

AusRIO: Australian regional exposure to United States import tariffs - A multi-regional input-output analysis

In recent years volatility in the trade policy of the United States Government has led to greater cause for the evaluation of the exposure of regions to trade disruptions. In 2026, the United States proposed a 10 then 15 per cent global tariff on imports to the country. These latest tariffs proceed other tariffs proposed throughout 2025 targeting perceived trade unfairness between the United States and its trading partners. The United States tariffs come at a time of rising geopolitical tensions and uncertainty which is reshaping national trading relationships and businesses look to derisk their supply-chains.

Input-output (I-O) derived models have been used extensively to examine the impact of trade shocks. Notable seminal examples in the literature include the “China Shock” by Autor et al (2016) which studies the impact of increased imports from China to the United States from a labour market perspective as domestic producers are outcompeted. The study notes that these impacts transmit to upstream industries via the inter-industry relationships to trade exposed industries a phenomenon further studied by Acemoglu et al., (2016). The studies report that the direct and indirect impacts of reduced demand after a trade shock can be severe particularly in geographies with large employment in the affected sectors. While this study considers the impact on a domestic economy of an influx of imports, this paper considers the impact on an exporting economy after a reduction in demand from an importing economy – the expectation being that the impacts will propagate through the exporting economy in much the same way.

A more recent example of using I-O analysis to consider the impacts of tariffs can be found in Lyons & Ma (2025) which evaluated the economic impact of the United States tariffs on automotive exports on the regional economy of the United Kingdom. The analysis found that the tariffs risked £9.8 billion in lost GDP between 2025 and 2030 of which 62% of the impact would fall in one English region, the West Midlands. The analysis reinforces the importance of regional industrial structure in exposure to trade shocks, it also underlines the importance of viewing trade shocks at the sub-national scale.

This paper investigates the exposure of Australian states and territories to United States import tariffs based on trade, price elasticities and supply chain data using a newly developed multi-regional input-output model for Australia, AusRIO. The United States is a relatively minor destination for Australian exported goods representing between 5-8% by value – despite this some states and sectors have much greater exposure where even minor shocks could have corrosive impacts on communities.

Method

This paper presents AusRIO a newly development multi-regional input-output model for Australia. The model is constructed through a cross-hauling adjusted regionalization method (CHARM) developed by Többen, and Kronenberg (2015). The approach regionalizes

the 2022-23 national input-output tables published by the Australian Bureau of Statistics to the state/territory scale using regional gross product, employment data. The AusRIO model covers 115 sectors and the 8 states and territories of Australia: Victoria, New South Wales, Australian Capital Territory, Northern Territory, Western Australia, South Australia and Tasmania. The paper details the methodological steps taken to construct the AusRIO MRIO system including the interstate trade linkages, household demand and incomes.

The model is then applied to examine the impact of a 15 per cent United States tariffs across two of the main export categories, Agriculture and Manufactured goods. This is achieved using trade data, price elasticity data and final demand shocks to the affected sectors and regions. The paper approach takes three steps: i) identification of state trade exposure through Department for Trade and Foreign Affairs data. ii) Export elasticities are applied to estimate the percentage reduction in export volumes resulting from the 15 per cent price increase. iii) A final demand shock is administered into the relevant sectors and geographies.

Initial Results

Preliminary findings on the impact of 15 per cent tariffs on Australian Agricultural exports find that the tariff shock generates an estimated \$2.3 billion reduction in national output and approximately 2,790 full-time equivalent (FTE) jobs lost across Australia. The impacts are unevenly distributed across states, reflecting differences in export composition and supply-chain exposure. Queensland experiences the largest output decline (approximately \$645 million and 770 FTE jobs), followed by Victoria (\$781 million and 950 FTE jobs), New South Wales (\$555 million and 610 FTE jobs), South Australia (\$205 million and 290 FTE jobs) and Western Australia (\$129 million and 160 FTE jobs).

The complete manuscript will detail the impacts of trade shocks on other affected sectors and contrast the differences on the regional economy. The agriculture sector will have a different price elasticity of demand to manufacturing sectors and will impact different states based on their economic structures. The full paper also details the induced (Type-II) impacts of the fall in sector/regional demand. Thereby showing the impact of falling household incomes and consumption, an extension of earlier work e.g. (Acemoglu et al., 2016).

Initial Reflections

Regional exposure to trade disruptions is becoming more frequent as rising geopolitical tensions become an emergent ‘megatrend’ facing the world economy. In a study of megatrends (slow moving long-term trends with the capability to significantly change society) Lyons et al., (2025) find that rising geopolitical tensions and related trade uncertainties are impacting how policy and business decision making at the regional scale. Regions have distinct industrial compositions and international trading relationships which are exposed to greater or lesser extents to regional trade disruptions depending on shock presented. Australia also represents an interesting case study as trade uncertainty amongst other international factors has led to a

significant rise in demand for gold as a safe haven asset. Western Australia is a significant exporter of gold and as such saw a nearly fourfold increase in exports by value between 2024 and 2025 from \$3.8bn to \$14bn more than offsetting the falls from other sectors.

The paper makes two key contributions. Firstly, a methodological contribution as it details the compilation of a new MRIO model for Australia, AusRIO. Secondly, it provides policy relevant empirical evidence of the exposure of Australian regions to a trade shock with the United States, a significant trading partner. It shows the importance of modelling regional trade exposure and raises questions about how state policy makers can respond to protect their industries from future trade shocks, whether or not the impacts of the 2026 United States tariffs come to pass.

References

- Acemoglu, D., Autor, D., Dorn, D., Hanson, G.H. and Price, B., 2016. Import competition and the great US employment sag of the 2000s. *Journal of Labor Economics*, 34(S1), pp.S141-S198.
- Autor, D.H., Dorn, D. and Hanson, G.H., 2016. The China shock: Learning from labor-market adjustment to large changes in trade. *Annual review of economics*, 8(1), pp.205-240.
- Lyons, M., Green, A. and Hoole, C., 2025. Megatrends and regions: a case study of the English Midlands. *Policy Studies*, pp.1-24.
- Lyons, M. and Ma, H., 2025. The US Tariffs on the Automotive Sector Will Cost the UK£ 10 Billion in GDP Over 5 Years. City-REDI, University of Birmingham blog series. Available at: [The US Tariffs on the Automotive Sector Will Cost the UK £10 Billion in GDP Over 5 Years – City-REDI Blog](#)
- Többen, J. and Kronenberg, T.H., 2015. Construction of multi-regional input–output tables using the charm method. *Economic systems research*, 27(4), pp.487-507.