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Infrastructure investment and productivity growth

Presentation to the annual Tasmanian Economic Forum

Hosted by the Economics Society of Australia (Tasmania Branch)

Hobart
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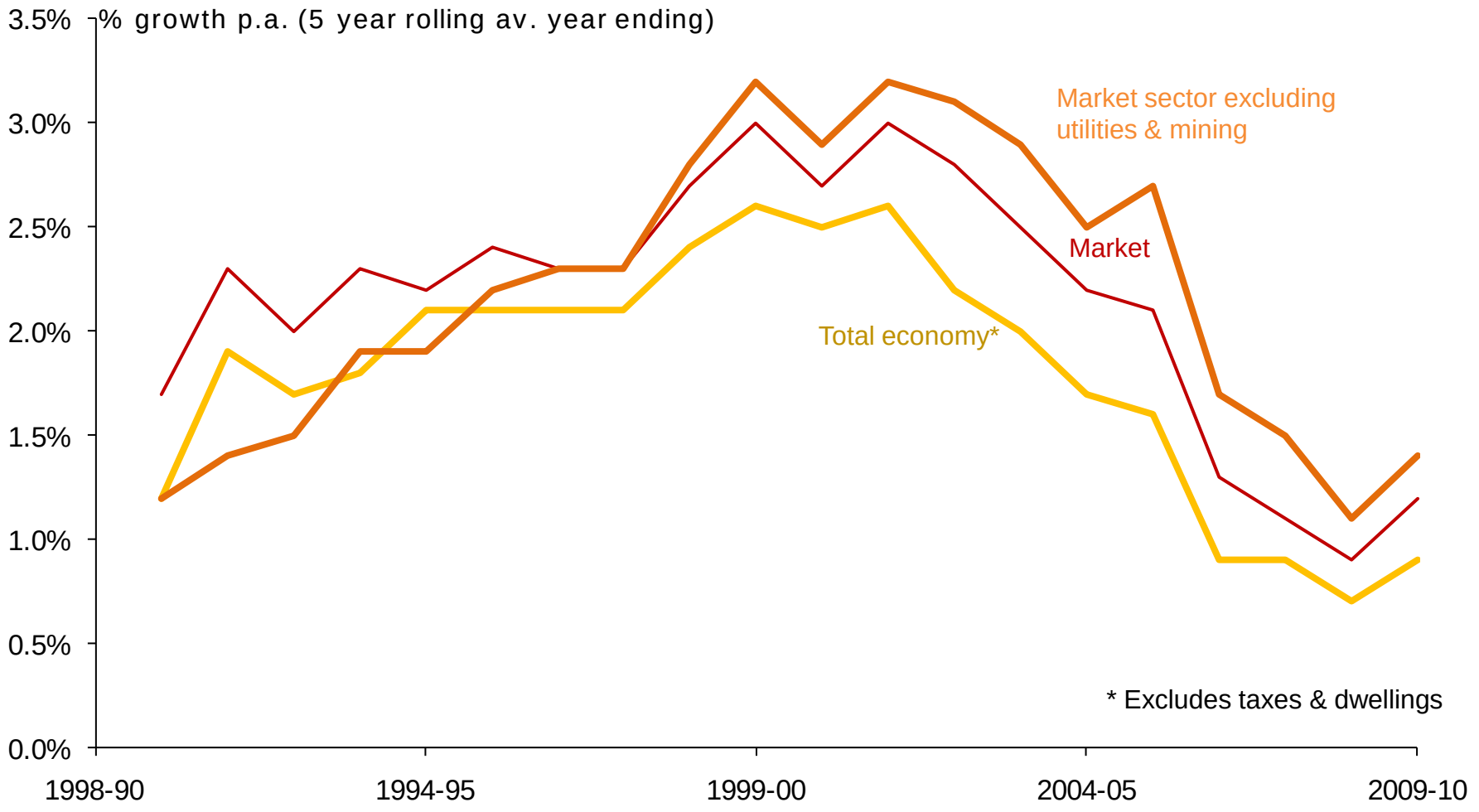
Australia's productivity performance has deteriorated markedly over the past decade

Labour productivity



Sources: Australian Bureau of Statistics and Grattan

Infrastructure spending is widely seen as part of the 'solution' to reversing the slide in productivity growth

"Australia faces a shortfall in infrastructure, which could worsen with the demand pressures exerted by the mining boom, population growth and environmental concerns. To respond to this demand and avoid bottlenecks, the authorities have put bolstering infrastructure at the top of their policy agenda."

- OECD Survey of Australia

"Our historic investments in nation-building infrastructure are building productivity and capacity as our economy comes up against the challenges of commodity boom mark II."

- Hon. Wayne Swan MP, Treasurer

Sources: OECD, *Economic Survey of Australia 2010;* Hon. Wayne Swan MP, *Treasurer's Economic Note* No. 032 (October 10, 2010)

It’s easy to make a case for additional infrastructure spending

Engineers Australia Report Card shows Australian infrastructure in a poor light

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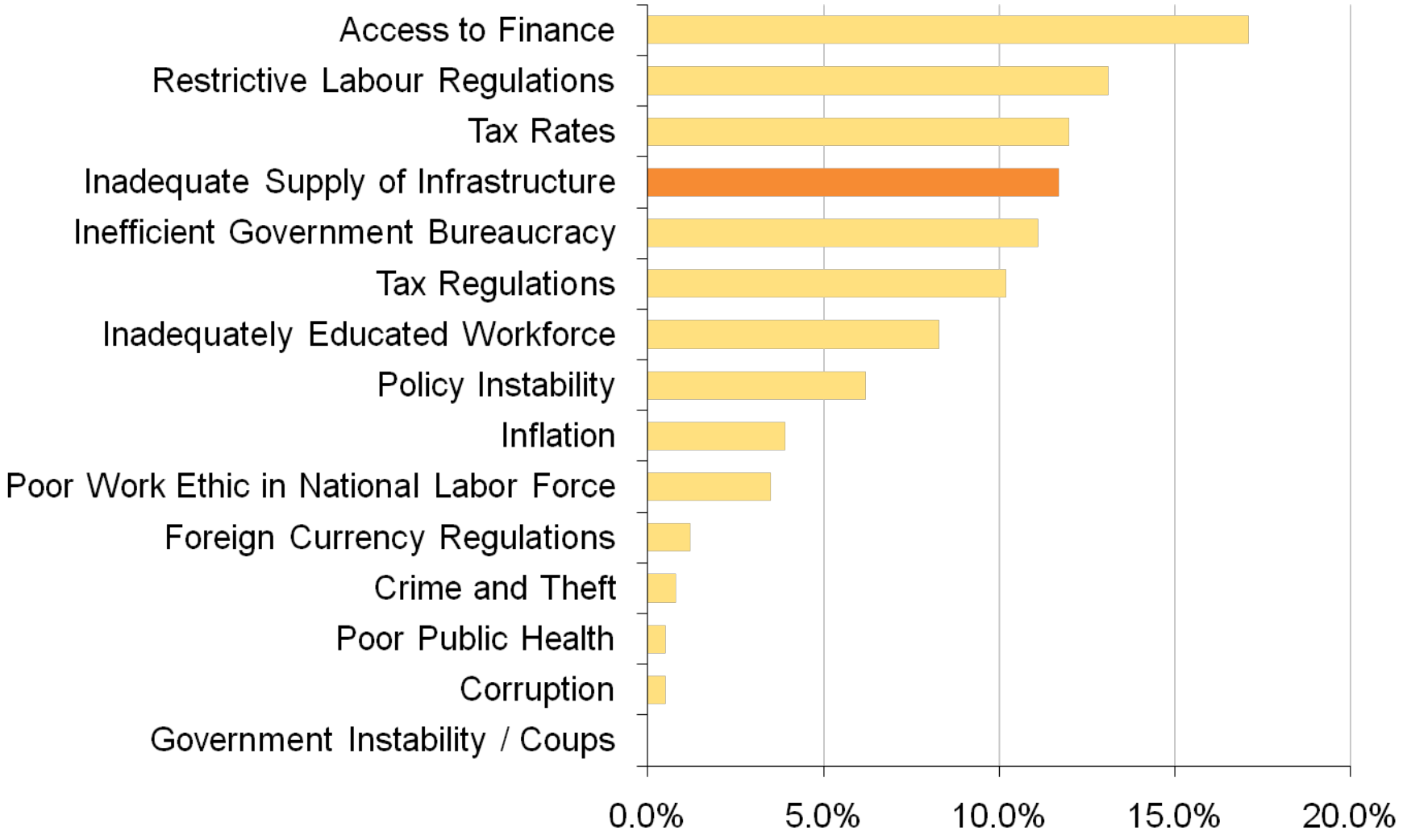
	ACT	TAS	VIC	WA	SA	NSW
Roads	B	C-	C+	C+	C-	C-
Rail	F	F	D	C+	C-	D-
Ports		B-	C+	B-	B-	C
Airports	B-	B	B	C+	B-	B
Potable Water	B-	B-	C	B-	B	B-
Waste Water	C+	C	B-	B	B-	C+
Storm Water	C+	C-	C-	C	D	C
Irrigation		B-	C-	C+	C+	C
Electricity	B+	B-	C-	B-	B-	C-
Gas	A-	C	C	C-	B+	C
Telecoms	B-	C+	C	C-	C	C-

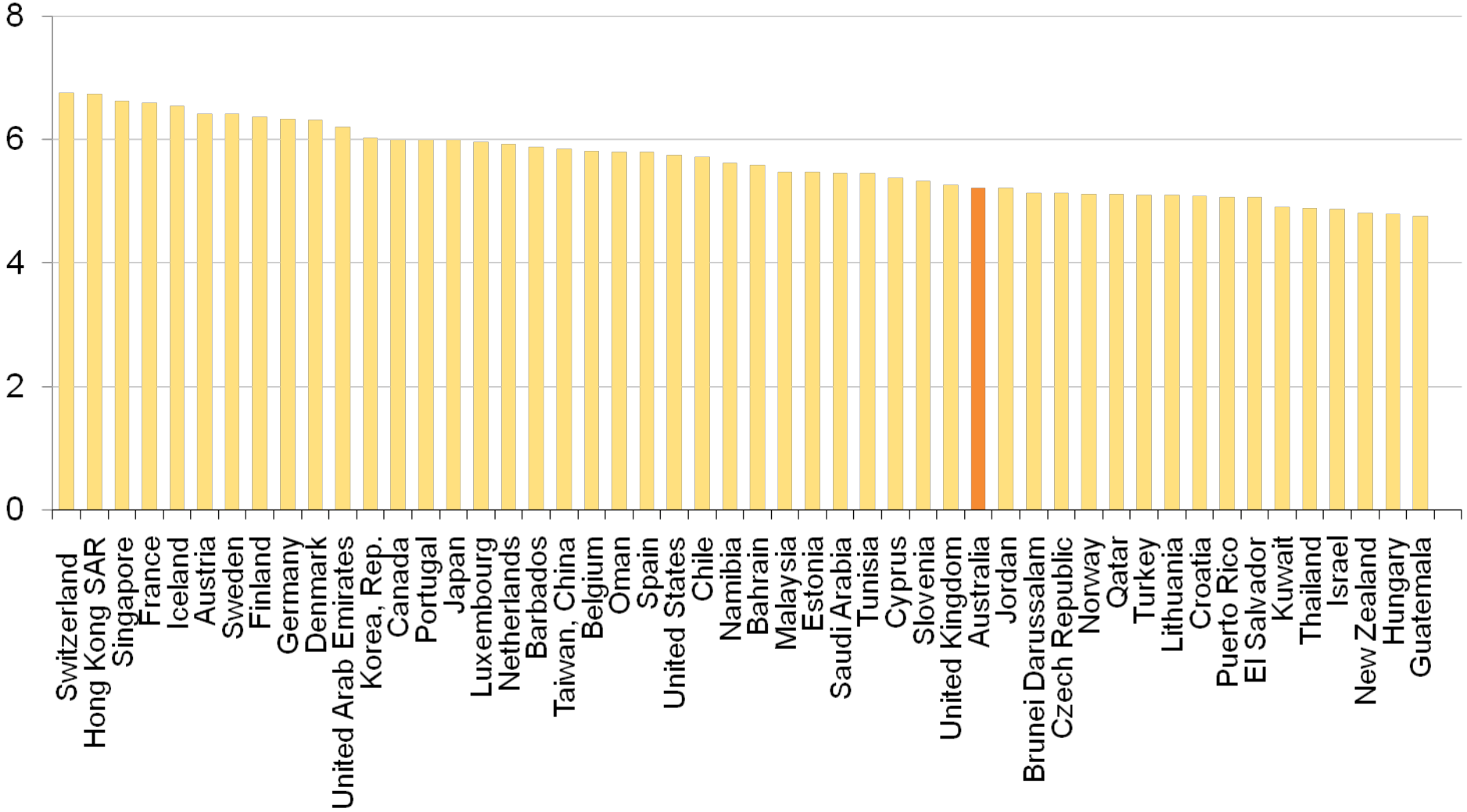
Source: Engineers Australia, *Infrastructure Report Card 2010*.

Infrastructure is readily identified as one of Australia's 'Achilles heels'



Source: World Economic Forum, *Global Competitiveness Report 2010-2011.*

Australia ranks poorly by international standards for the quality of its infrastructure



Source: World Economic Forum, *Global Competitiveness Report 2010-2011.*

What are the productivity gains from infrastructure?

- David Aschauer (1989):
  - Associated decline in productivity in 1970s United States with underinvestment in infrastructure
- Productive impact of public capital
  - Leverages the productivity of private investment in labour and capital
  - Potential to foster innovation and new business models
- United States Treasury (2010):

"Research has shown that well designed infrastructure investments can raise economic growth, productivity and land values, while also providing significant positive spillovers to areas such as economic development, energy efficiency, public health and manufacturing."

Source: US Department of the Treasury with the Council of Economic Advisers, *"An Economic Analysis of Infrastructure Investment," (2010)*

What are the productivity gains from infrastructure?

- Surprising absence of consensus regarding the productivity of public capital:
  - Aggregation effect tends to produce exaggerated estimates of productivity, which aren't apparent in disaggregated data
  - On the other hand: region-specific studies can capture increases in local economic activity that substitute for activity in neighbouring regions
- Haughwout (1998)

  "It is important to distinguish investments in public goods which add to the productive capacity of the nation as a whole from those that simply provide advantages to some places over others."

Sources: Andrew Haughwout, *"The Paradox on Infrastructure Investment,"* (2000);, *"Public infrastructure investments, productivity and welfare in fixed geographic areas,"* (2000); Otto and Voss, *"Public Capital and Private Sector Productivity,"* (1994)

The wider impact of infrastructure choices

"Infrastructure assets are typically **large fixed assets** with significant capital costs; they take a long time to construct and are **effectively irreversible**. As infrastructure assets can also have important **network features** and generate significant positive and negative externalities, **choices can lock-in**, determining a network of transaction costs that then shape patterns of trade for a long time."

- Dr Ken Henry AC, Treasury Secretary

The wider impact of infrastructure choices

- Opportunity costs borne by large capital projects
  - Ties up capital and associated user choices for extended periods of time
- National Broadband Network
  - Risk of locking Australia into a mode of delivery that might soon be out-of-date

"Government spending that does not pass an appropriately defined cost-benefit test necessarily detracts from Australia's wellbeing. That is, when taxpayer funds are not put to their best use, Australia's wellbeing is not as high as it otherwise would be."

- Dr Ken Henry AC, Treasury Secretary

“Right place, right time”

- Need to match spending with real needs of economy
  - Blanket increase in spending unlikely to be effective in and of itself
- Consequences of regulatory delay
  - Research by Jerry Hausman (1997) at Brookings estimated cost of regulatory delay in mobile telephony at billions of dollars per year.
- Effect of over-regulation on efficiency of infrastructure use in Western Australia

  “trucking company Esperance Freight Lines described as a nightmare the then Main Roads WA system…. drivers needed permits for all eight networks and had to carry 1652 pages of paperwork in the cab with them. It was only in May this year that the ridiculous regulations were changed.”

  - Weekend Australian, 20 November 2010

Importance of regulatory clarity

- Peculiarities of infrastructure investment
  - Subject to natural monopolies
  - Important role of government regulation
- Increasing scrutiny of efficiency and returns to investment fostered by private sector provision
  - But still some way to go:

> "The classic Australian public provision model of government planned, installed and financed infrastructure with pricing at marginal cost or on a loss-making basis – with returns recovered through the taxation system – continues to characterise much of Australia's publicly provided infrastructure."
>
> – *Committee for the Economic Development of Australia (2005)*

Right place, right time, *right price*

- Range of unpriced externalities makes prioritisation more difficult
  - Potential to make implicit cross-subsidies between users and modes more transparent

    "When one mode is not paying all of its costs the most efficient solution is to remove the subsidy on that activity, that is, to ensure it pays full costs. When dealing with external costs it is even more important to charge directly for the activity responsible for the externality."

    – *Productivity Commission, "Road & Rail Freight Infrastructure Pricing" (2007)*

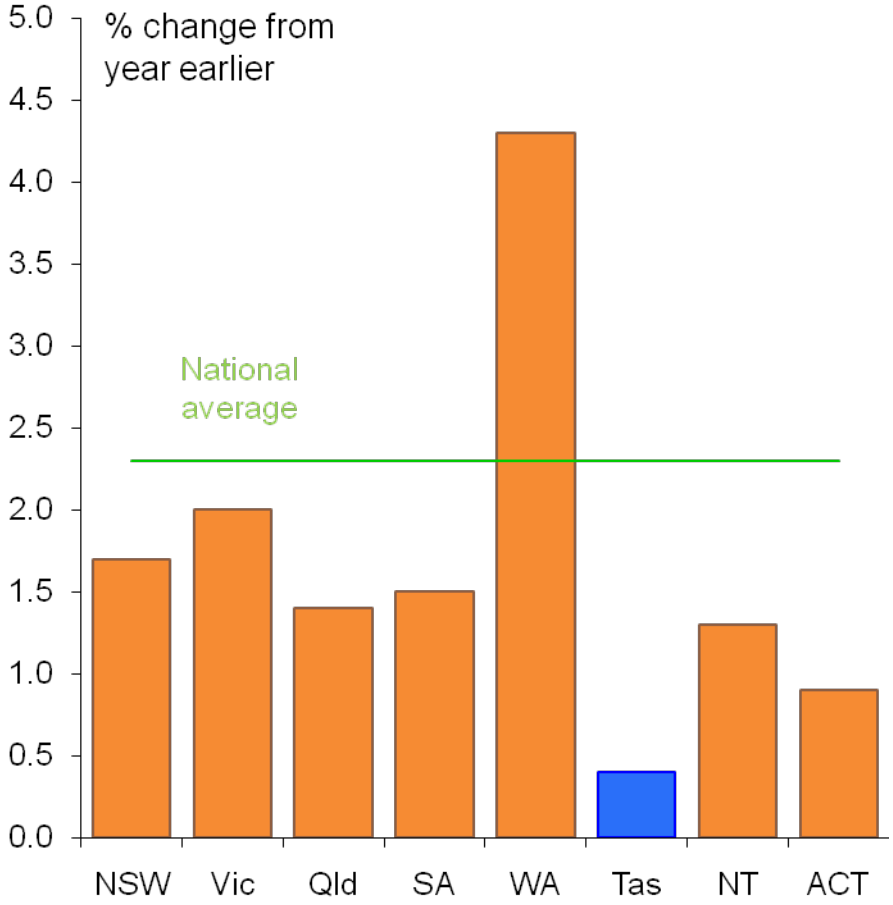
- Role of pricing in risk management
  - Important prerequisite to opening up new sources of finance, including the relatively untapped super funds
- Role of government in risk management
  - Unavoidable role of regulation in fostering the efficiency of large infrastructure projects

Prioritization

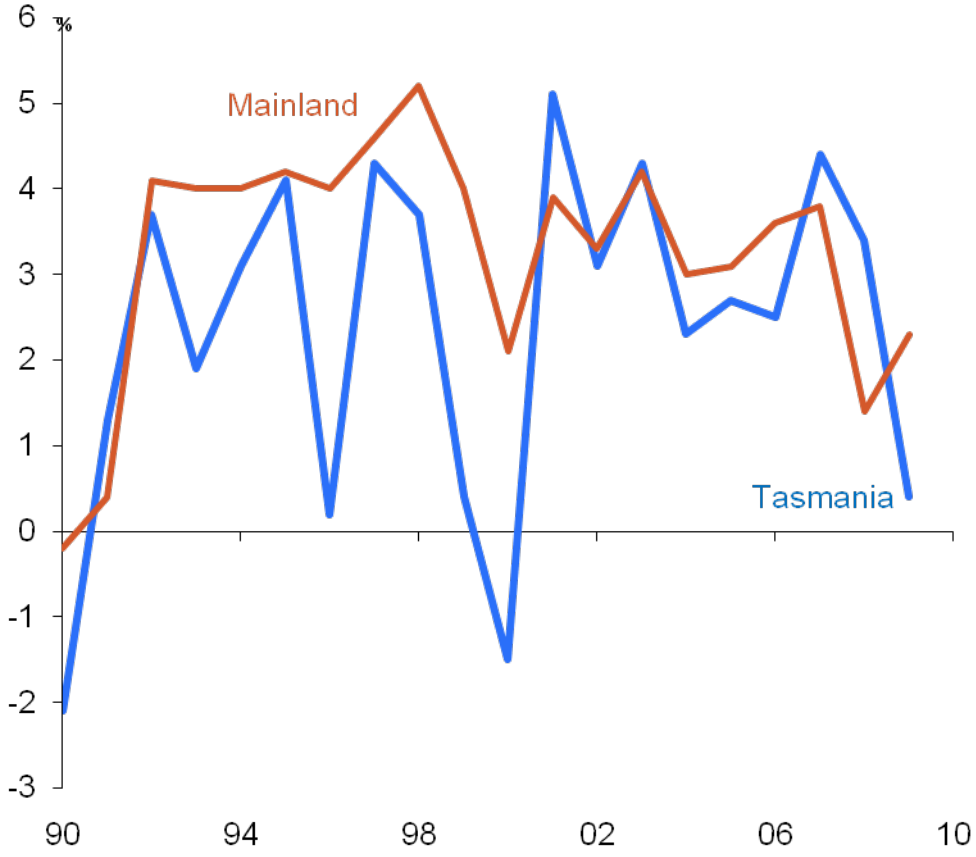
- Potential of changes to infrastructure pricing models
  - Increased clarity for policy-makers and planners
  - However: unlikely to resolve all complexities in infrastructure prioritisation
- Infrastructure Australia
  - Potential for national prioritisation
  - Risks in matching proposed projects to priorities without consideration of relative efficiency
- Attention to the patterns of growth and trade we lock in with our infrastructure decisions
- Role of regulatory certainty in fostering more efficient long-term investment horizons

Tasmania has just recorded its worst economic growth performance since 2000-01

Growth in gross State product, 2009-10



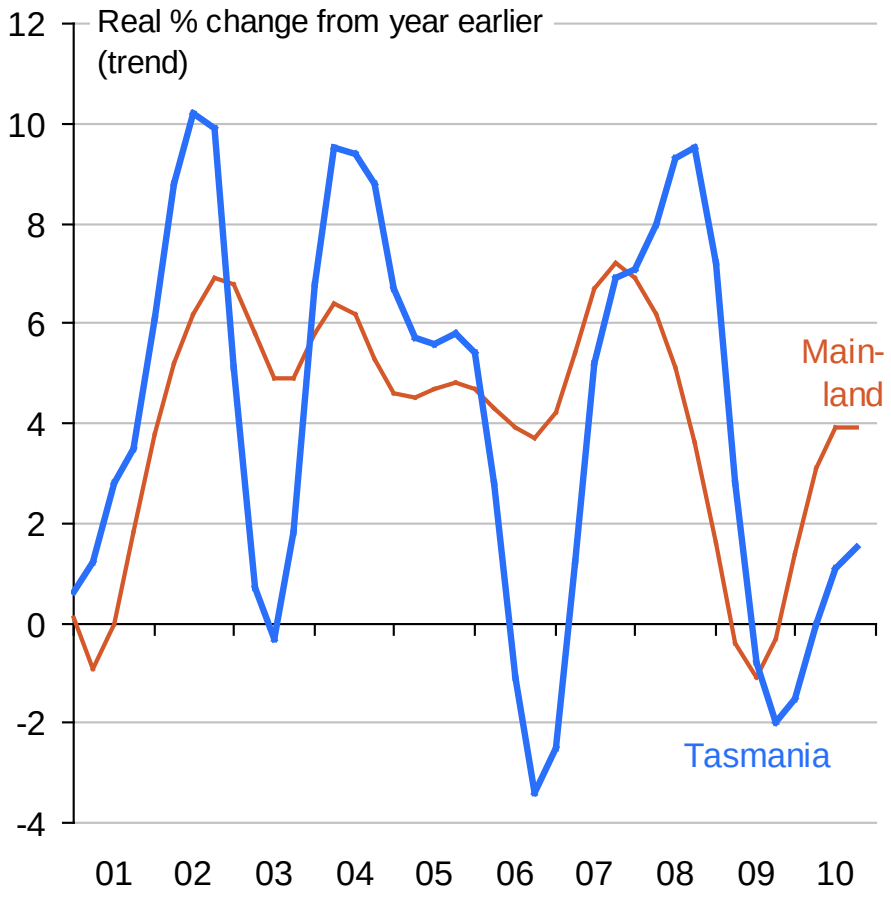
Growth in gross State product 1989-90 to 2009-10



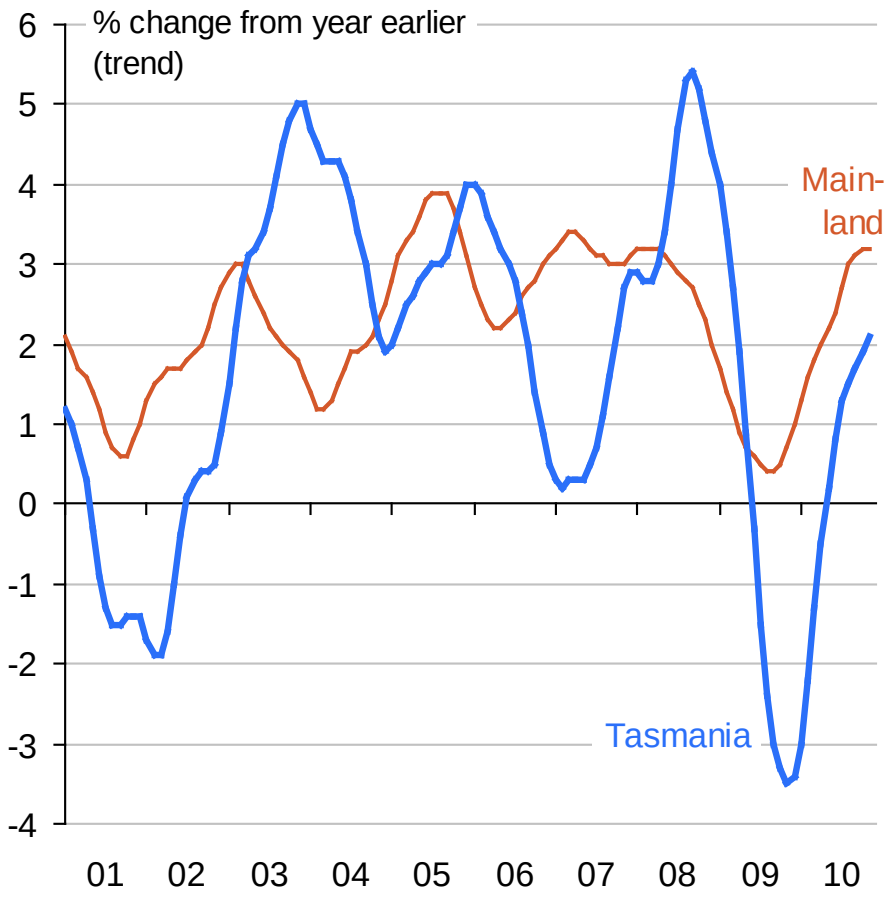
Source: ABS *State Accounts* (5220.0) 2009-10.

However that doesn't mean that Tasmania is now in, or headed for, recession

State final demand



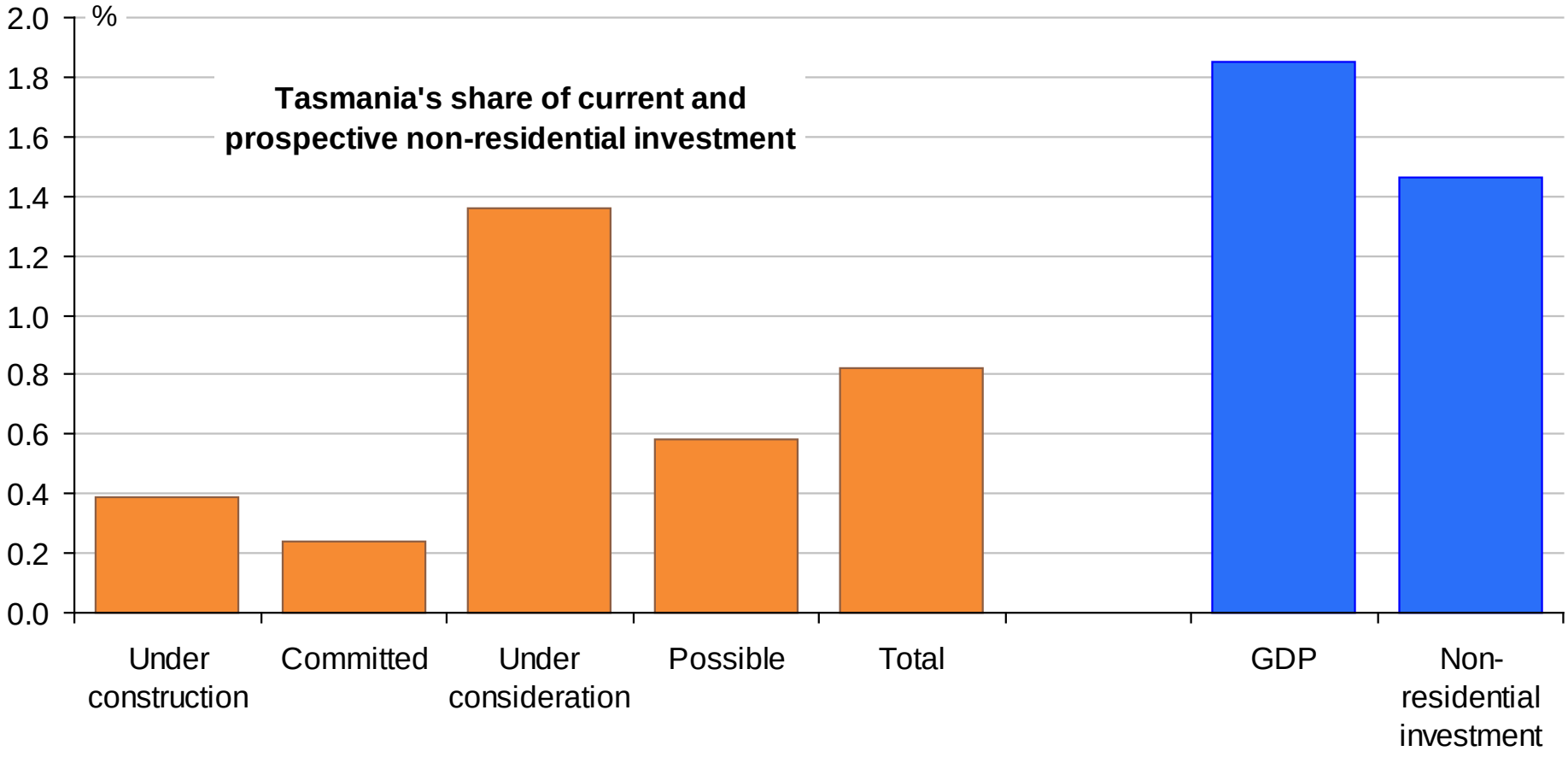
Employment



Source: ABS *Australian National Accounts: National Income, Expenditure & Product* (5206.0) September 2010; *The Labour Force* (6202.0), October 2010

Tasmania is missing out on the national 'investment boom'

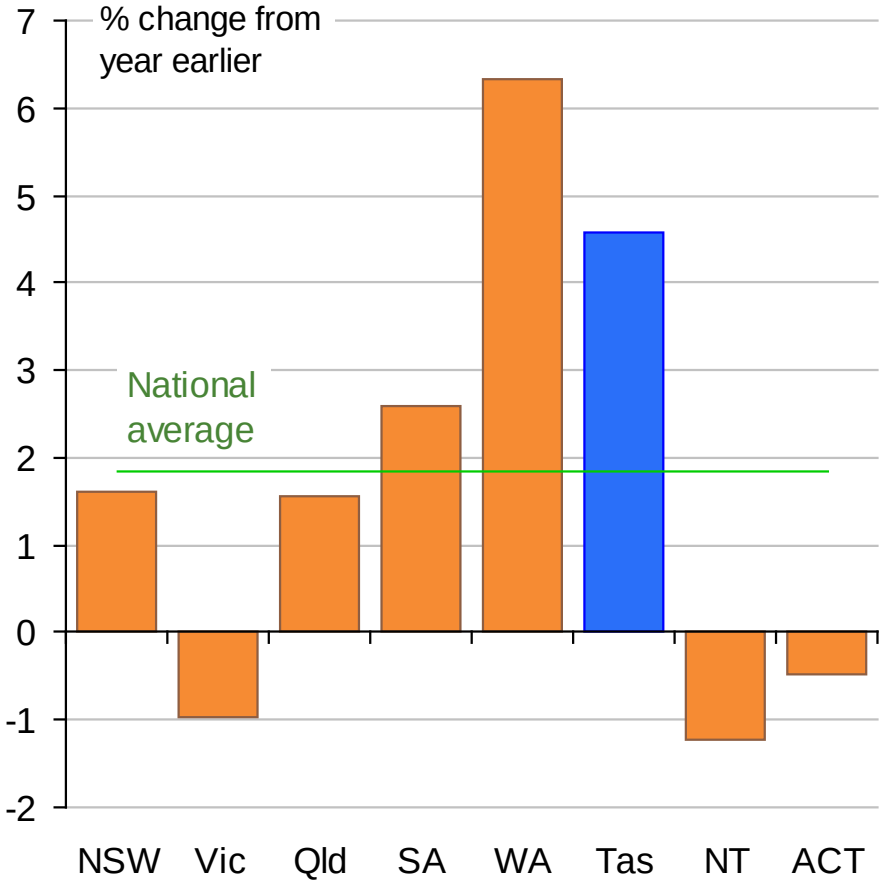
Tasmania's share of Australian non-residential investment spending compared with its share of GDP



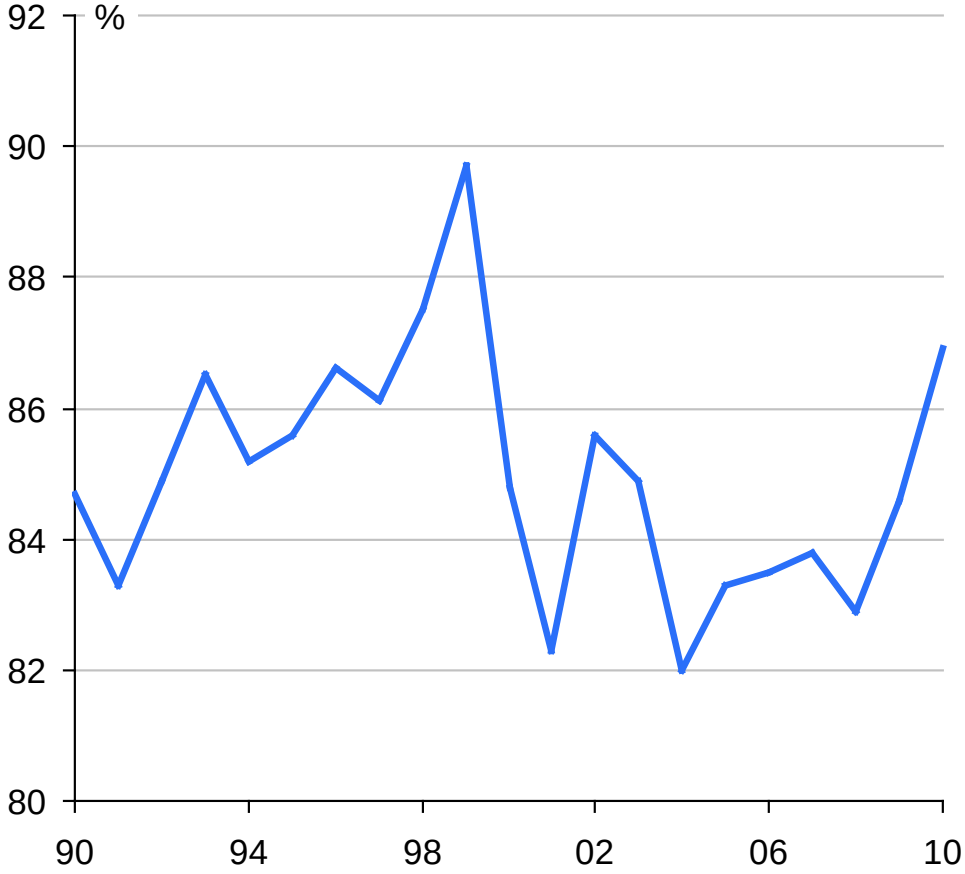
Note: non-residential investment is public plus private gross fixed capital expenditure excluding dwellings and ownership transfer costs.
Sources: Access Economics- Arup *Investment Monitor* (September 2010); ABS, *State Accounts* (5220.0) 2009-10; *The Labour Force* (6202.0); Grattan Institute calculations.

Tasmania's productivity performance has improved over the past two years – although this could be just 'cyclical'

Labour productivity growth, 2009-10



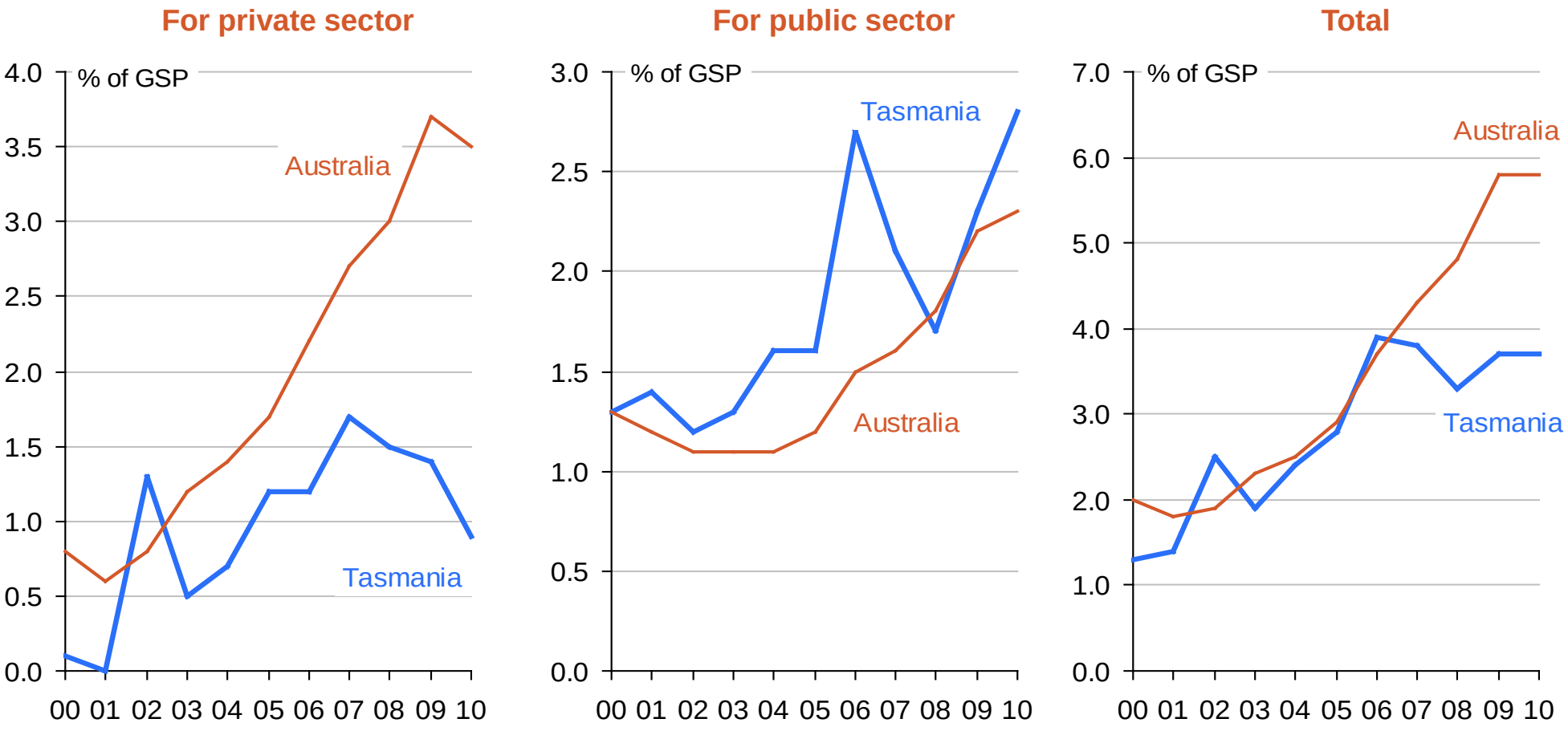
Tasmanian labour productivity as a pc of national average



Note: 'labour productivity' defined as gross State product per hour worked (hours worked 'grossed up' from estimates for survey week in each month).
Source: ABS *State Accounts* (5220.0) 2009-10; *The Labour Force* (6202.0); Grattan Institute calculations.

Tasmania's infrastructure spending is well below the national average as a p.c. of gross product

Infrastructure spending as a p.c. of gross product



Note: 'infrastructure spending' defined as value of engineering construction work done, excluding 'heavy industry' and 'recreation and other'.
Sources: ABS *Engineering Construction Activity, Australia* (8762.0); *State Accounts* (5220.0) 2009-10; Grattan Institute calculations.