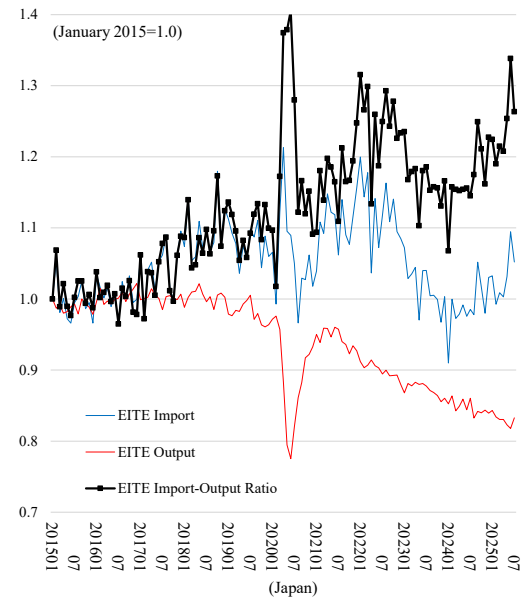
8 EITE Import-Output Ratio

8.1 EITE Import-Output Ratio



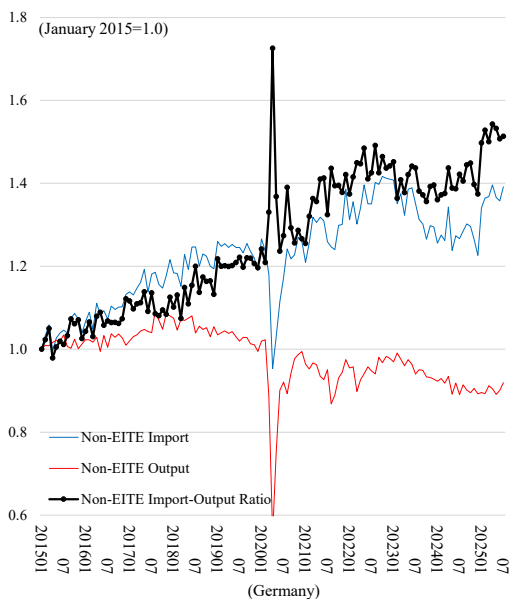
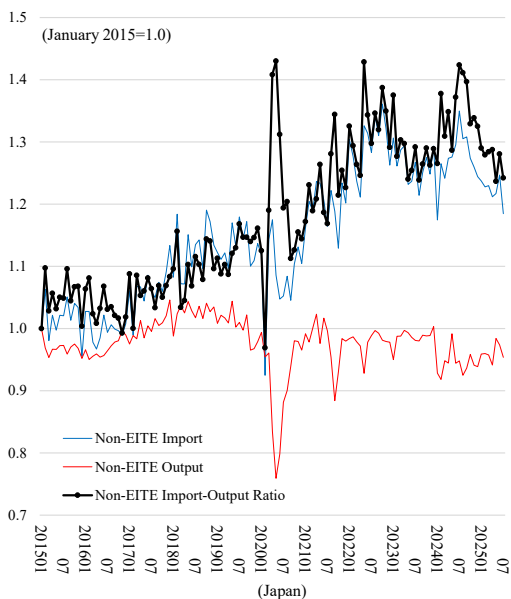
Unit: Index (import and output in January 2015=1.0). Period: January 2015– July 2025.

8.2 EITE Import, Output, and Import-Output Ratio



Unit: Index (import and output in January 2015=1.0). Period: January 2015– July 2025.

### 8.3 Non-EITE Import, Output, and Import-Output Ratio



Unit: Index (import and output in January 2015=1.0). Period: January 2015– July 2025.