China, Japan, and Asymmetric Economic Coexistence in Africa

Competition, Complementarity, and the Redistribution of Value Added

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MOTIVATION

At the border, China seems to be replacing Japan

CHINA'S EXPORTS TO 11 AFRICAN ECONOMIES

×42

US$1.8 bn in 1995 → US$77.1 bn in 2022

JAPAN'S EXPORTS TO THE SAME ECONOMIES

×1.3

US$4.2 bn in 1995 → US$5.7 bn in 2022

WHAT THIS SHOWS

Measured at customs, China's sales grew 42 times and Japan's only 1.3 times. It is easy to conclude that China is pushing Japan out of Africa. But customs data only tell us who ships a product. They do not tell us who created the value inside it.

Gross exports of goods and services, current US$. Source: OECD ICIO (2025 ed.), author's calculations

RESEARCH QUESTIONS

Three research questions

Q1	Does China's growth push Japan's direct exports down? HYPOTHESES: H1, H5, H6 EVIDENCE: Statistical tests (regressions)
Q2	How much Japanese value reaches Africa inside Chinese exports, and does it make up for Japan's losses? HYPOTHESES: H2, H3 EVIDENCE: Value-added accounting, 1995 to 2022
Q3	How much African value reaches Japan inside Chinese exports? HYPOTHESIS: H4 EVIDENCE: Value-added accounting and a panel test

H1 to H6 are the hypotheses of the paper; slide 14 brings the evidence together.

DATA AND METHOD

Follow each dollar back to where it was made

28	50	11	15,400
years, 1995 to 2022	industries	African economies	observations

How

- Map who buys from whom (OECD input-output tables, 2025 edition).
- Trace each export dollar back to the country where its value added (wages and profits) was created.
- Test the links statistically, market by market and industry by industry.

Keep in mind

- Kenya, Ethiopia, Zambia and Ghana are not separately available: results are not Africa-wide.
- “Japanese value” means produced in Japan. A Japanese-owned factory in China counts as Chinese.

Source: OECD ICIO tables, 2025 release. Methodology, data and sources in detail on the next slide.

DATA AND METHOD · IN DETAIL

Methodology, data and sources

SOURCES

MAIN SOURCE

OECD ICIO 2025: Regular and extended tables, 1995 to 2022.

VALIDATION

OECD TiVA: 308 benchmarks; largest gap US$0.001 m.

PRICES AND VOLUMES

OECD PYP tables: Previous-year prices; 2023 to 2024 projected.

COMPARISON ONLY

UNCTAD-Eora: Wider coverage; no African destination.

METHODOLOGY

Step 1 · Value-added accounting

$$L = (I - A)^{-1}$$

Leontief inverse: all inputs needed at every stage, for 4,150 country-industry positions.

$$H_{J,C,d} = s'_J \,\mathrm{diag}(v)\, L\, e_{C,d}$$

Japanese value inside China's exports to African market d (reversed: African value in China's exports to Japan).

$$F_{J,d} = F_{J|J} + F_{J|C} + F_{J|O}$$

All Japanese value used in Africa, split by final seller; adds up exactly.

Step 2 · Panel regressions

$$\ln(1 + Y_{dkt}) = \alpha_{dk} + \lambda_{dt} + \mu_{kt} + \beta \ln(1 + C_{dk,t-1}) + \gamma \ln(1 + R_{dkt}) + u_{dkt}$$

Y: Japanese outcome in African market d, industry k, year t. C: Chinese value added, previous year. R: imports from other suppliers. Fixed effects absorb market specialisation (α), national shocks (λ) and global industry cycles (μ).

Also PPML and growth versions; two-way clustered errors. Results are associations, not causal effects.

Sources: OECD ICIO 2025 release (retrieved 19 Oct. 2026), OECD TiVA, UNCTAD-Eora; paper, Sections 4, 5, 7.

QUESTION 1 · DOES CHINA PUSH JAPAN OUT?

No robust sign that China pushes Japan out

Levels: comparing markets

Japan's own exports: 0.109
All Japanese value: 0.103
Own exports (PPML): 0.193
Conclusion: All three are reliably positive.

Growth: year-to-year changes

Japan's own exports: –0.027
All Japanese value: –0.019
Japanese value via China: –0.073
Conclusion: Own and total value show no reliable effect.

Note on Robustness:

The positive levels result holds in all robustness checks (about 0.10) and after removing price changes; no industry shows a reliable negative link.
Driver: Chinese value in the same market, previous year.

Tables 9 to 12 and 14; range = coefficient ± 1.96 × SE

QUESTION 2 · HIDDEN JAPANESE VALUE

Japanese value travels to Africa inside Chinese exports, and it grew about 15 times

1995

US$56 m

↓

2022

US$844 m

Fact: This is real Japanese production income. Customs statistics record all of it as Chinese trade.

Breakdown by Sector & Destination:
Mainly in: electronics (US$244 m), machinery (US$131 m), electrical equipment (US$127 m).
Largest destinations: South Africa (US$263 m), Nigeria (US$233 m), Egypt (US$115 m).

Japanese basic-price value added in China's exports to 11 African economies, current US$, 2022

QUESTION 2 · HIDDEN JAPANESE VALUE · TABLE 6

A bigger cake, a thinner slice

Period	Total change	China sells more	Less Japan per dollar
1995 to 2022	+787.5	+1,580.4	−792.9
2003 to 2022	+602.0	+1,796.5	−1,194.5
2012 to 2022	+130.5	+500.2	−369.8

(US$ million, current prices. Exact split: total change = scale part + content part.)

1995 TO 2022, STEP BY STEP (US$ MILLION)

China sells more: +1,580
Less Japan per dollar: −793
Net change: +788

FINDING

The change in Japanese value via China has two exact parts: China sells more (the cake), and each Chinese dollar holds less Japanese value (the slice).

WHAT IT SHOWS

The Japanese share of China's exports fell from 3.10% (1995) to 1.09% (2022). In every period the cake effect wins: Japan's piece grew because China's exports grew, not because Japan's role in each export grew.

Midpoint decomposition (Equation 4 of the paper). The scale part includes price as well as quantity changes.

QUESTION 2 · DOES IT COMPENSATE JAPAN? · TABLE 7

The China route offset only 5.9% of Japan's loss

Year	Japan's final products	China's final products	Other sellers	Total	Japan share of imported value %
1995	2.367	0.031	2.017	4.415	5.94
2003	2.307	0.139	2.239	4.685	4.40
2012	4.910	0.415	4.863	10.189	3.19
2022	2.676	0.548	2.910	6.133	1.63
Change 2012 to 2022	**–2.23**	**+0.13**	**–1.95**	**–4.06**	**–1.56**

(US$ billion except the last column. "Other sellers" include the African economies themselves.)

HOW TO READ

Each dollar of Japanese value used in Africa is counted once, by who sold the final product. The three sellers add up to the total.

WHAT IT SHOWS

- 2012 to 2022: total Japanese value fell 39.8%.
- Japan's own final products lost 2.23; Chinese final products gained only 0.13, that is, **5.9% of the loss**.
- Japan's share of imported value fell from 5.94% to 1.63%.

Source: OECD ICIO (2025 ed., extended tables), author's calculations. Current US$

QUESTION 3 · THE REVERSE ROUTE

African value reaches Japan inside Chinese exports

1995 TO 2022

×26

From about US$39 million to US$1.003 billion of African value inside China's exports to Japan.

SIMPLE ROUTE, 2022

84.5%

follows a direct path: produced in Africa, processed in China, exported to Japan.

TWO INDUSTRIES, 2022

58.8%

comes from metal ores (US$300 m) and crude oil and gas (US$291 m).

WHAT IT SHOWS

Africa is connected to Japanese demand through China, mainly as a supplier of raw materials. The data cannot identify specific minerals (for example, cobalt) or the physical route of a shipment.

African-origin value added in China's exports to Japan, current US$. Source: OECD ICIO (2025 ed.)

QUESTION 3 · THE REVERSE ROUTE · TABLE 16

Three countries lead, as an extra channel

Who supplies it (2022)

African value in China's exports to Japan, US$ million

Angola: 330
DR Congo: 292
South Africa: 238
Nigeria: 49
Egypt: 44

Note: The top three supply 86% of the US$1,003 m total. For Angola and DR Congo, 95% follows the simple route: Africa → China → Japan.

Test Results

Levels: Coef. 0.097 | SE 0.113 | p 0.399
Growth: Coef. 0.054 | SE 0.115 | p 0.644

Driver: African value via China, previous year.
Outcome: Africa's direct value to Japan.
Origin-year and industry-year fixed effects.

DOES IT REPLACE DIRECT SALES TO JAPAN?

No. It neither replaces nor promotes Africa's direct sales. It is an extra channel. Both coefficients are small and far from reliable (p = 0.40 and 0.64).

Origin by industry panel, 11 African origins. Source: OECD ICIO (2025 ed.), author's calculations

Synthesis: Correcting the Geopolitical Narratives

Moving from simplistic bilateral scorecards to the realities of Global Value Chains

	The Prevailing Narrative	The Evidence-Based GVC Reality
Nature of Competition	Myth: China's rise is a zero-sum displacement of Japan.	**Reality**: Production is deeply interdependent. Regressions show no robust causal displacement.
Japan's Compensation	Myth: Supplying components to China perfectly offsets Japan's direct export losses.	**Reality**: Redistribution is highly incomplete. The China channel offsets only 5.9% of Japan's post-2012 decline.
African Role	Myth: Africa is a passive recipient of Asian manufactured goods.	**Reality**: Africa is an active upstream participant ($1B+ in value), though heavily restricted to raw extraction.

Implications for Policy and Geopolitical Perception

How triangular supply chains must reshape our understanding of Afrasian economic strategy

Track Production, Not Just Cargo Ships

Policymakers must look past the flag on the import declaration. Understanding local income generation requires tracking actual value-added production networks, not bilateral gross export rankings.

Acknowledge Japan's Real Contraction

While networks are intertwined and China is not the direct statistical "killer" of Japanese trade, Japan's total economic exposure to Africa has genuinely shrunk. The loss is real, even if the cause is complex.

Rethink Procurement and Investment

African development strategies must account for multi-country linkages. Procuring "Chinese" equipment often involves Japanese components and mainter.. Procuring "Chinese" equipment often involves components and maintenance networks—offering diverse opportunities for local supplier integration and capability building.

CONCLUSION

Answers to the three questions

Q1

China does not robustly push Japan out. Where China is bigger, Japan is also bigger.

Q2

Japanese value via China grew 15 times, but offset only 5.9% of Japan's loss after 2012 (current dollars).

Q3

African value reaches Japan through China (US$1.0 bn), mostly as oil and ores. For Africa, the key question is: which production stages stay at home?

Limits: 11 African economies only; industry averages, not firms or minerals; place of production, not ownership; associations, not proof of cause.

ADDENDUM · ACCOUNTING CHECKS & DATA VALIDATION

Transparency and dataset reconciliation

Table 1 Overview: The numbers add up

- Leontief equation error: 2.36e-15 (Negligible; practically zero).
- Final seller split: 0 gap (Adds up exactly across 11 countries and 28 years).
- TiVA Check (Japan in China’s exports): Within US$0.001 m.

What it shows: Every table was solved; calculation errors are practically zero. Results match official OECD TiVA figures.

Table 17 Overview: A check with UNCTAD-Eora data

- 1995 to 2015 Comparison: Eora values are 1.0 to 2.9 times larger across periods.
- Why: Data versions and tax treatments differ.

What it shows: Eora covers more African countries, but cannot show the specific African destination, so it cannot replace the OECD triangle methodology used in this investigation.

Public UNCTAD-Eora indicators and OECD ICIO basic-price value added. TiVA checks use its tax-inclusive convention; main results use basic prices.