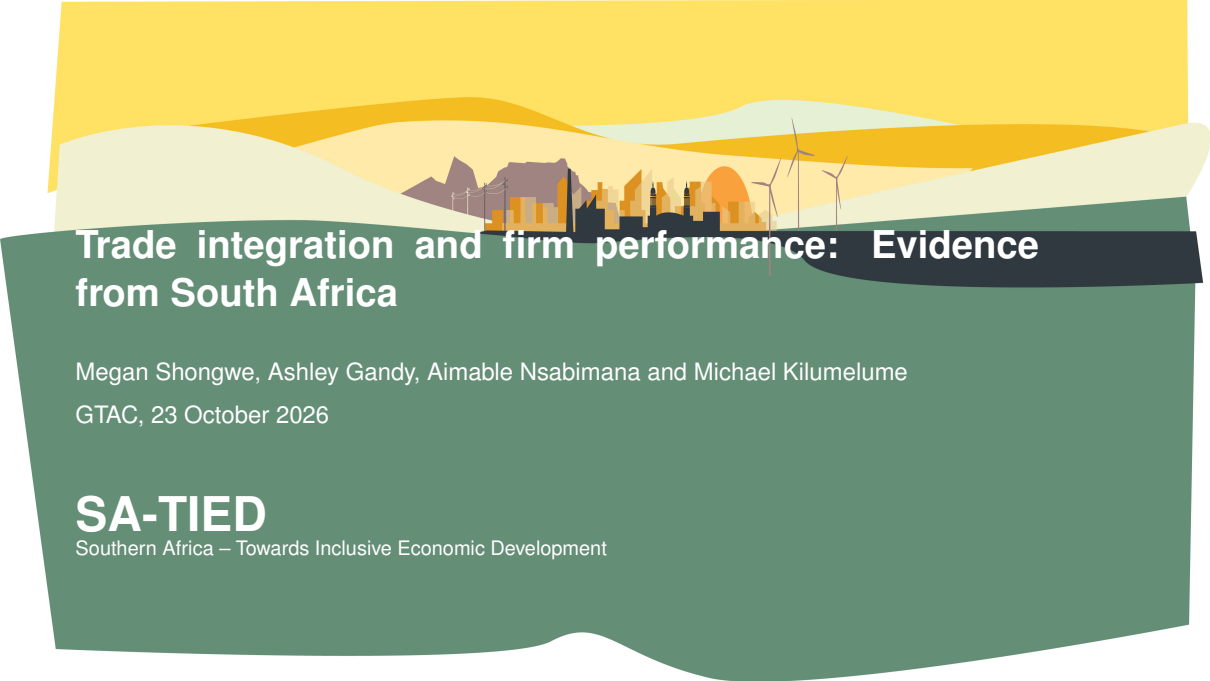




Trade integration and firm performance: Evidence from South Africa

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SA-TIED

Southern Africa – Towards Inclusive Economic Development

Motivation

China changed how Africa sources material for production.

- ▶ China has become a central hub in global value chains and restructured trade dynamics for emerging economies, particularly within Sub-Saharan Africa.
- ▶ The Strategic Trade Agreement was designed to move the relationship toward **"mutual benefit and common development"**.
- ▶ Our research examines the impact of the 2013 STA on the production frontier and labor market outcomes of South African firms.

Competing effects on employment

Substitution effect

Cheaper machinery can replace some labour tasks. Holding output constant, firms may use more imported capital and less labour.

Expected pressure

Lower labour demand and a higher capital-to-labour ratio.

Scale effect

Lower input costs reduce marginal costs. Firms can increase output, sales and value added, raising demand for labour across a larger operation.

Central question

Does firm expansion offset capital-labour substitution?

Main finding

The evidence is consistent with firms expanding without reducing employment.

- ▶ Firms increased their sourcing of Chinese capital goods after the 2013 agreement.
- ▶ Capital intensity rose, alongside positive movements in sales and value added.
- ▶ Employment remained stable and followed a modest upward trajectory.
- ▶ Wage effects were positive in direction but modest and imprecisely estimated.

Caveat: Possible pre-trends limit a strict causal interpretation.

The 2013 South Africa–China agreement

Policy setting

- ▶ Signed on 26 March 2013 during President Xi Jinping's visit to Pretoria.
- ▶ Covered trade, investment, energy, mining, finance, infrastructure and skills development.
- ▶ South Africa already imported substantial machinery and intermediate inputs from China.

Firm-level channels

- ▶ Development finance lowered capital constraints.
- ▶ Trade facilitation reduced sourcing and transaction costs.
- ▶ Investment and special economic zone cooperation strengthened supplier links.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Data

Linked administrative data, 2009–2019

- ▶ Customs declarations: HS6 product, value, volume and origin country.
- ▶ Corporate income tax: sales, intermediate costs, assets and value added.
- ▶ IRP5 payroll certificates: employment and wage bill.

Main outcomes

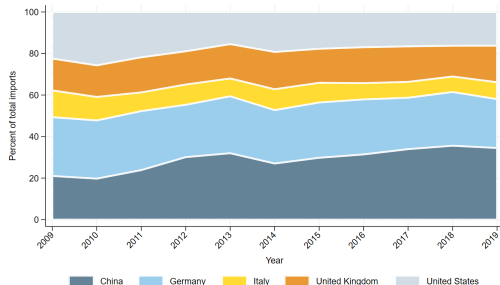
- ▶ Chinese import value
- ▶ Capital-to-labour ratio
- ▶ Sales and sales per worker
- ▶ Value added and value added per worker
- ▶ Employment and wages

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

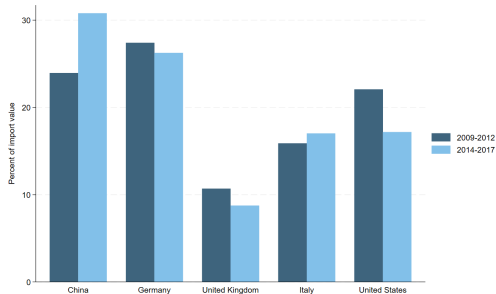
Sample and treatment definition

- ▶ The analysis focuses on machinery and mechanical appliances (HS 84) and construction materials (HS 68).
- ▶ SACU trade flows are excluded to reduce regional-integration confounding.
- ▶ Firms entering after 2013 are removed, creating a quasi-balanced sample of established firms.
- ▶ Treated firms imported from China for at least five years during 2009–2019.
- ▶ Control firms sourced comparable capital intermediates from the rest of the world.

South Africa's imports shifted toward China



Import shares among major partners, 2009–2019



Shares before and after the agreement

- ▶ China's role increased over the full period. Imports from China rose by roughly one-third in real terms between the selected pre- and post-agreement windows.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Estimation Strategy: Event-study design

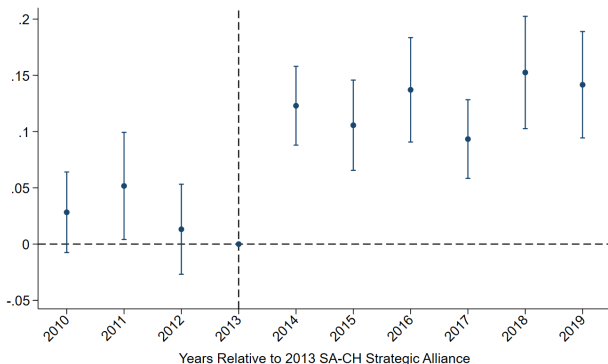
$$\ln Y_{ist} = \alpha_i + \delta_{st} + \phi_{pt} + X'_{ist}\gamma + \sum_{k \neq -1} \beta_k (\text{Treat}_i \times 1\{t - E_i = k\}) + \varepsilon_{ist}$$

- ▶ Firm fixed effects absorb time-invariant differences across firms.
- ▶ Industry-by-year and province-by-year effects absorb sectoral and regional shocks.
- ▶ Baseline size deciles interacted with year control for size-specific changes.
- ▶ Standard errors are clustered at the firm level. The omitted period is 2013.

Interpretation: Several pre-treatment estimates are imprecise, but possible differential trends mean the post-2013 patterns should be read cautiously.

Results

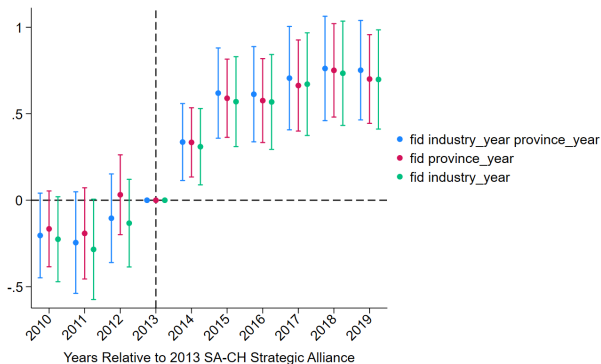
Chinese import values increased after 2013



- ▶ Import values rise sharply in the post-agreement period.
- ▶ The increase persists through 2019.
- ▶ A small pre-period movement calls for cautious causal language.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

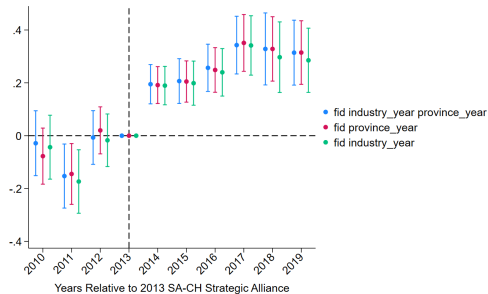
Firms became more capital-intensive



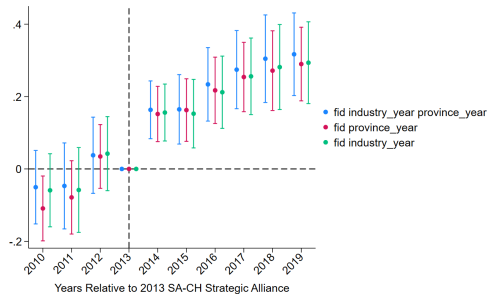
- ▶ The capital-to-labour ratio increases across all specifications.
- ▶ Estimates rise from about 0.35 in 2014 to above 0.65 in 2015.
- ▶ The effect remains elevated through 2019.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Sales and value added point to firm expansion



(a) Real sales

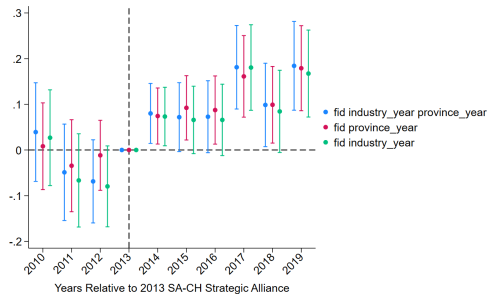


(b) Real value added

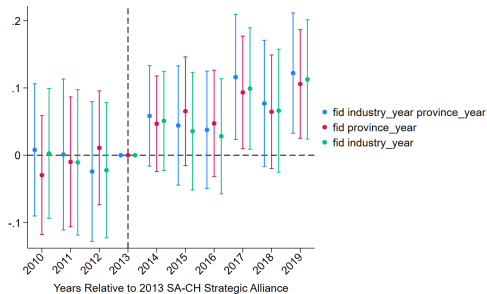
- ▶ Both outcomes move upward after 2013, consistent with a scale response to cheaper capital inputs.
- ▶ Confidence intervals and some pre-period volatility warrant a suggestive interpretation.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Per-worker gains emerge more gradually



(a) Sales per worker

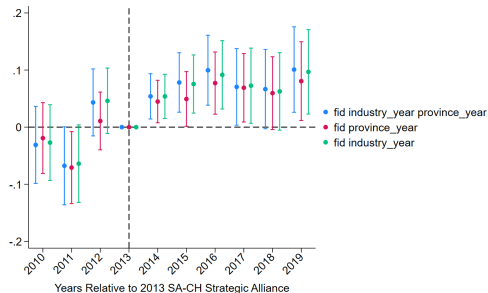


(b) Value added per worker

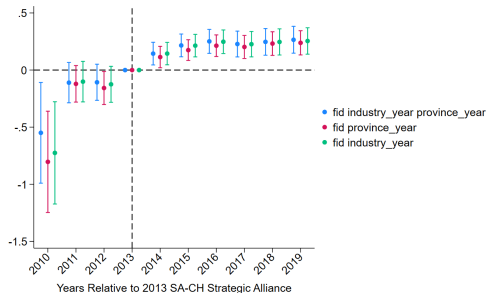
- ▶ Post-2013 estimates are generally positive, with stronger patterns later in the period.
- ▶ The timing is consistent with firms first expanding operations and realizing productivity gains as new capital is absorbed.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Capital deepening did not reduce employment



(a) Employment

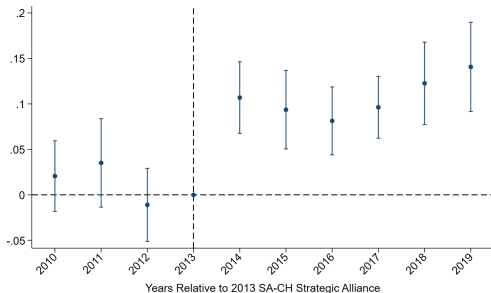


(b) Wage bill

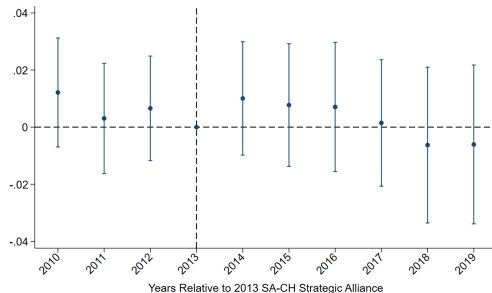
- ▶ Employment follows a positive post-2013 trajectory rather than declining.
- ▶ Wage estimates remain positive but modest, with wider uncertainty later in the period.

Source: Shongwe, Gandy, Nsabimana and Kilumelume (2026), WIDER Working Paper 2026/100.

Robustness checks support the main pattern



Balanced-panel estimate for Chinese imports



Randomized-treatment placebo

- ▶ A strictly balanced panel yields a similar post-2013 import response.
- ▶ Random treatment assignment produces coefficients near zero.

Source: Shongwe, Gandy, Nsabimana and Kilumelum (2026), WIDER Working Paper 2026/100.

What the evidence suggests

Production response

- ▶ Firms sourced more capital goods from China.
- ▶ Production became more capital-intensive.
- ▶ Sales and value added expanded.

Labour response

- ▶ Aggregate employment did not fall.
- ▶ Scale expansion appears to offset substitution.
- ▶ Wage gains were smaller than firm-performance gains.

The evidence fits the proposed mechanism, but the design cannot fully exclude pre-trends or spillovers to control firms.

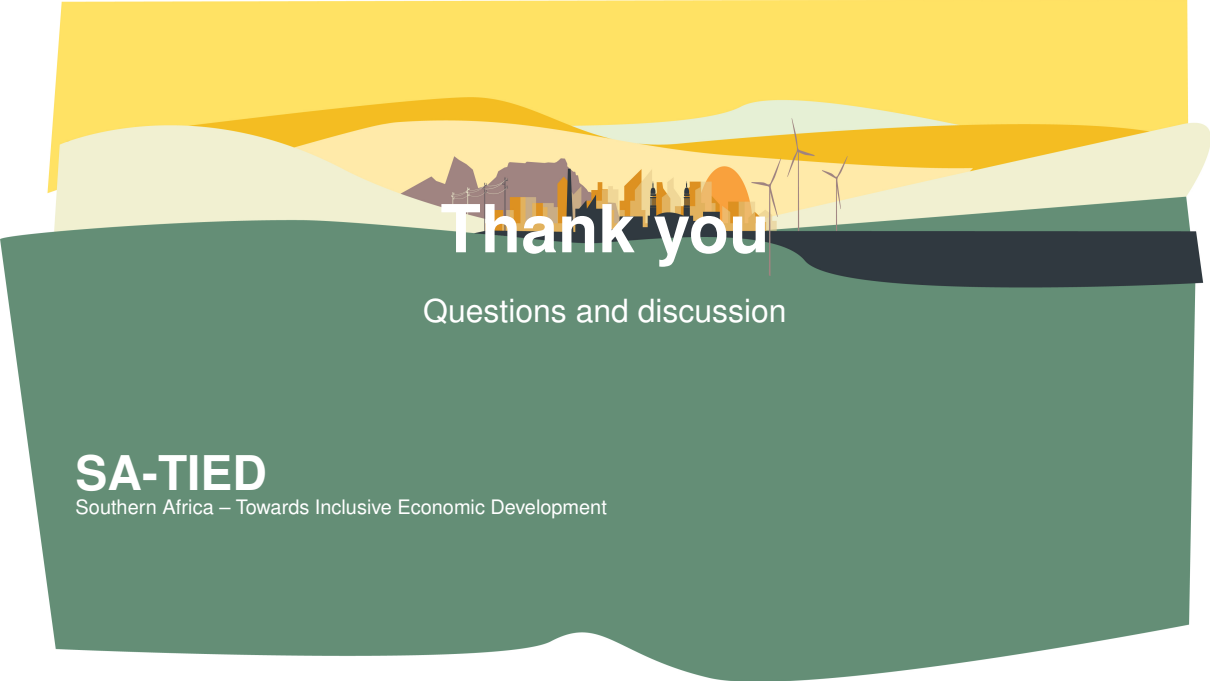
Policy implications

- ▶ Trade policy should distinguish competitive final-goods imports from complementary capital and intermediate inputs.
- ▶ Lowering the cost of productive inputs can support industrial expansion without necessarily reducing employment.
- ▶ AfCFTA and bilateral agreements can place greater emphasis on access to high-quality capital goods and supplier linkages.
- ▶ Wage gains may lag firm growth, so distributional outcomes require continued monitoring.
- ▶ Future work should test employment composition, skill demand and spillovers beyond directly exposed firms.

Conclusion

Strategic access to capital inputs can support firm growth without immediate job losses.

- ▶ The 2013 agreement coincided with deeper sourcing from China and sustained capital deepening.
- ▶ Firm-scale outcomes improved, particularly sales and value added.
- ▶ Employment remained stable, suggesting that expansion offset labour substitution.
- ▶ The findings remain suggestive because some pre-period patterns limit a strict causal interpretation.

A stylized landscape illustration with a yellow sky, rolling hills in shades of yellow and green, a city skyline in the center, and three wind turbines on the right. The foreground is a dark green field.

Thank you

Questions and discussion

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