



Multilateral ECM (Energy Cost Monitoring)

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

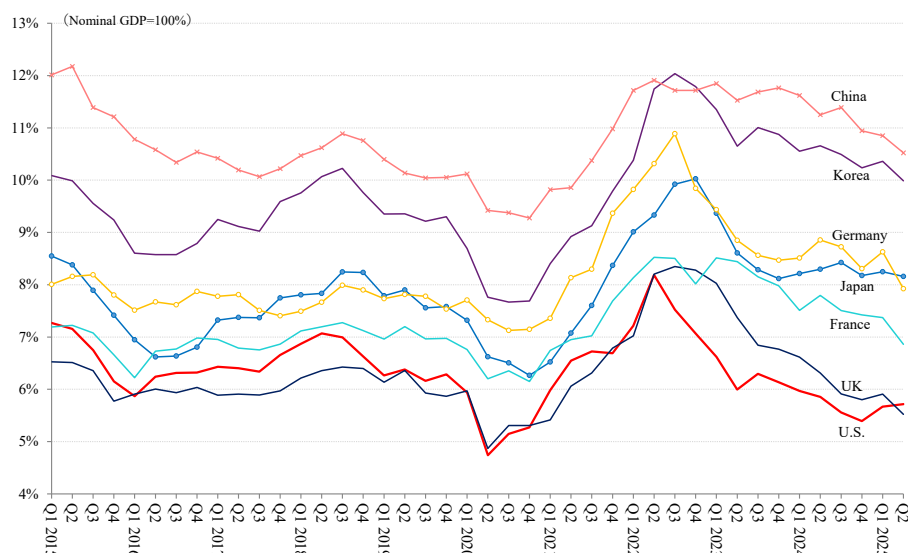
ECM_202508

September 6, 2025

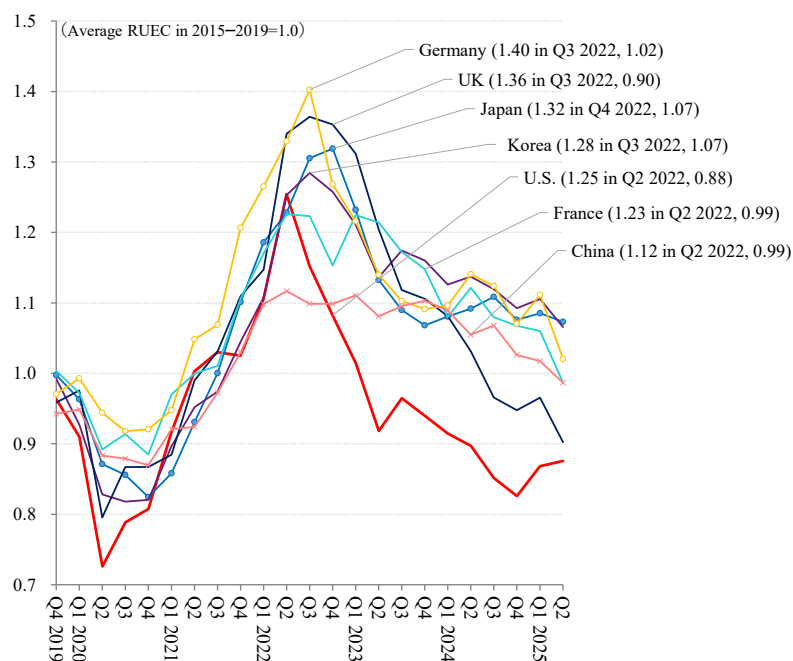
Koji Nomura, Sho Inaba, and Mansaku Yoshida.

1 RUEC (Real Unit Energy Cost)

1.1 RUEC Levels

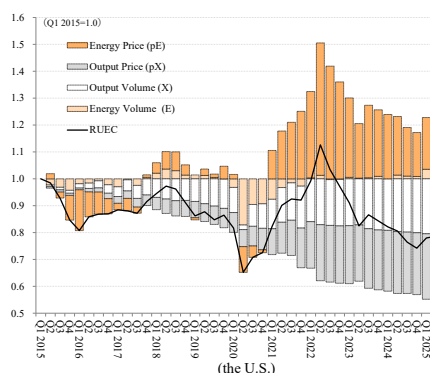
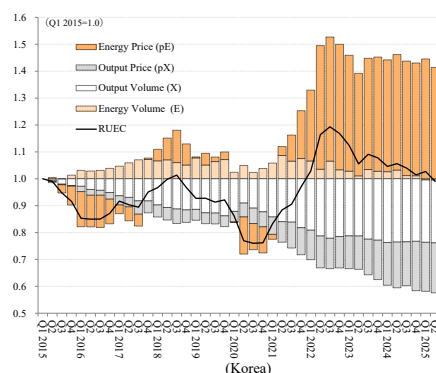
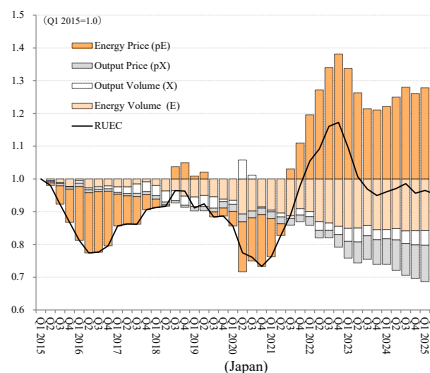
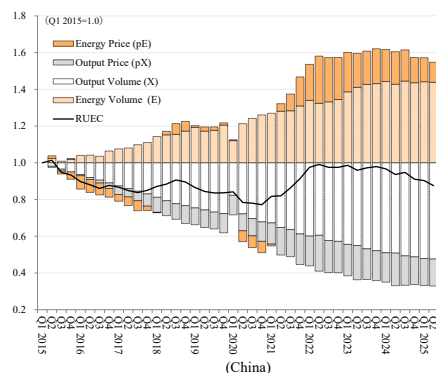


1.2 Post-Pandemic RUEC Indices



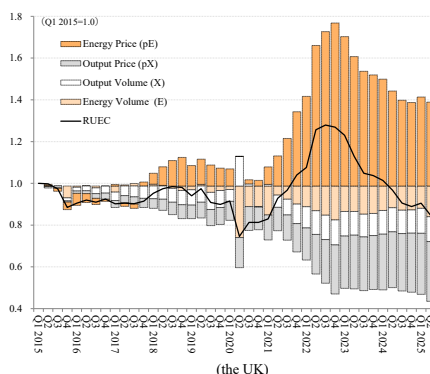
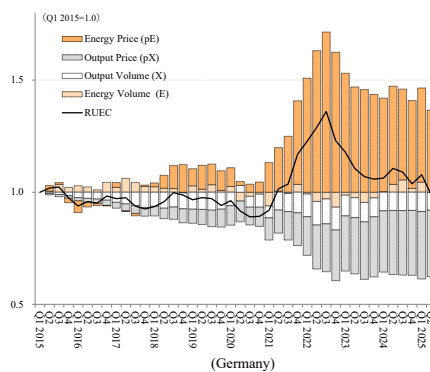
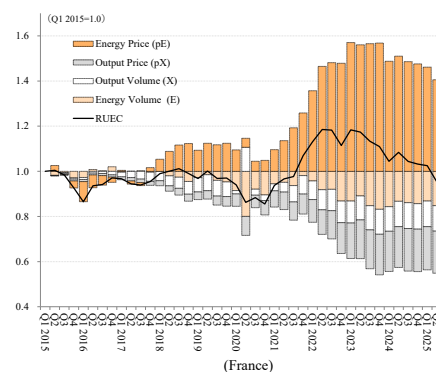
1.3 RUEC Decomposition

• Asia (China, Japan, and Korea) and 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.

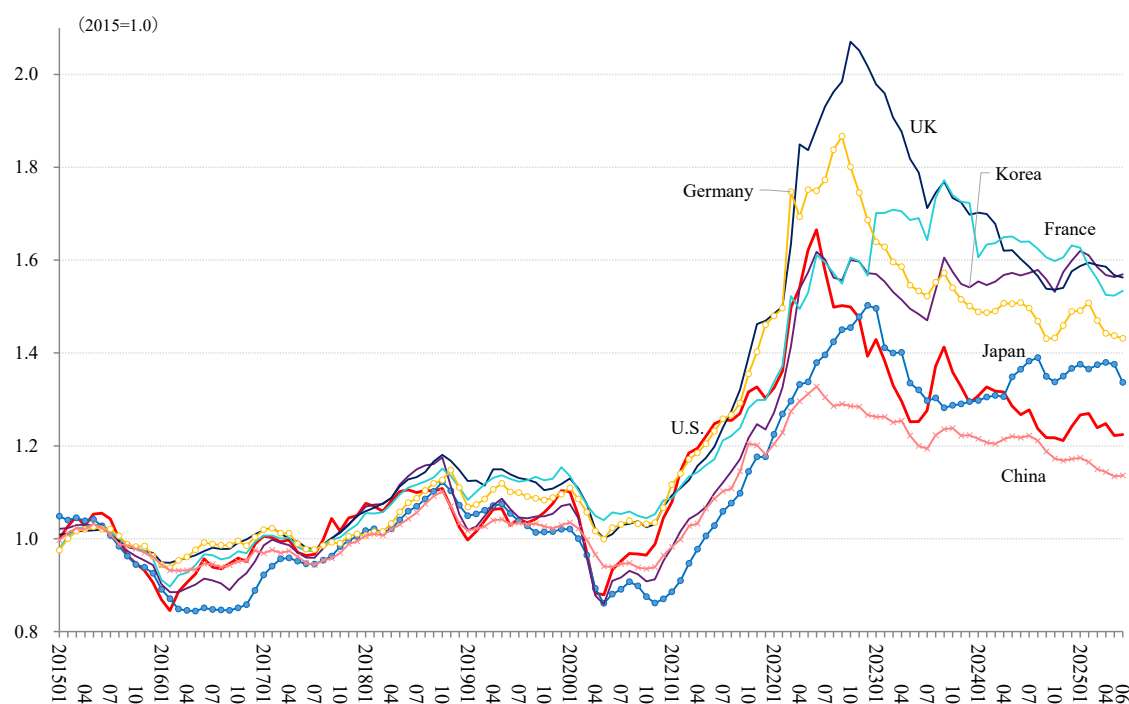
• EU (Germany, France) and the UK



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.

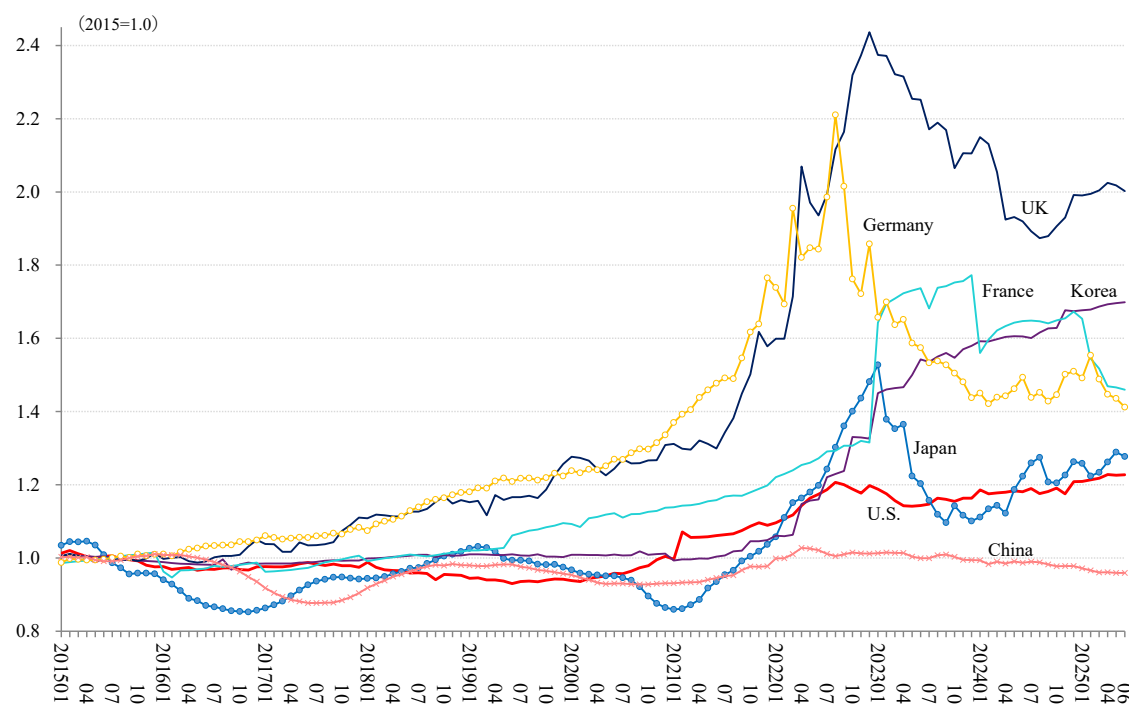
2 Energy Prices

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– June 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

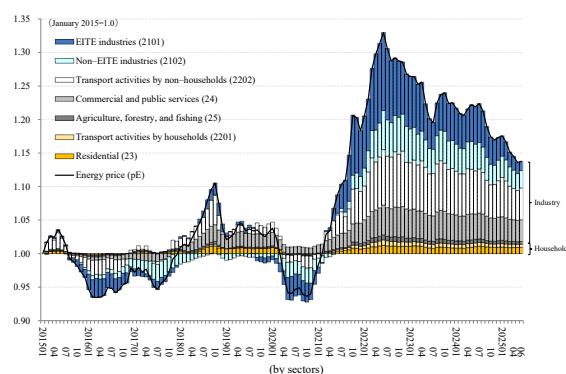
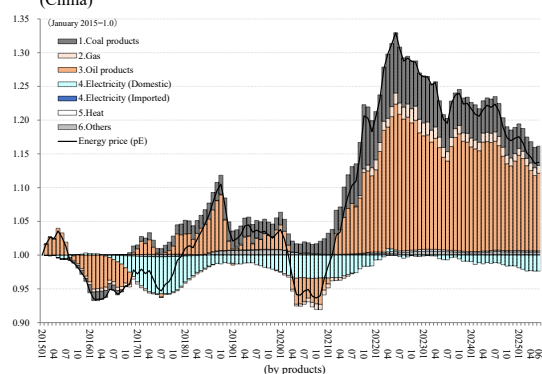


Unit: Index (price at local currency unit in 2015=1.0 in each country). Period: January 2015– June 2025. Notes: Energy price is defined as the implicit Translog index. The prices are seasonally adjusted and include taxes and subsidies.

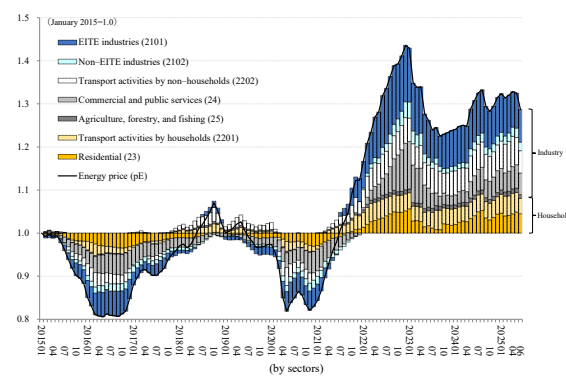
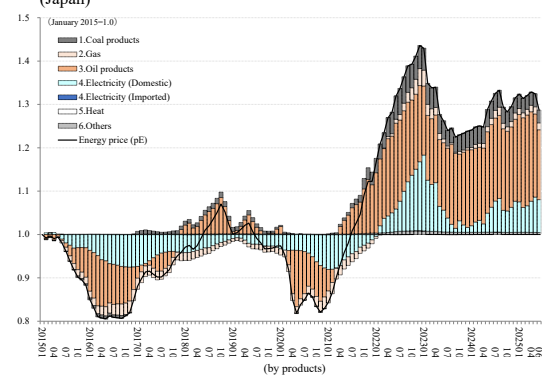
2.3 Sources of Energy Price Changes

• Asia (China, Japan, and Korea) and the U.S.

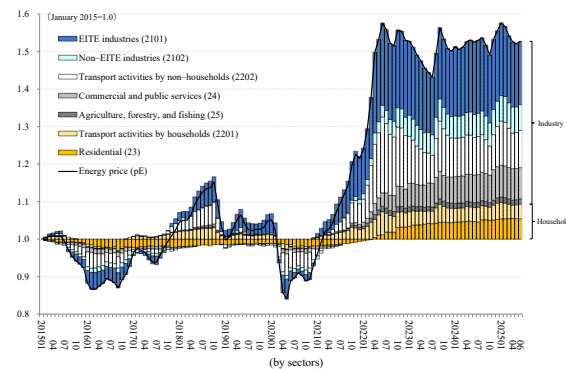
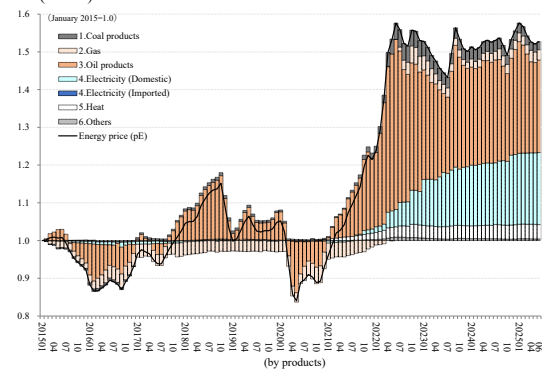
(China)



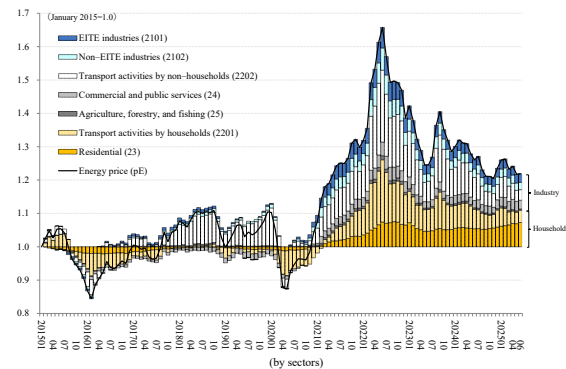
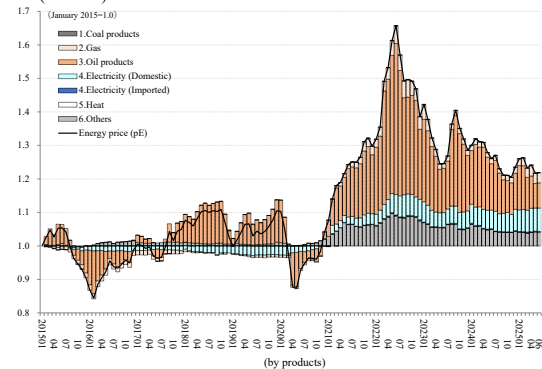
(Japan)



(Korea)



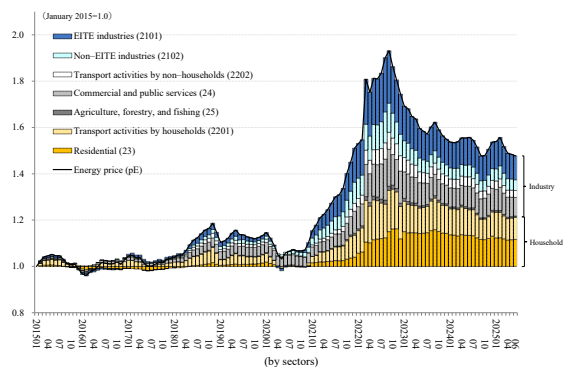
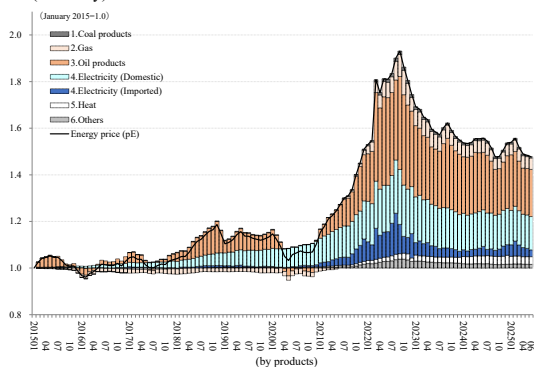
(the U.S.)



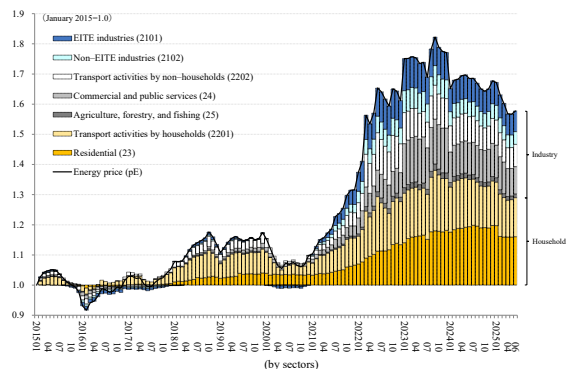
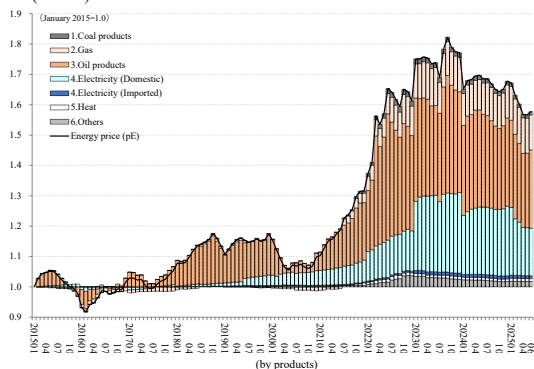
Unit: Index (price at local currency unit in January 2015=1.0 in each country). Period: January 2015– June 2025. Note: The prices are seasonally adjusted and include taxes and subsidies.

• EU (Germany, France) and the UK

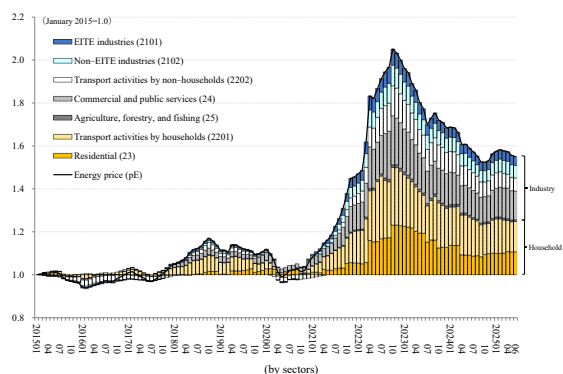
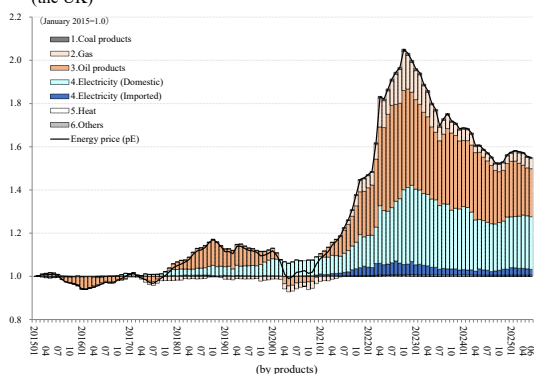
(Germany)



(France)

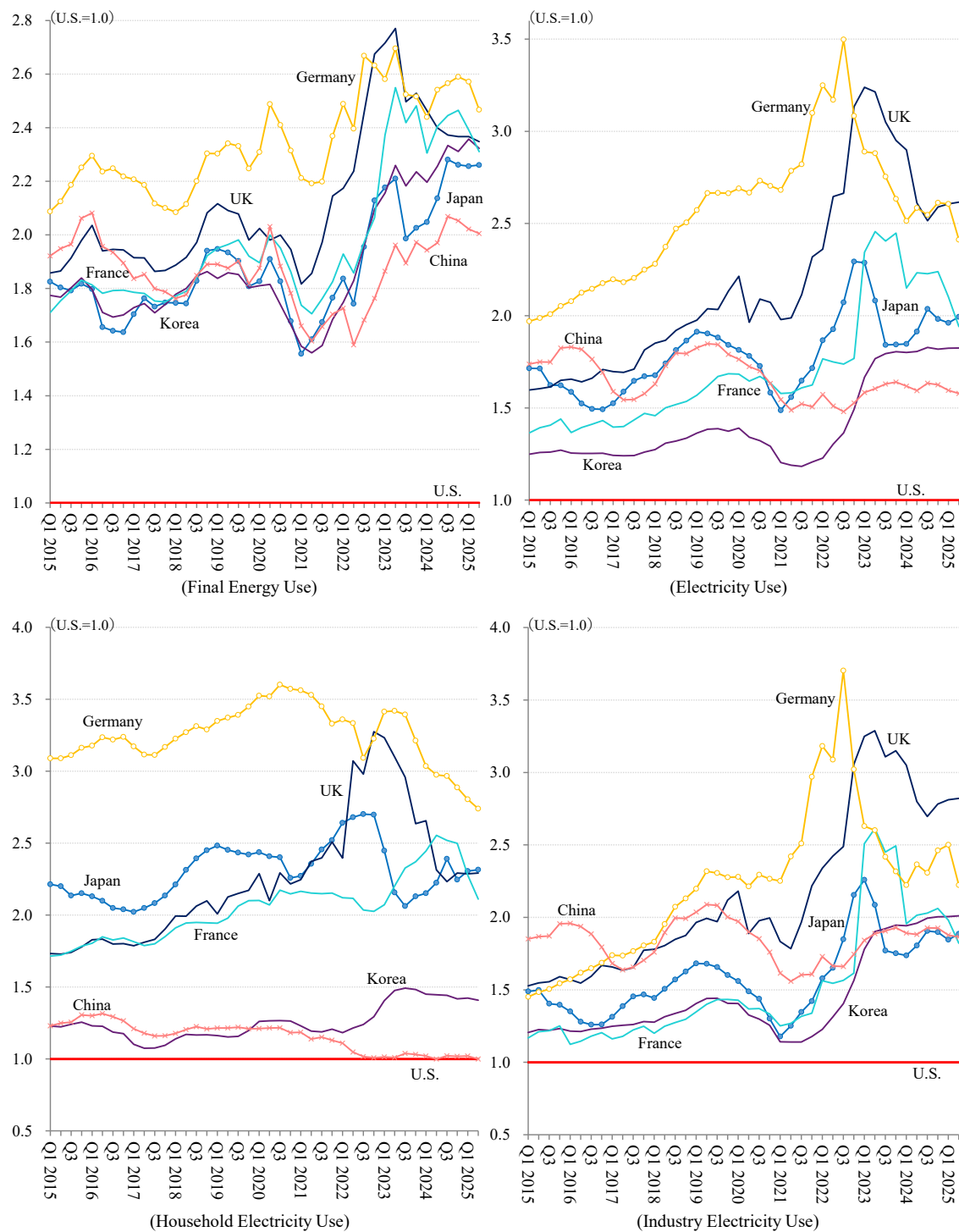


(the UK)



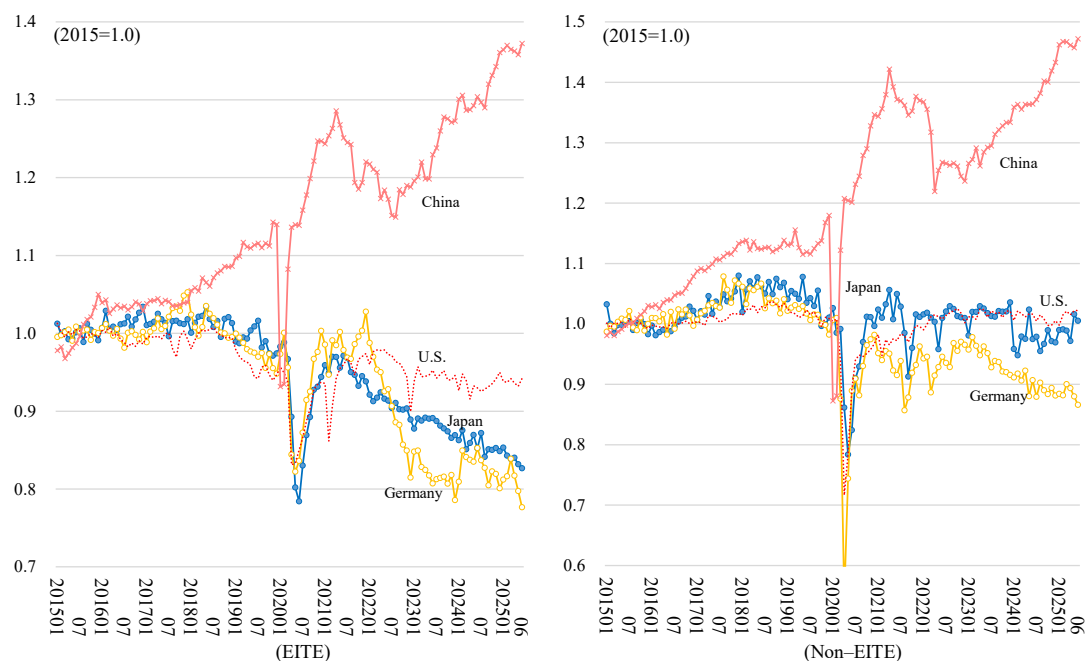
Unit: Index (price at local currency unit in January 2015=1.0 in each country). Period: January 2015– June 2025. Note: The prices are seasonally adjusted and include taxes and subsidies.

3 Real PLI



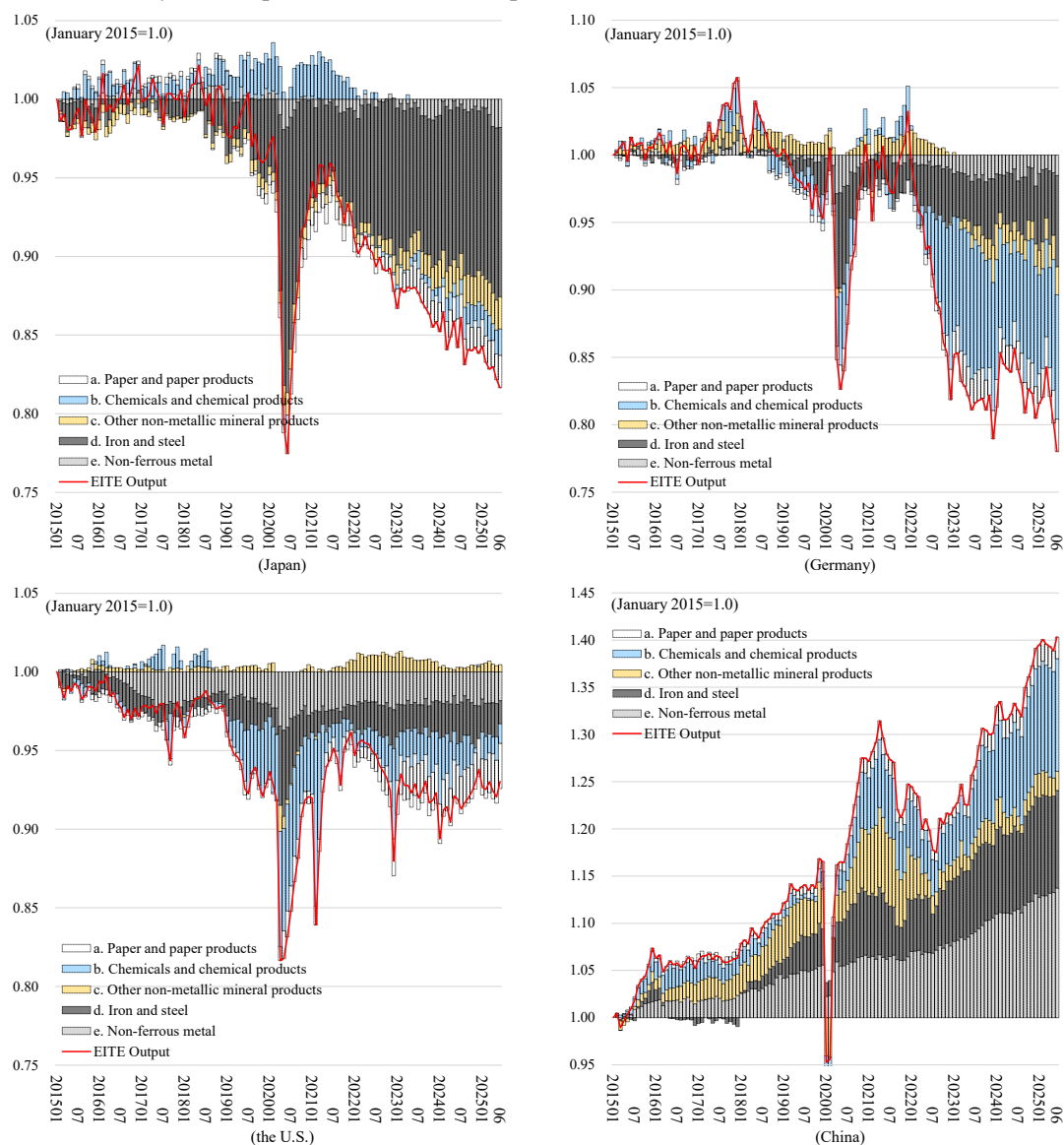
4 EITE Output Index

4.1 EITE and Non-EITE Outputs



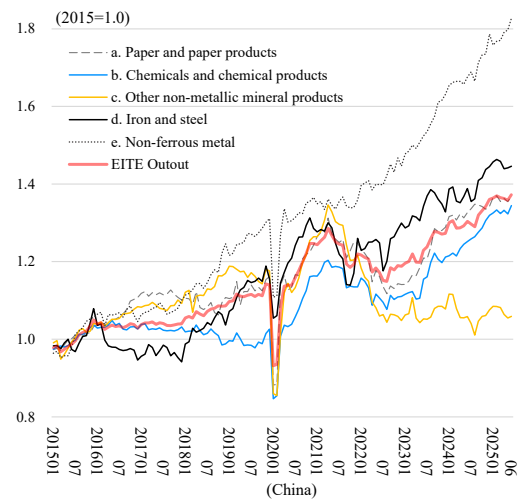
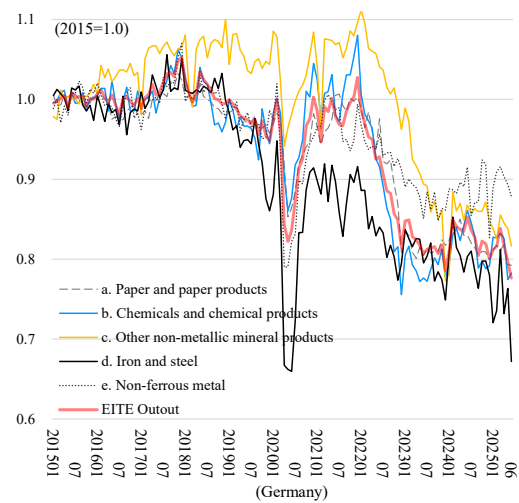
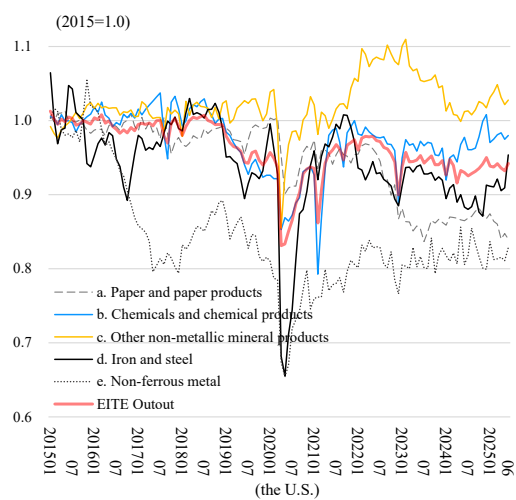
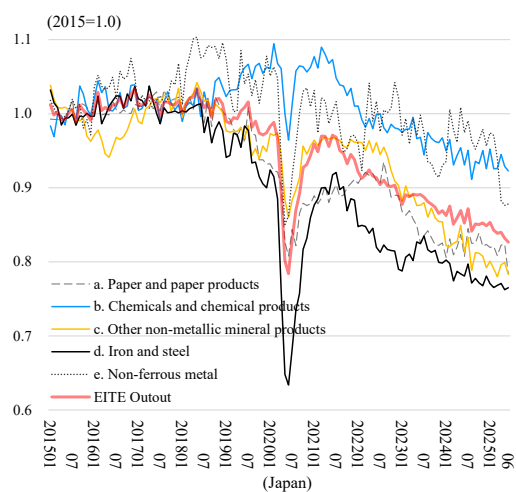
Unit: Index (output in January 2015=1.0). Period: January 2015– June 2025. Sources: our computation is based on (Japan) Cabinet Office, Economic and Social Research Institute (ESRI) *Japanese National Accounts (JNA)*, Ministry of Economy, Trade and Industry (METI) *Indices of Industrial Production, Current Production Statistics*, Bank of Japan (BoJ) *Corporate Goods Price Index (CGPI)*, and National Federation of Ready-Mixed Concrete Industry Associations *National ready-mixed concrete shipments*. (Germany) Statistisches Bundesamt (Destatis) *German National Accounts, Cost Structure Survey in Manufacturing, Mining and Quarrying, Indices of Production in Manufacturing, Index of Import Prices, and Foreign Trade*. (The U.S.) Bureau of Economic Analysis (BEA) *The National Income and Product Accounts (NIPAs)*, Federal Reserve Board (FRB) *Industrial Production and Capacity Utilization*, and Bureau of Labor Statistics (BLS) *Producer Price Indexes*. (China) National Bureau of Statistics of China (NSB) *China's System of National Accounts (CSNA)*, *Producer Price Index*, *Value-added Industrial Output*, and *Main Indicators of Industrial Enterprises*. 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.

4.2 Industry Decomposition of EITE Output Index



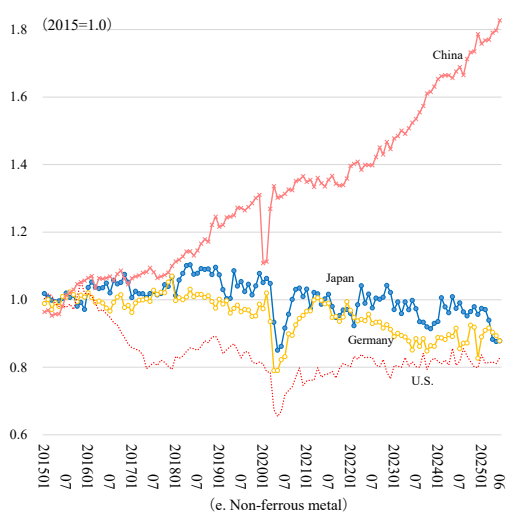
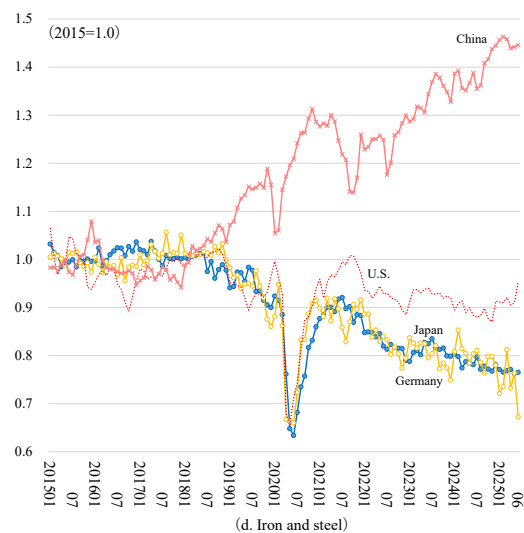
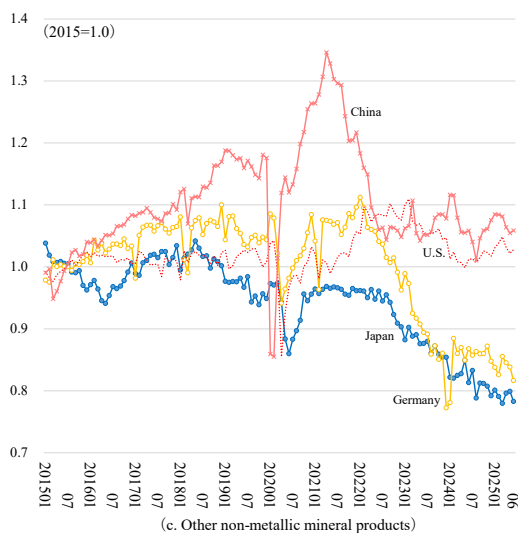
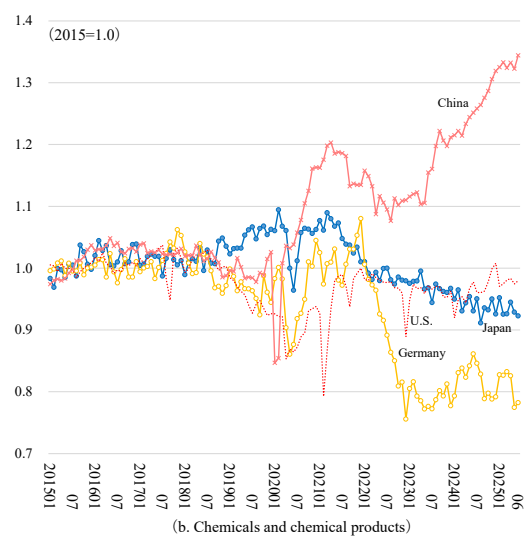
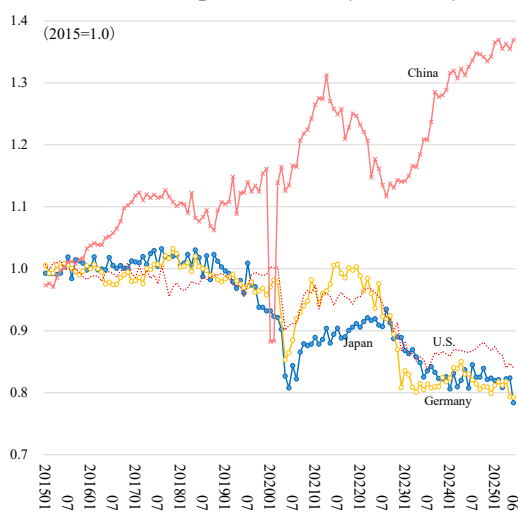
Unit: Index (output in January 2015=1.0). Period: January 2015– June 2025. Source: see section 4.1. Note: The industry contribution is based on the Translog index using the previous year's output value share.

4.3 EITE Output Indices by Country



Unit: Index (output in 2015=1.0). Period: January 2015– June 2025. Source: see section 4.1.

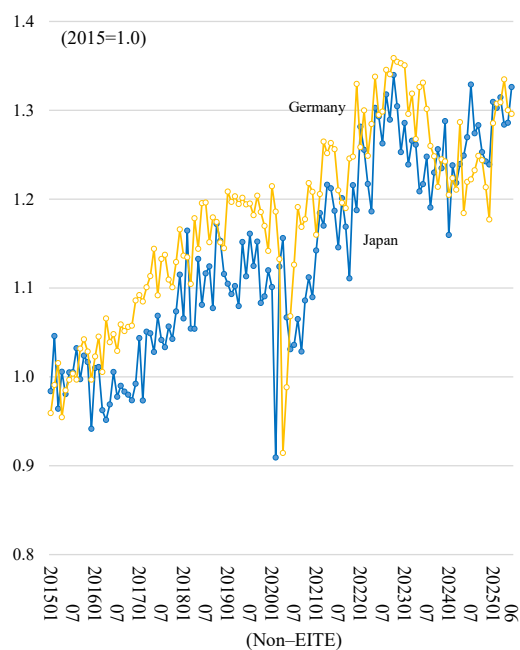
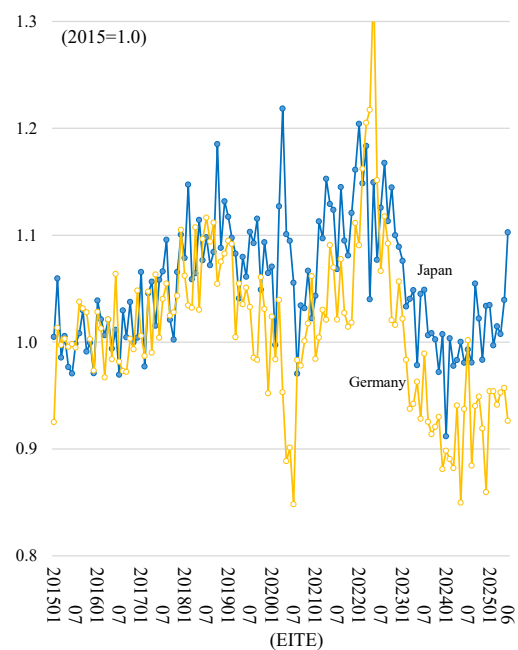
4.4 EITE Output Indices by Industry



Unit: Index (output in 2015=1.0). Period: January 2015– June 2025. Source: see section 4.1.

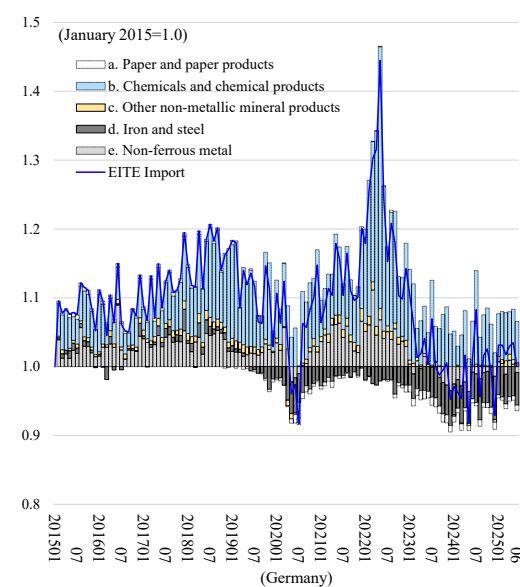
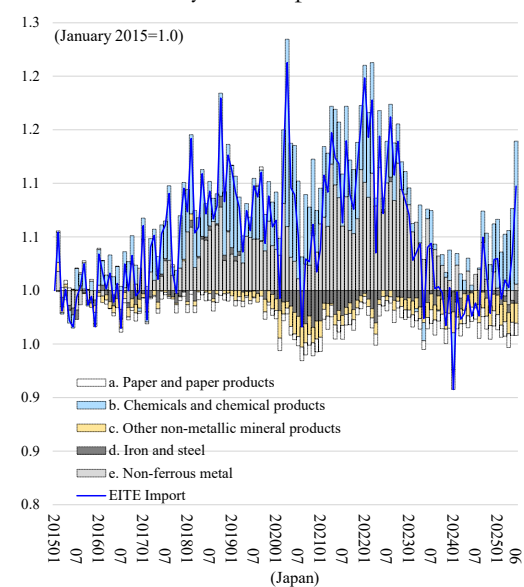
5 EITE Import Index

5.1 EITE Import



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

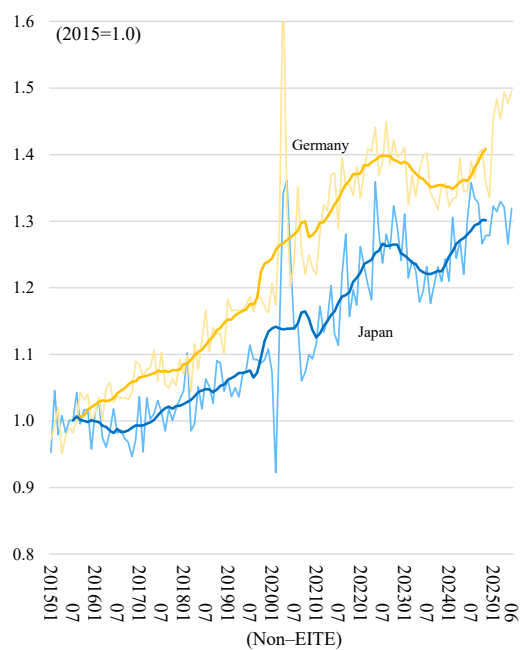
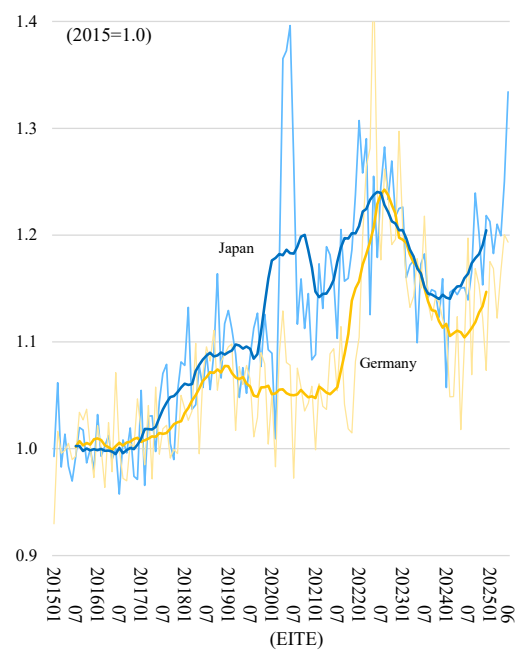
5.2 Industry Decomposition of EITE Import Index



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

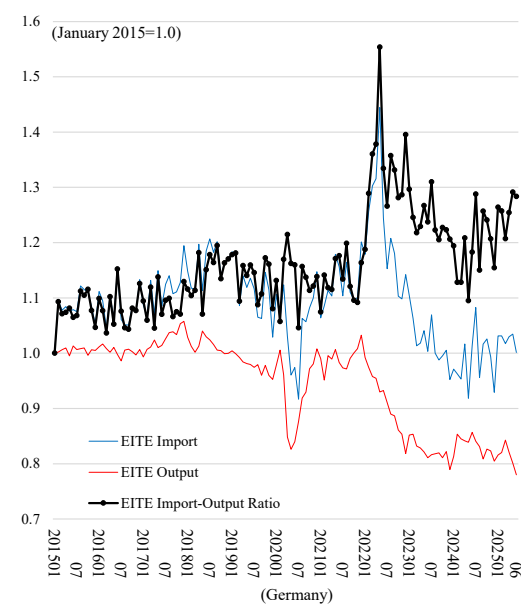
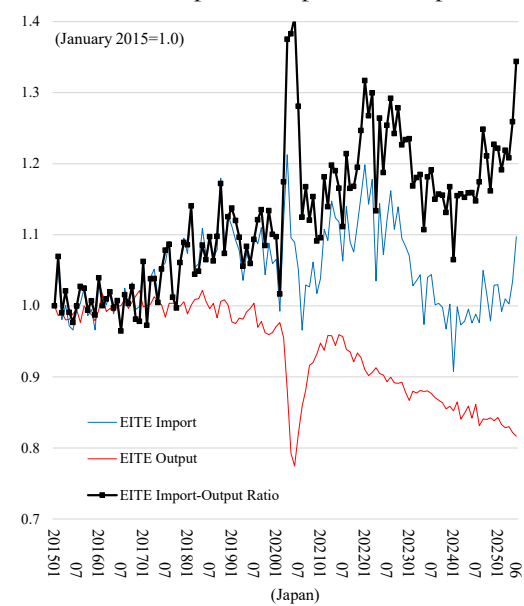
6 EITE Import–Output Ratio

6.1 EITE Import-Output Ratio



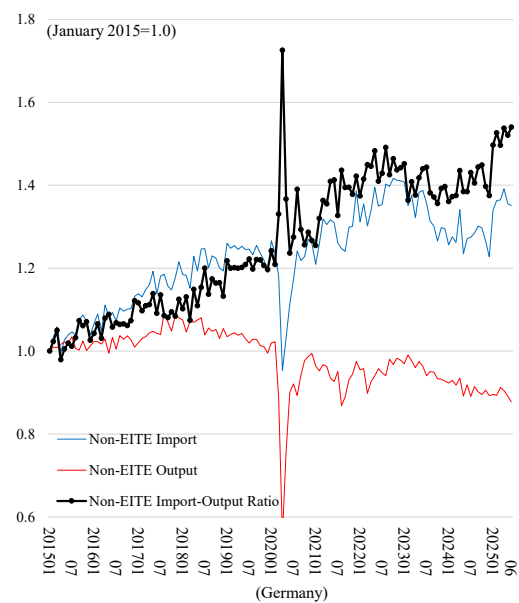
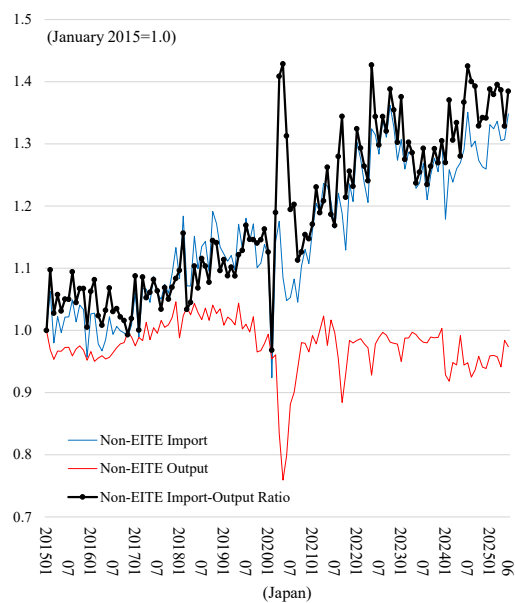
Unit: Index (import and output in January 2015=1.0). Period: January 2015– June 2025.

6.2 EITE Import, Output, and Import-Output Ratio



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

6.3 Non-EITE Import, Output, and Import-Output Ratio



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