



Australian Government
Productivity Commission

Trade policy impacts on Australia and the world – analysis

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Research & public policy questions

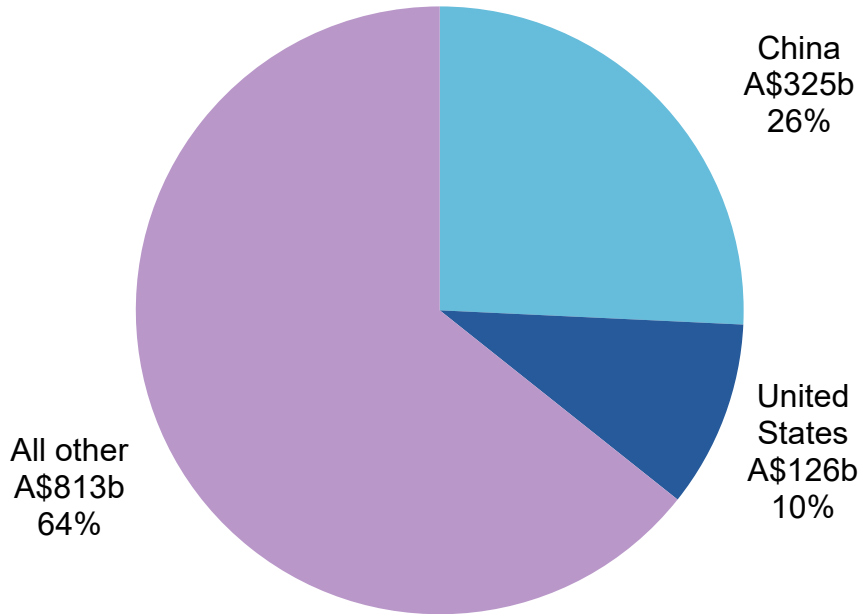
US trade policy implications for Australia

1. What are the potential implications of the recent US tariff announcements for Australia?
2. What are the key transmission mechanisms?
3. What are the implications if countries retaliate?
4. How do these implications vary depending on how Australia responds?

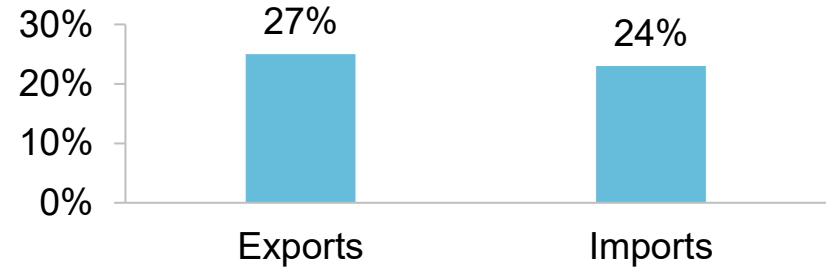


Australia is potentially vulnerable to a trade war

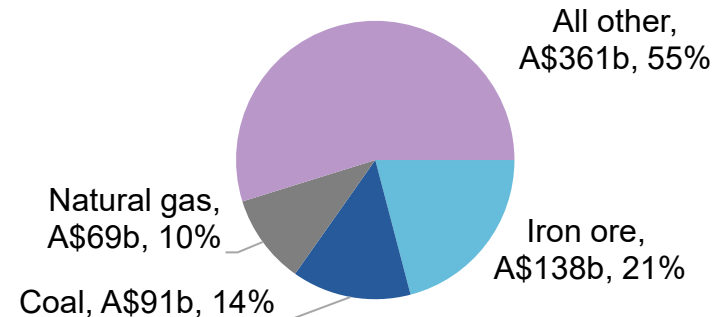
Australian two-way trade, 2023-24



Share of GDP, 2023-24



Australian exports, 2023-24



PC has a long history of modelling of tariffs & trade policy

- *Bilateral and Regional Trade Agreements* (PC 2010)
 - International (GTAP CGE model)
- ***Rising Protectionism (PC 2017a, 2017b)***
 - International (PC Global CGE model)
- *The Nuisance Cost of Tariffs* (PC 2022)
 - Focus on Australia (PC National CGE model)
- *Modelling Asian Trade Integration* (PC 2024)
 - International (PC Global CGE model)



New modelling – included in this year's TAR

- Modelled 3 tariff scenarios using PC Global CGE model
 1. **Universal 10** — US imposes an additional 10% tariff on goods imports from all countries (including Australia)
 2. **Liberation Day+** — US imposes a package of tariffs loosely based on 'Liberation Day', metals and automobiles tariffs
 3. **China 50** — US imposes higher tariffs on China (additional 50%)
- Considered each with & without in-kind retaliation
- Modelled different policy responses for Australia to scenario 1 when other economies retaliate



'Liberation Day+' scenario

Additional US tariffs of:

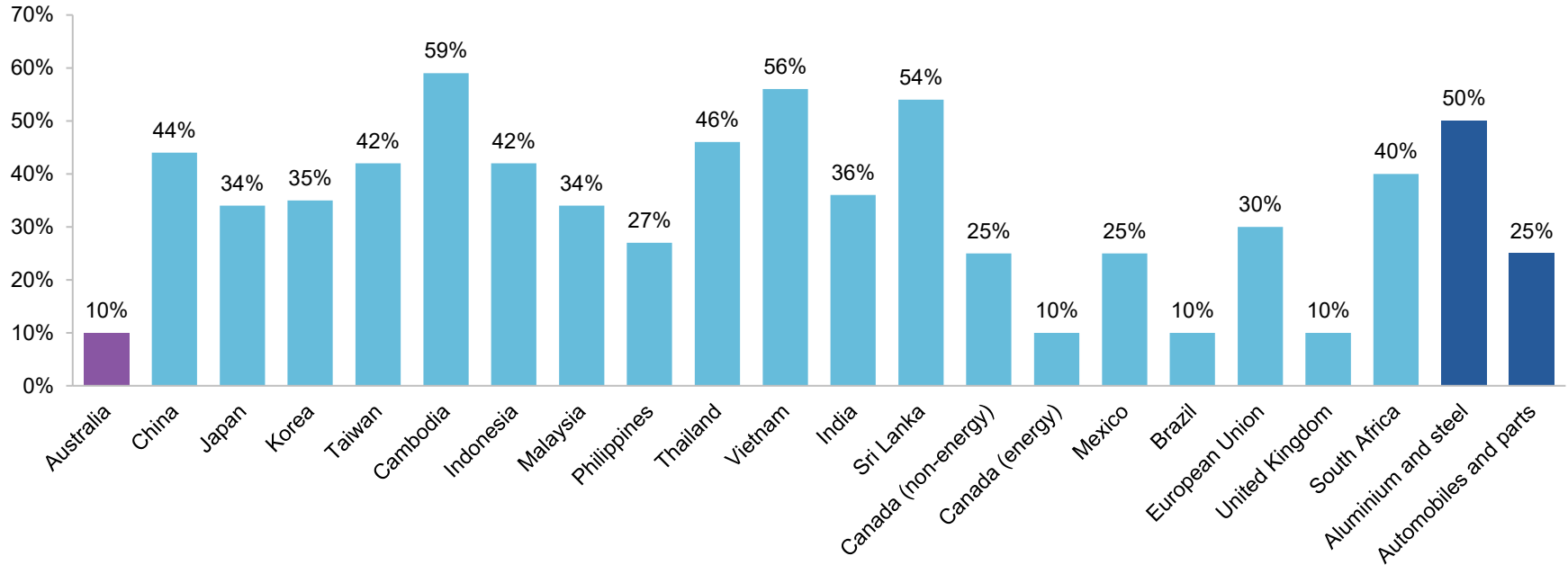
- 50% on **steel** and **aluminium** from all countries
- 25% on **automobiles** and **parts** from all countries
- 25% on all other goods imports from **Mexico**
- 10% on **energy** imports from **Canada** (coal, oil, gas, electricity and gas distribution)
- 25% on all **non-energy goods** imports from **Canada**
- 10% on imports from **all other countries** (including Australia)
- an additional **region-specific tariff** (levied on top of the additional 10%)

Country	Tariffs Changed in the U.S.A. (in blue)	U.S.A. Reciprocal Tariff (in yellow)
China	67%	34%
European Union	59%	26%
Vietnam	59%	46%
Taiwan	64%	32%
Japan	66%	24%
India	52%	26%
South Korea	50%	25%
Thailand	72%	36%
Indonesia	61%	31%
Indonesia	64%	32%
Malaysia	47%	24%
Camodia	97%	49%
United Kingdom	10%	10%
South Africa	60%	39%
Brazil	10%	10%
Rwanda	74%	37%
Guyana	10%	10%
Israel	33%	17%
Philippines	54%	17%
Chile	10%	10%
Australia	10%	10%
Pakistan	58%	29%
Turkey	10%	10%
Sri Lanka	88%	44%
Colombia	10%	10%

Country	Tariffs Changed in the U.S.A. (in blue)	U.S.A. Reciprocal Tariff (in yellow)
Peru	10%	10%
Nicaragua	56%	18%
Nicaragua	59%	15%
Costa Rica	17%	10%
Jordan	40%	20%
Dominican Republic	10%	10%
United Arab Emirates	10%	10%
New Zealand	20%	10%
Argentina	10%	10%
Uruguay	12%	10%
Guatemala	10%	10%
Honduras	10%	10%
Madagascar	93%	47%
Myanmar (Burma)	88%	44%
Togo	53%	26%
Kazakhstan	54%	27%
Senegal	74%	37%
Egypt	10%	10%
Saudi Arabia	10%	10%
El Salvador	10%	10%
Line of India	41%	21%
Lebanon	95%	48%
Burkina Faso	74%	37%
Trinidad and Tobago	12%	10%
Monaco	10%	10%

Liberation Day+ package

Additional tariff rate



PC Global model

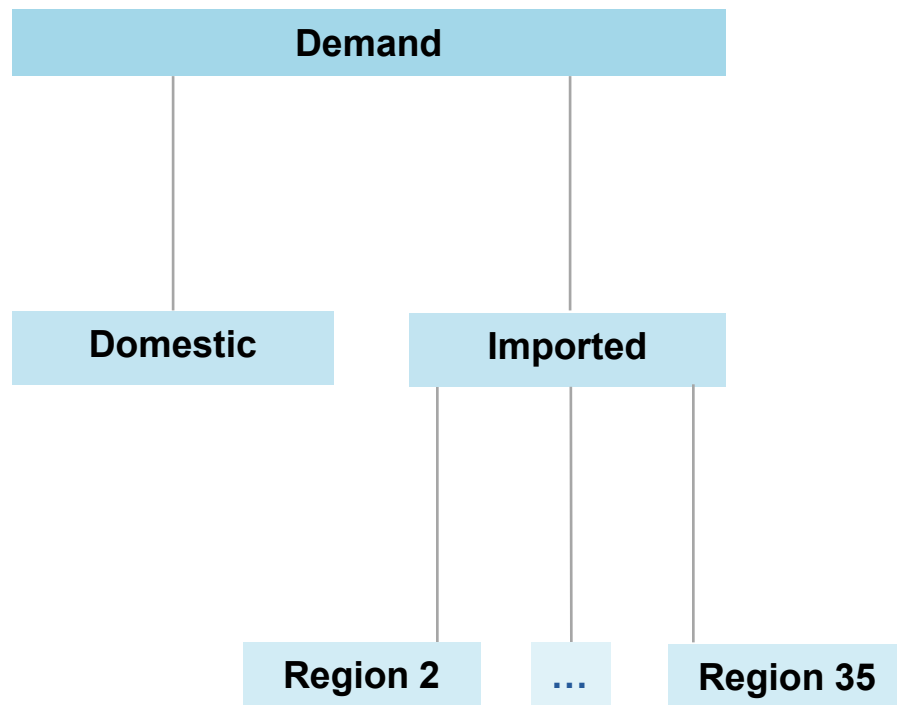
- Used to model similar policies in *Rising Protectionism* (PC 2017)
- Model of **global trade** & **production** (similar to GTAP)
- **Comparative-static** CGE model
- Database
 - **2017 reference year** based on **latest GTAP database** (version 11)
 - Additional capital & investment data added (based on IMF data)
 - **35 regions** (countries & country groupings)
 - **65 goods & services**
 - Includes RCEP, CPTPP (PC 2024) & corrected Australian tariff data
- **Four factors of production**: land, labour, capital & natural resources
- Model **solves** all equations **simultaneously**; no causality
- Documented (PC 2017a, 2024)



Some key aspects of the model structure for trade

- **Nested CES substitution (Armington) between**
 - Domestic & imported goods
 - Imports from different countries
 - Degree of substitutability varies by product
 - Imports more substitutable than domestic goods
 - Implies products from different sources are imperfect substitutes
- **Capital owned by domestic & foreign investors**
 - Entitles foreign investors to a share of production in each region
 - Varies by industry & region
 - Pay tax on that income in the country in which the income is earned
- **All other factors domestically owned**

Demand for traded goods



Demand based on:

- Real output (producers)
- Real expenditure (households)

Demand at each level based on:

- Demand from level above compared to weighted-average price
- CES substitution elasticity
- Relative price of good

The inclusion of international capital flows

- Means that effects on production in each region (real GDP) may differ from national income (real GNP) & the purchasing power of that income (real GNA) [Zhang 2019]
- International income, capital & investment flows & savings accounted for in the model's stylised balance of payments
- Export prices (& volumes) adjust to ensure external balance → no change in the BoP in each region
- Differentiates PC Global from many other international models
 - May lead to different impacts from models that assume capital fixed in each region



Modelling environment

- Model numeraire is the world investment price
- Long-run comparative-static model after the economies have adjusted to the policy shocks being examined
 - Aggregate supply of labour fixed in each region (wages adjust)
 - Capital & investment internationally mobile
 - Domestic & foreign investment shares adjust (affects allocation of capital income)
- Investors reallocate their capital across countries to equalise the percentage changes in their rates of return
- Regional savings rates held fixed



Some limitations of the modelling

Highly stylised

- Announced policies involve additional detail not considered here
- Abstracts from all other economic changes

Assumes international **capital highly mobile**

- But would not expect aggregate capital stocks in each region to remain fixed in the long run

Trade data in starting database **may not be contemporary**

- But uses latest GTAP data (2017); unable to update for 65 regions

It does

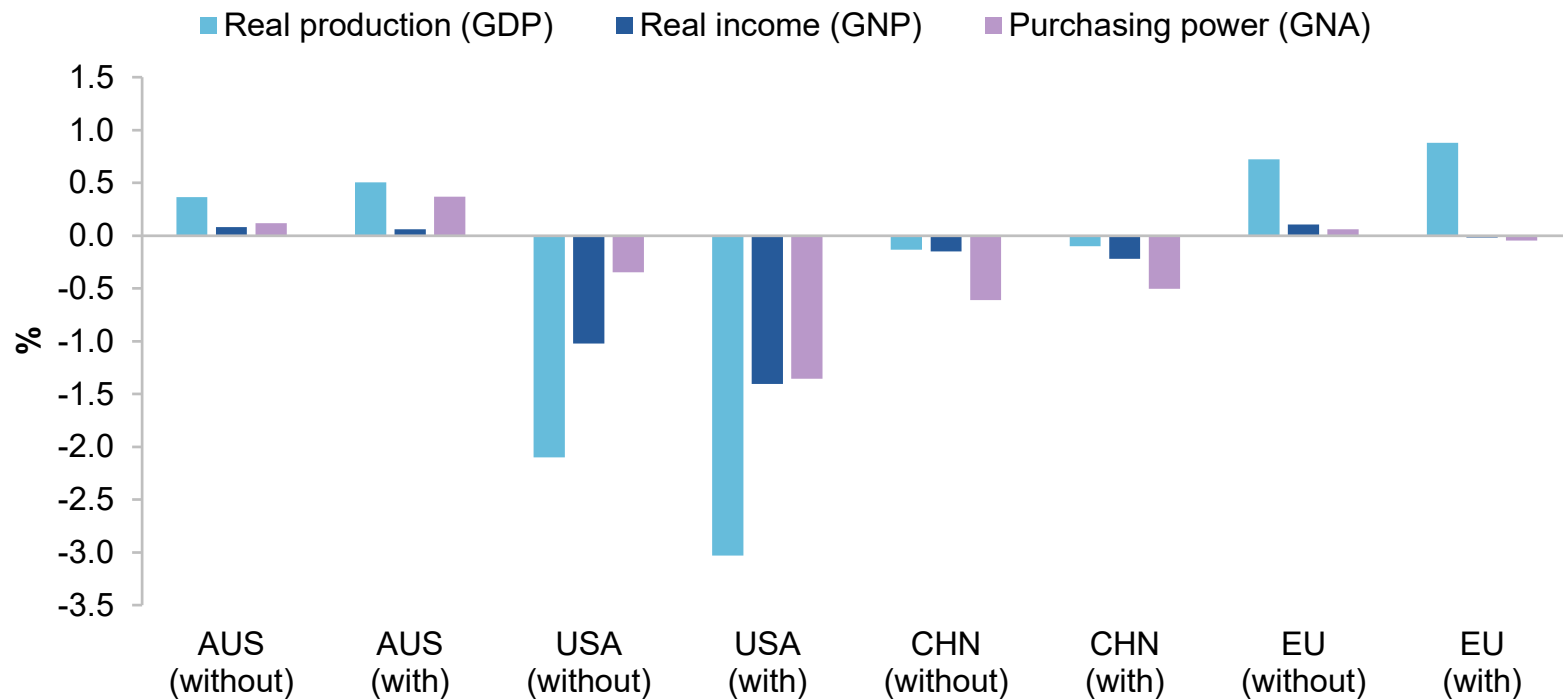
- ⊗ Not include **nominal exchange rate**
- ⊗ Not include **other adjustment mechanisms** (such as monetary policy responses)
- ⊗ Not incorporate **other policy considerations** (such as geopolitical considerations)
- ⊗ Not trace out **adjustment paths**

Key impacts on Australia

	Scenario 1				Scenario 2		Scenario 3	
	Universal 10% tariffs				Liberation Day+ tariffs		China 50% tariffs	
	US tariffs	Retaliation	Australia takes no action	Australia removes all tariffs	US tariffs	Retaliation	US tariffs	Retaliation
Real GDP	0.09	0.15	0.29	0.35	0.37	0.51	0.08	0.13
Real GNP	0.02	-0.00	0.06	0.08	0.08	0.06	0.02	0.03
Real GNA	-0.03	0.08	0.13	0.14	0.12	0.37	0.07	0.13
Real primary output	0.06	0.59	0.78	0.91	-0.26	1.08	-0.14	0.18
Real manufacturing output	-0.06	0.62	0.62	0.67	0.87	1.42	0.01	0.04
Real services output	0.12	0.10	0.22	0.29	0.34	0.38	0.10	0.12
Export volumes	0.07	-0.01	0.50	0.80	0.86	0.91	0.14	0.25
Import volumes	-0.31	0.09	0.51	0.75	0.47	1.50	0.25	0.50
Real domestic demand	0.10	0.24	0.30	0.34	0.26	0.52	0.06	0.10
Rate of return on capital	-0.72	-1.36	-1.29	-1.25	-1.60	-2.56	-0.15	-0.23
Real wages	0.10	-0.07	0.15	0.27	0.50	0.25	0.11	0.12
Capital stock	0.24	0.48	0.72	0.88	0.91	1.43	0.19	0.30
Terms of trade	-0.26	0.51	0.38	0.30	0.05	1.49	0.18	0.40
Real exchange rate	-0.45	0.85	0.71	0.63	-0.52	1.81	-0.01	0.32
Real wages: Deflated by the GDP deflator.								

Liberation Day+ package affects regions differently

Liberation Day+ with and without retaliation



Modelling results reflect many factors including ...

Negative impacts

- Tariffs ↑ price of Australian exports → ↓ US consumption → ↓ **exports**
- Tariffs ↑ price of US exports → ↑ **prices** for Australian consumers
- Adverse effects on China → ↓ **exports**
- ↓ import prices → Australian consumers to ↓ **demand for locally produced goods** & ↑ **imports**

Positive impacts

- ↓ price of Australian imports relative to most countries → ↑ US consumption → ↑ **exports**
- China needs new markets for goods previously exported to US → ↓ Chinese export prices → ↓ **import prices**
- Primarily impacts on **export values** (through prices) rather than export volumes

... and ...

Negative impacts

- ↓ production in US & China →
↓ rates of return on capital →
↓ income on Australian investments
in US & China → ↓ **capital income**
flowing into Australia
- ↑ foreign investment in Australia →
foreign investors entitled to ↑ share
of capital income produced in
Australia → ↑ **outflow of capital
income from Australia**
- Capital inflow → ↓ Australian rental
price of capital → ↓ **capital &
household income**

Positive impacts

- Australia needs to ↑ **exports** to
fund additional imports
- ↓ capital income in US & China →
capital **outflow** from US & China
→ capital **inflow** into Australia (&
RoW) → ↑ Australian (& RoW)
production
- Growth in rest of world →
↑ **Australia exports**
- ↑ Australian production →
↑ **wages** → ↑ household income

These effects mean that current tariff changes may only have a small (and positive) impact on Australia

- Studies with fixed aggregate capital stocks typically find a **small negative effect** on Australian production
- Capital stocks **expected to vary** in the long run
- Capital outflow from US & targeted countries → ↑ **supply of capital** available to other countries
- Access to this additional capital may enable ↑ **production** in other countries
- ↑ access to capital explains the small but **positive** ↑ for Australia

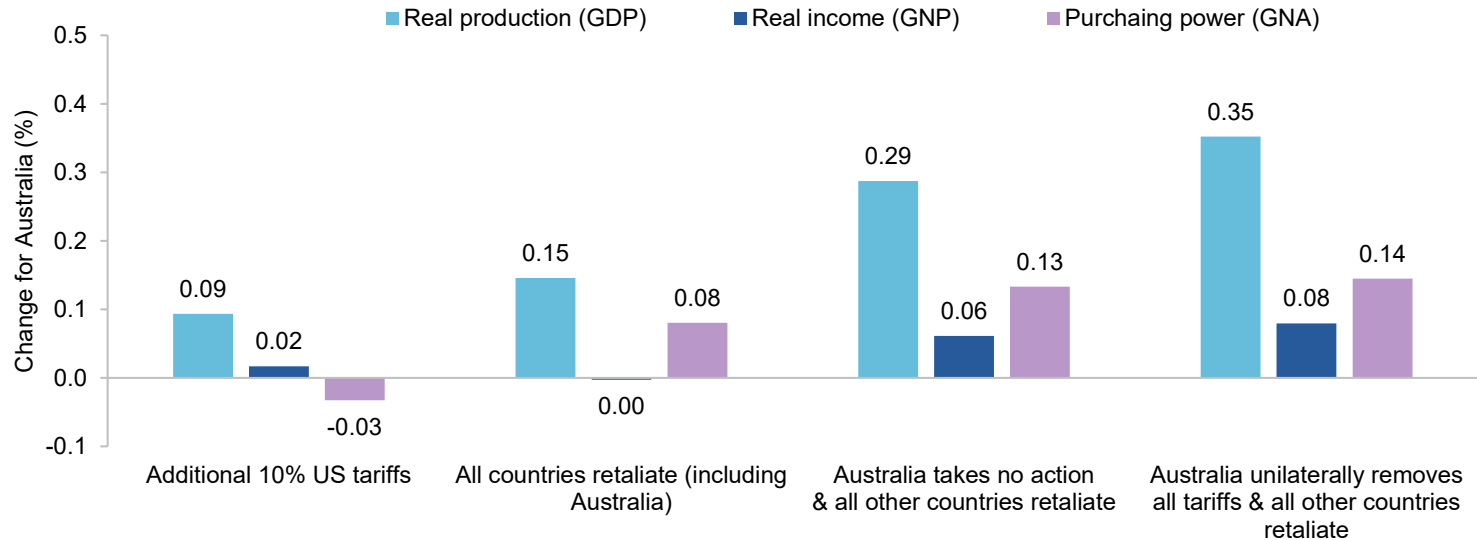


Australia limited in what it can do

- Difficult to influence tariffs being imposed by the US
- Difficult to influence how other countries respond
- Australia will incur the effects of these regardless
- Considered three possible policy responses to the universal tariff scenario (Universal 10%)
 - Australia retaliates in the same manner as the rest of world
 - Australia does nothing but the rest of world retaliates
 - Australia unilaterally removes all remaining tariffs & the rest of world retaliates



Australia would be better off not retaliating



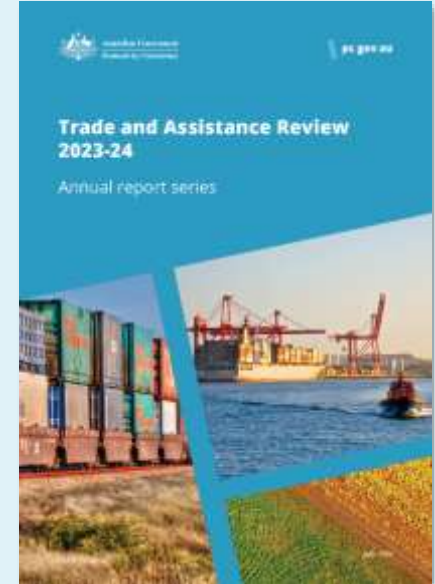
Modelling released

Released as part of *Trade and Assistance Review 2025*

www.pc.gov.au/ongoing/trade-assistance

The PC concluded that:

Australia should continue to advocate for the rules based international trading system that has underpinned our post war prosperity and seek out likeminded countries receptive to the benefits of freer international trade to progress this as far as possible among themselves.





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