

THE FUTURE OF ADVANCED MANUFACTURING



THE FUTURE OF ADVANCED MANUFACTURING - Innovative technology for sustainable manufacturing in Australia



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An aerial photograph of the Volvo Wacol plant in Brisbane, Australia. The image shows a large industrial complex with several large, white, multi-story buildings. The foreground is dominated by a vast parking lot filled with numerous white trucks and blue forklifts, organized in neat rows. To the left, there are stacks of materials and more vehicles. The plant is surrounded by lush green trees and vegetation, with a road and other industrial buildings visible in the background under a clear sky.

Volvo Wacol plant, Brisbane

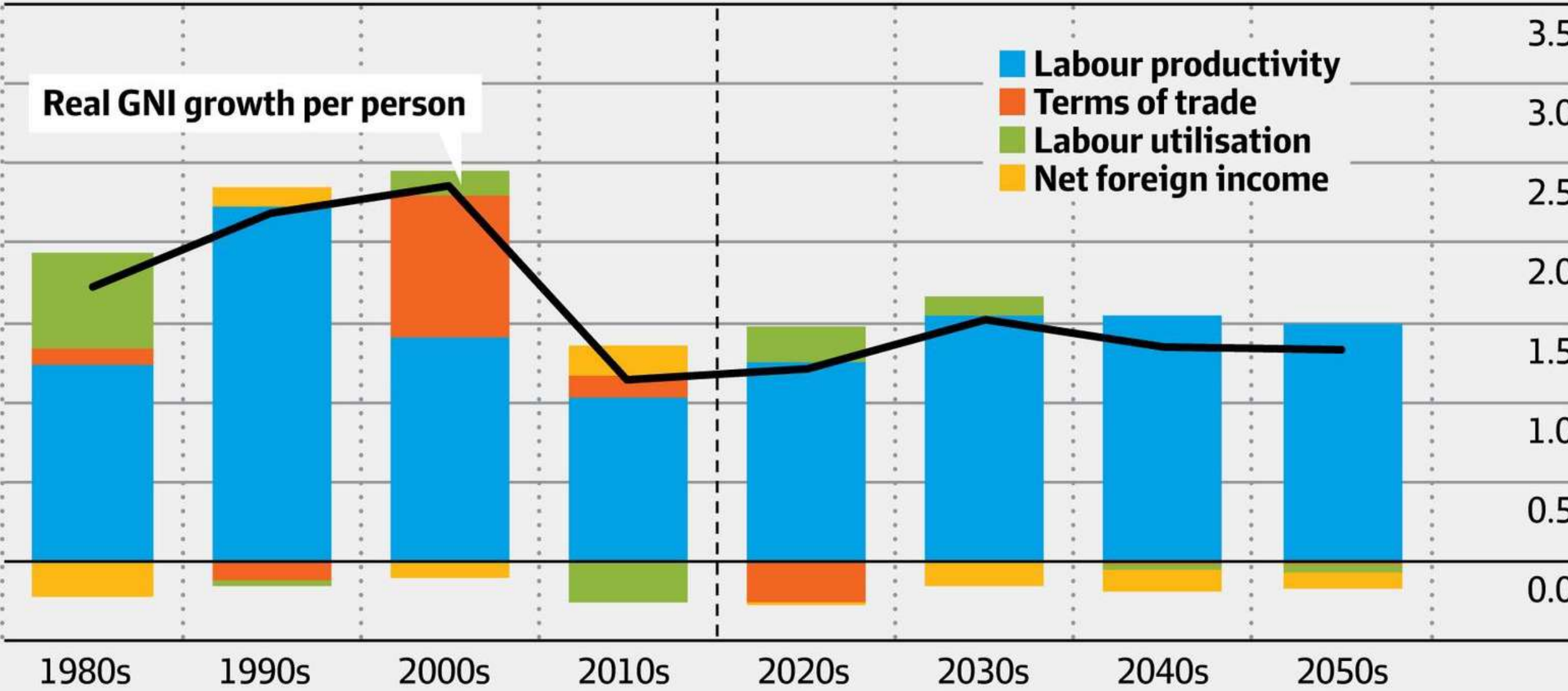
Challenges

- Productivity & wage stagnation
- Rising social inequality
- Climate change

Why manufacturing?

1. Over 70 per cent of world trade
 - Manufacturing is highest value component of trade
2. Drives innovation & productivity
 - Manufacturing contributes largest share of R&D
3. Creates high skill, high wage jobs
 - Manufacturing creates services jobs as well as production
4. Enables energy transition
 - Manufacturing is key to renewable technologies & infrastructure
5. Preparing for circular economy
 - Future manufacturing will be zero emissions, zero waste

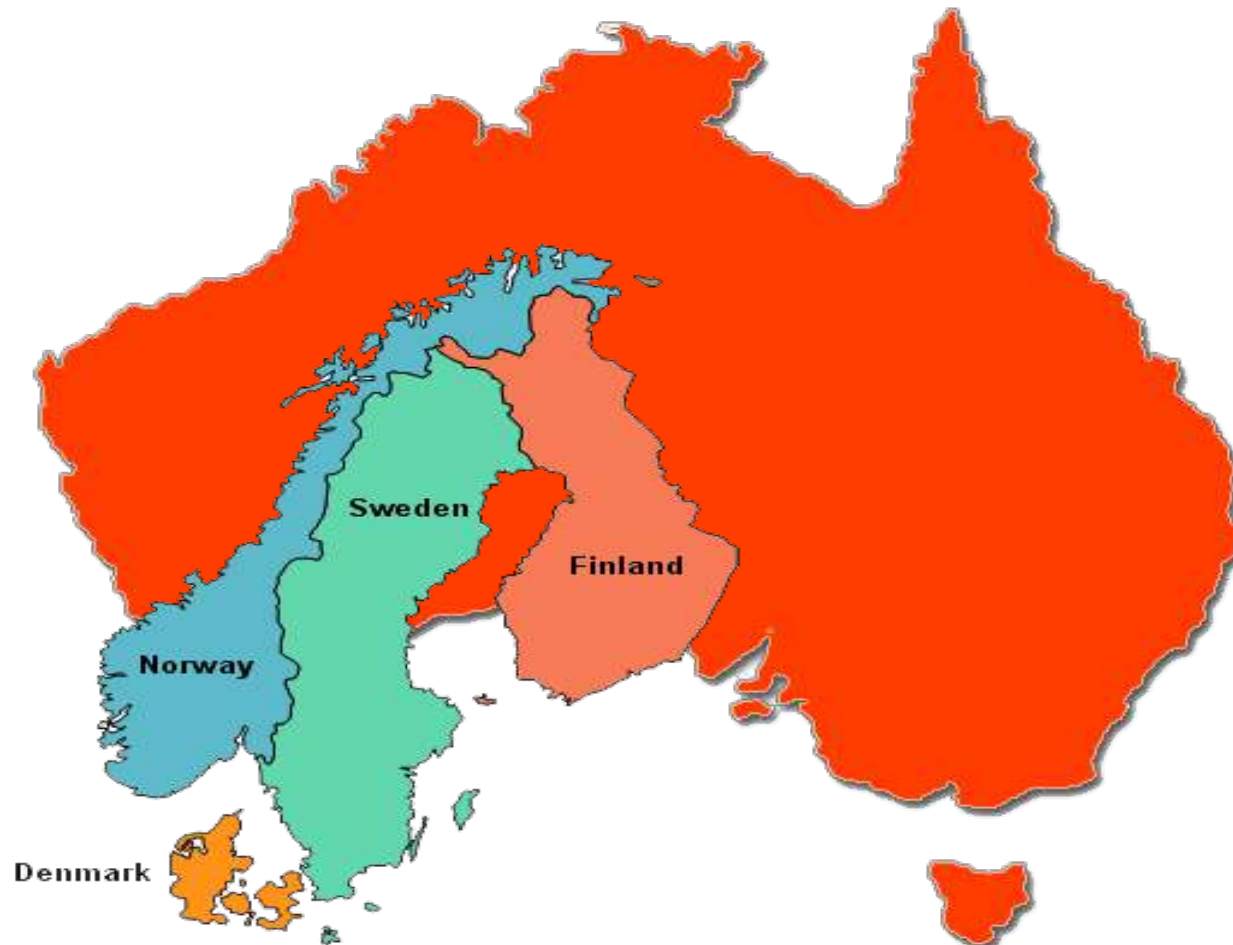
Contribution to gross national income per capita (ppt)



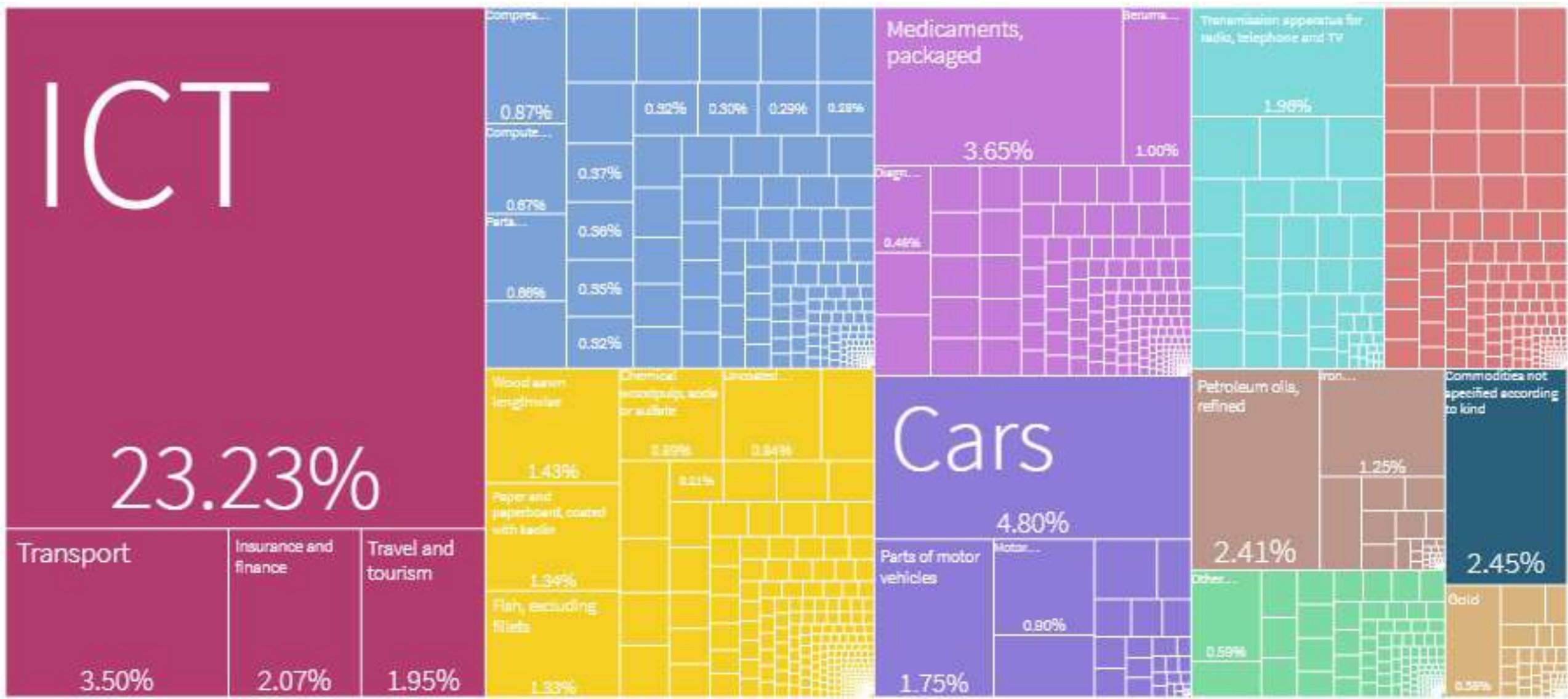
SOURCE: DEPARTMENT OF TREASURY

	Population	Manufacturing*
Scandinavia	25 million	5 companies
Australia	25 million	0 companies

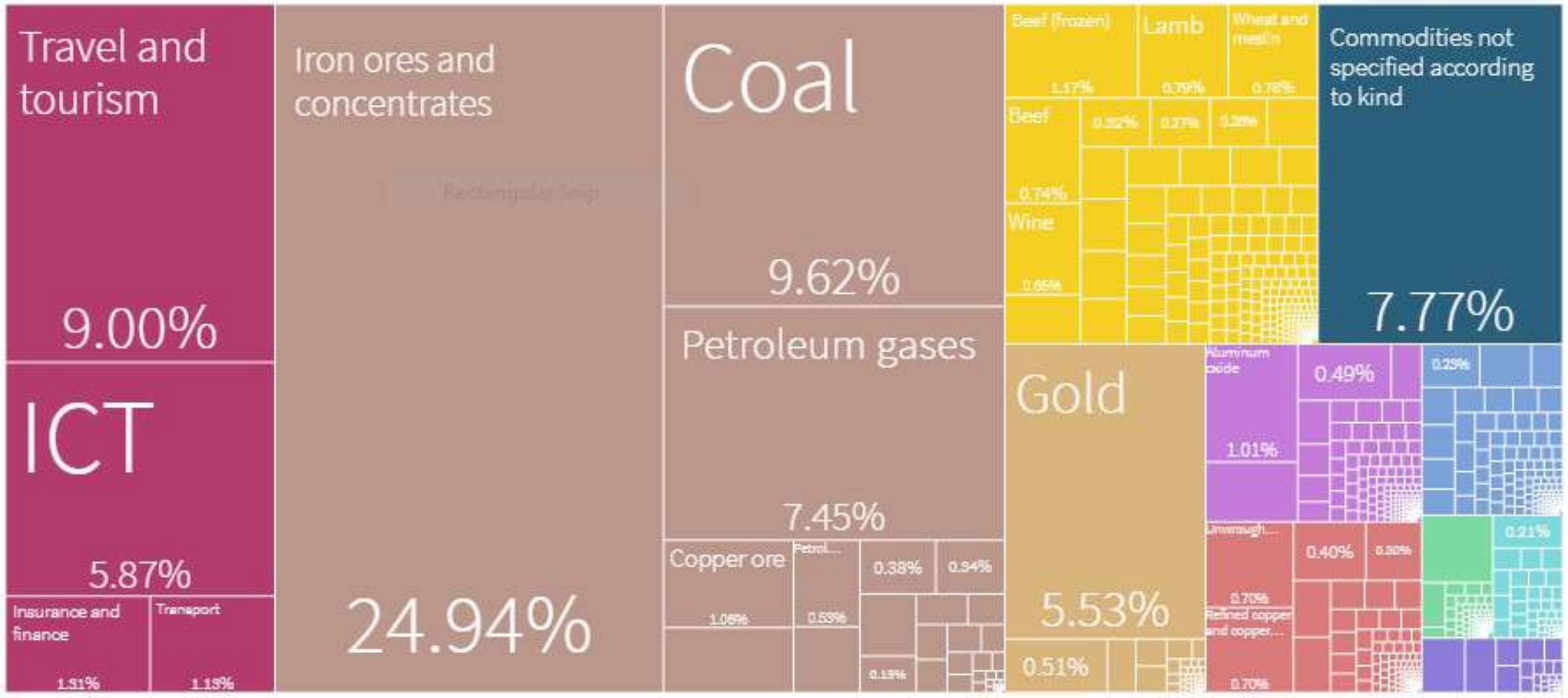
Manufacturing
companies in
the Fortune
Global 500



Economic complexity - Sweden #8

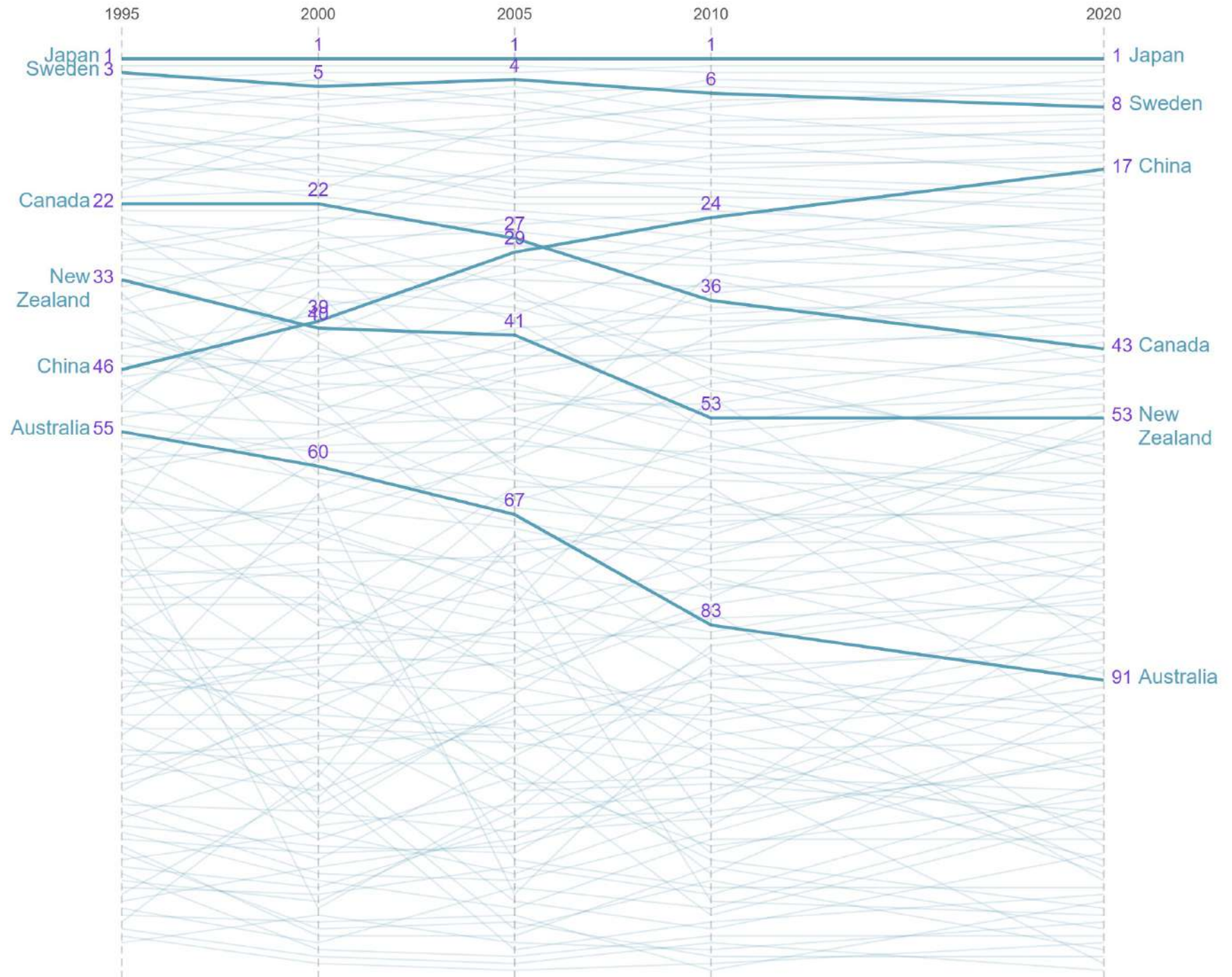


Economic complexity - Australia #91



Complexity comparisons

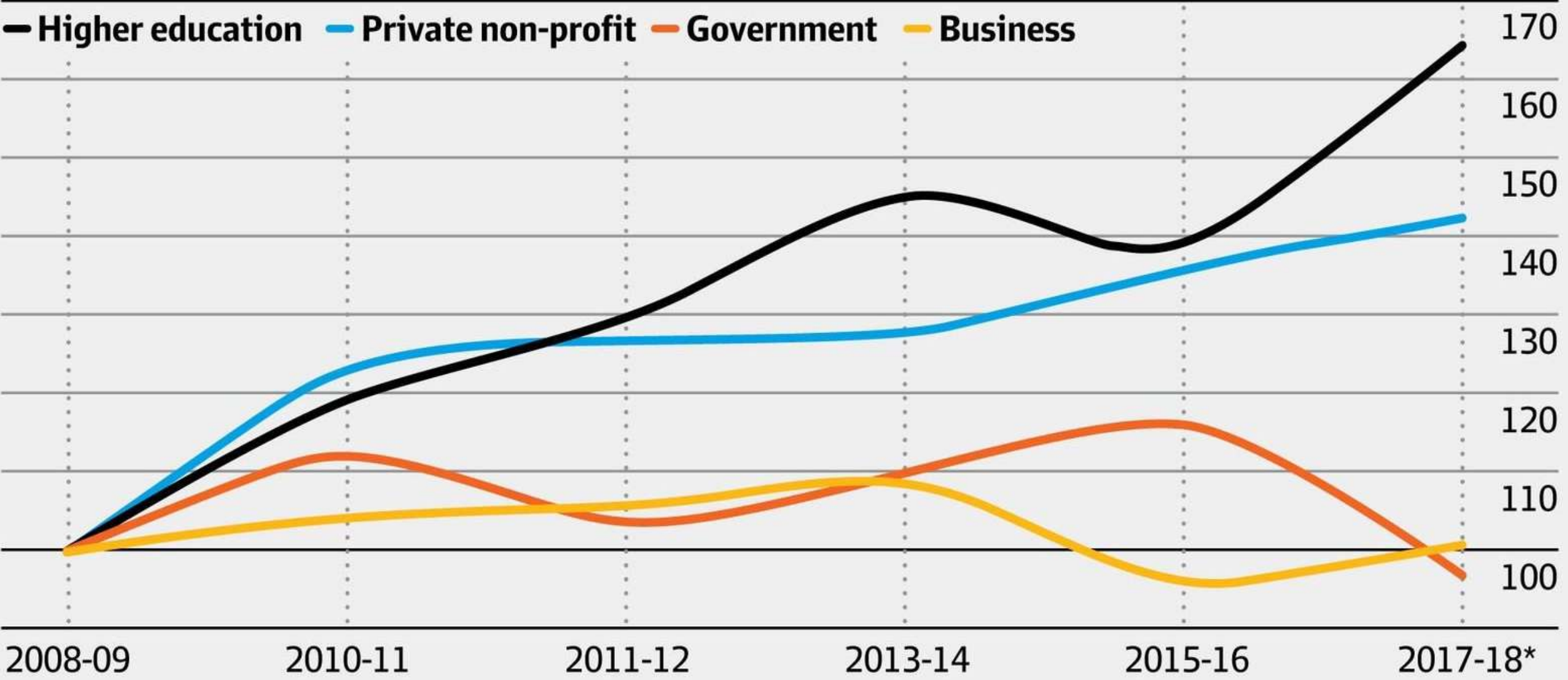
Japan
Sweden
China
Canada
New Zealand
Australia



Australian manufacturing?

- Australian manufacturing has declined to 6 per cent of GDP, and has lowest self-sufficiency ratio among OECD countries
- Manufacturing trade deficit has doubled to \$180bn over the last two decades, particularly in high value products
- Manufacturing still accounts for a quarter of Australia's R&D spending but has stalled along with government spending

Gross expenditure on research and development, growth index (points)



*Latest data available

SOURCE: ABS

Poly architecture

1. National missions / coordination
2. Public research & technology programs
3. Industry-led research collaboration
4. Innovation precincts / place-making
5. Skills & enterprise capability-building