

***SB11 World Sustainable Building Conference  
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***Retrospective evaluation and prospective value-add:  
A review of R&D investment in Australia***

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**Sustainable  
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National Research Centre

# Presentation Structure

1. Background to Australia's SBEnrc
2. R&D Investment and Impact Project
3. Future collaboration ... CIB TG85



# AUSTRALIA

## EUROPE



# Australia's Construction Industry

- A\$160B = US\$160B = €120B pa turnover
- Employs 1 million people
- 250,000 firms => many small firms
- Growing and slowing at same time ...
  - Residential, Commercial, Industrial
  - Resources & Mining, Infrastructure

- Slower in productivity growth than others
- Safety remains an issue
- Strong growth in *green* construction
- Declining public support for R&D as private support grows



Sustainable  
**Built Environment**  
National Research Centre

# Our Mission

To be a world-class research and knowledge broker in sustainable infrastructure and building design, construction and management

# Growth of Collaborative Research through Australia's SBEnrc

QUT/CSIRO Construction Research Alliance



1996



2001



2009

2010



2012







**Sustainable  
Built Environment**  
National Research Centre



**Program 1 - Greening the Built Environment**

**Program 2 - Developing Innovation and  
Safety Cultures**

**Program 3 - Driving Productivity through  
Procurement**

- » **A nation-wide collaborative research centre**
- » **Industry, government and research partners**
- » **Applied research and industry outreach across 3 integrated themes**



# Partners



# R&D Investment and Impact Project

## Background and significance

- Australia's R&D spend is 2% of GDP
  - Denmark and US 2.5%
  - Finland and Sweden > 3% (DIISR 2010:3)
- Australian Government target
  - 25% increased business engagement in innovation in the next 10 years
  - responses to climate change; improving workplace innovation capabilities; and business innovation
- Built environment productivity growth is poor

# The Project ...

1. Audit R&D investment in the Australian built environment since 1990
2. Examine impact of research and innovation in public and private organisations (case studies)
3. Develop a strategic roadmap – assess industry future that R&D will respond to and help shape
4. Devise policy to maximise the value of R&D investments to public and private organisations

# The Built Environment Research Roadmap

- SBEnc support from strategic level



- Australian Built Environment Industry Innovation Council (BEIIC) support
  - on Project Steering Committee



- OECD international alignment
  - *Innovation Strategy: Getting a Head Start on Tomorrow, 2010*



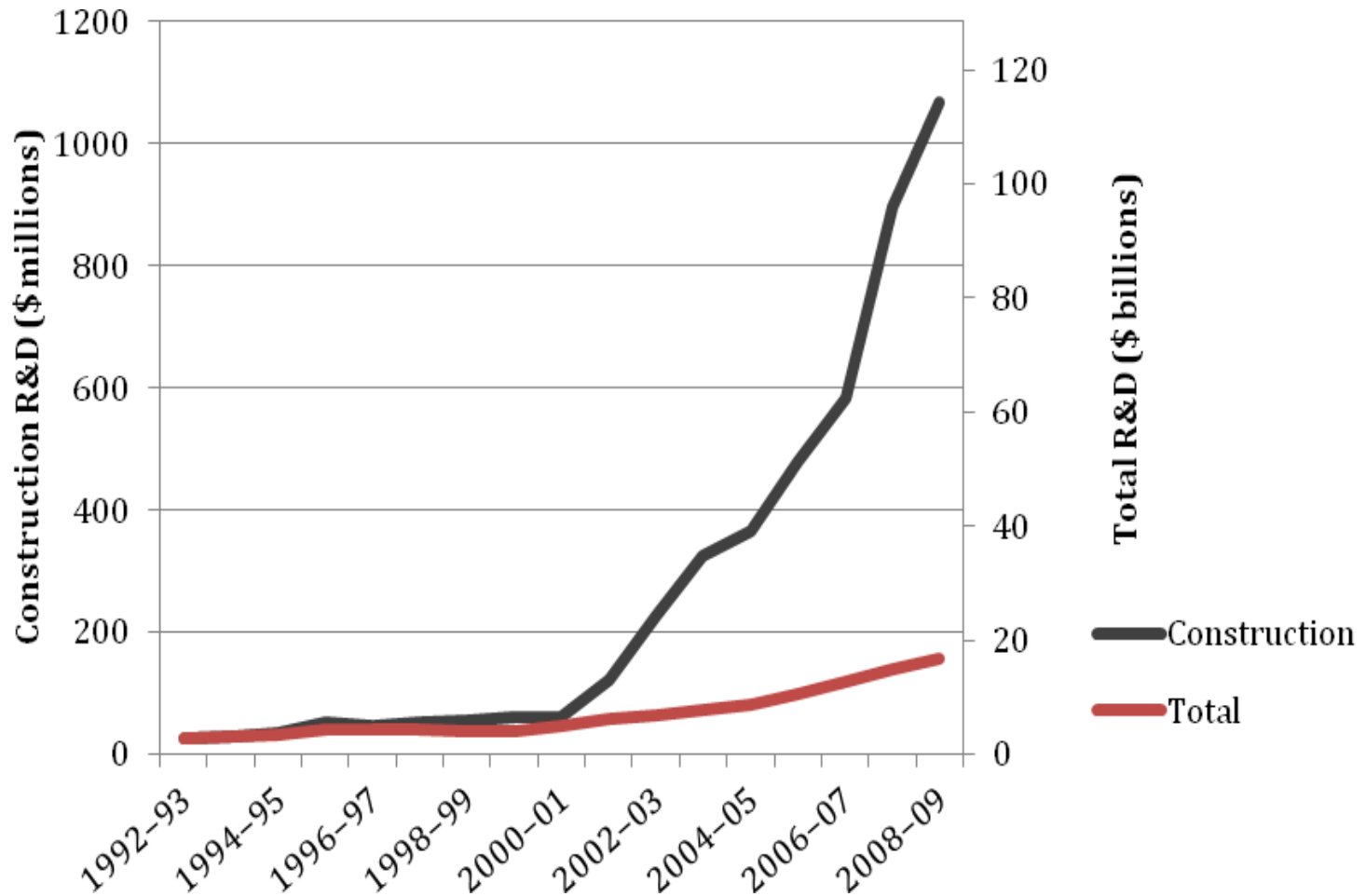
- CIB New Task Group focus
  - *TG85 - R&D Investment and Impact*



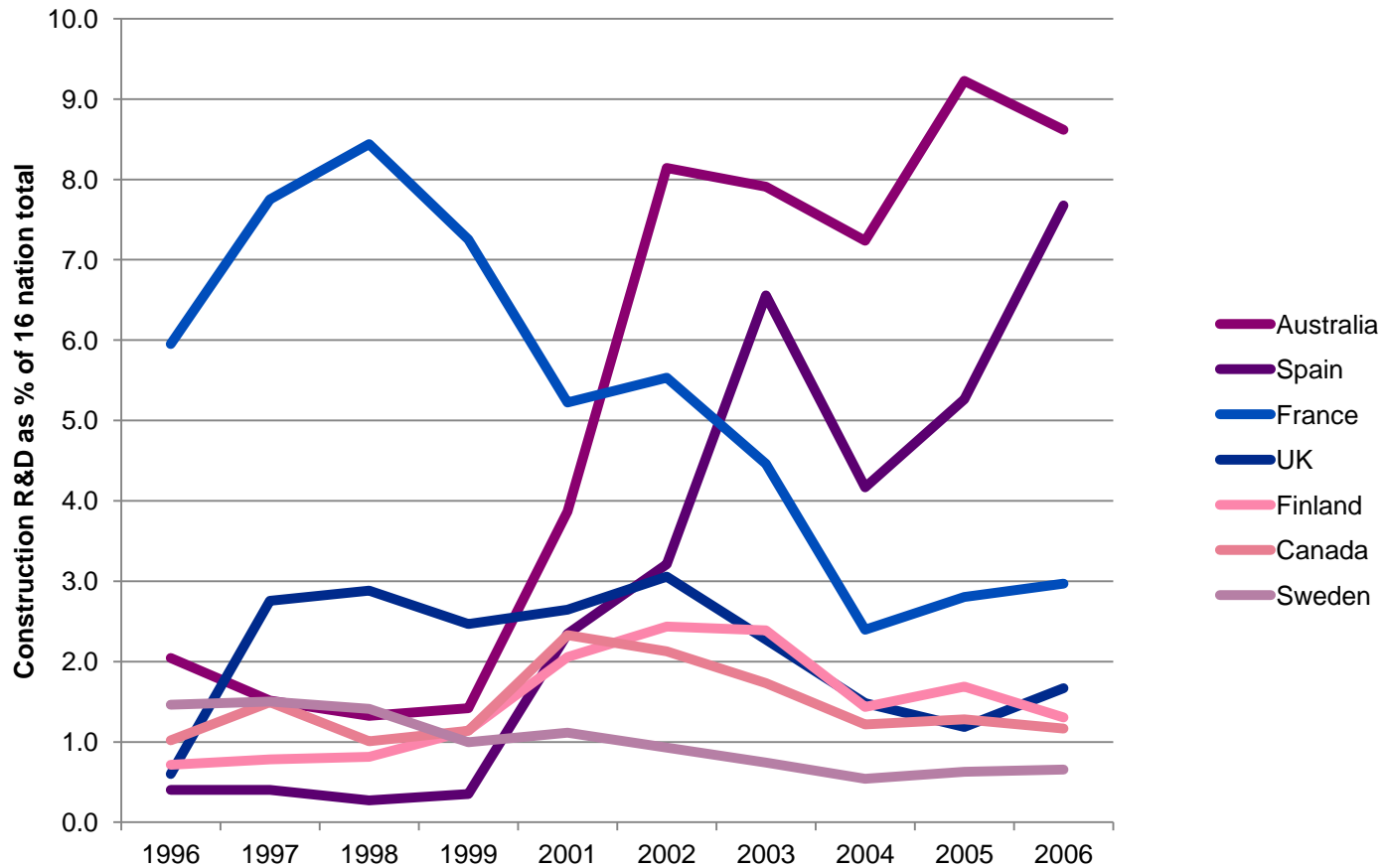
# Retrospective evaluation

*Private-sector R&D on construction relative to total business R&D*

*(from Barlow 2011)*



# *Australian business R&D investment in the construction sector as a share of 16 OECD nations (from Barlow 2011)*

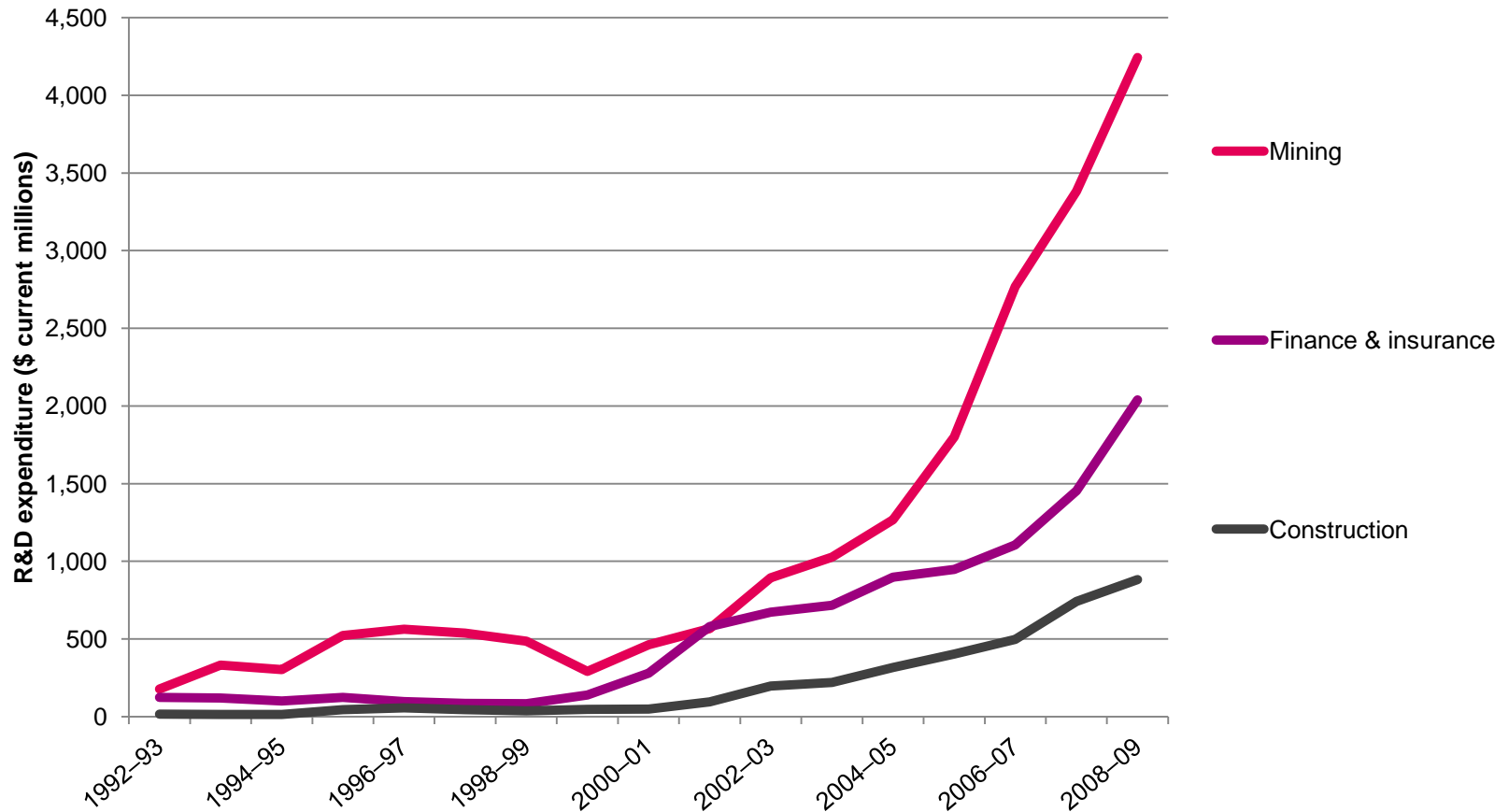


# Comparing the construction industry with chemical and motor vehicle manufacturing

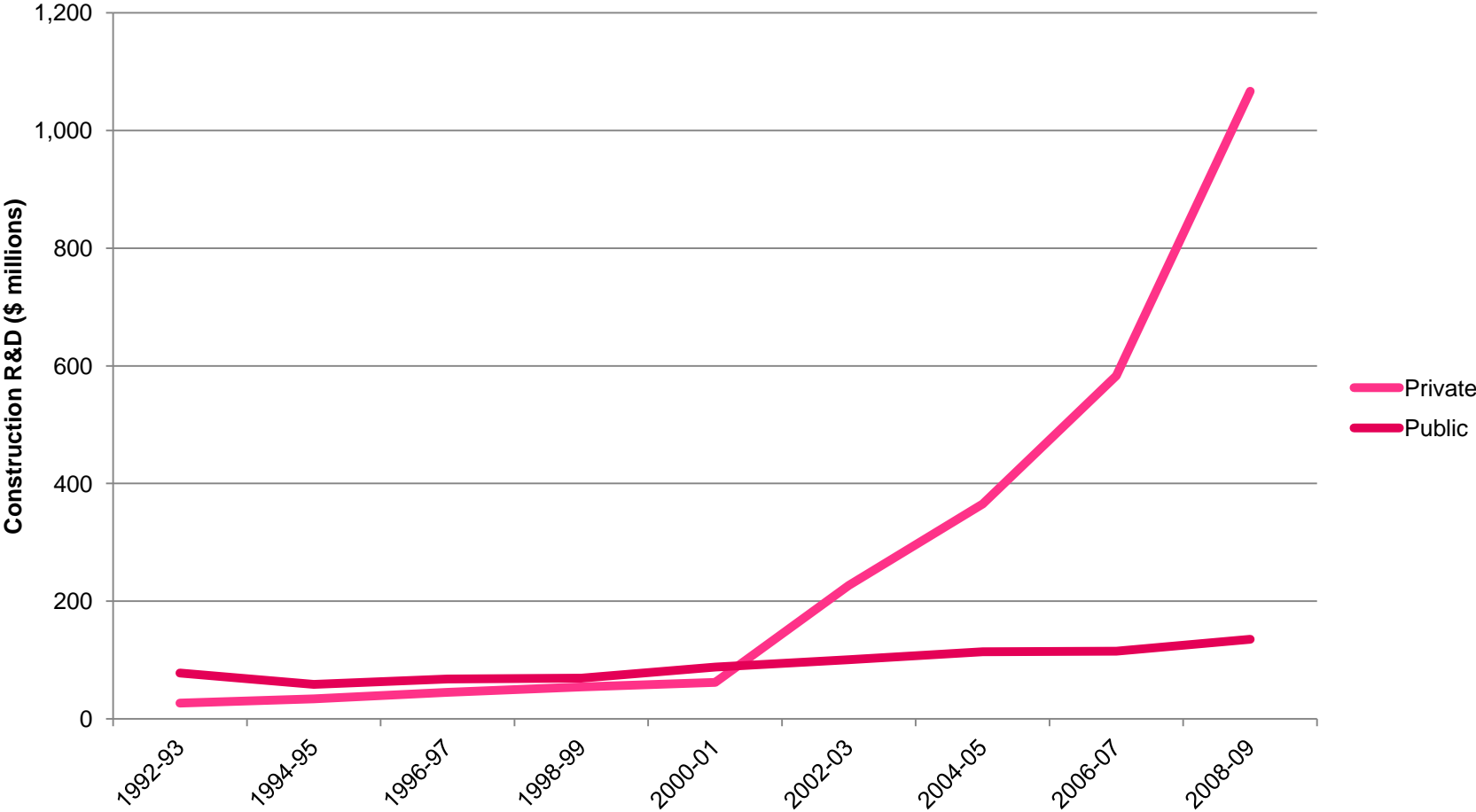




# Comparing the construction industry with mining and finance



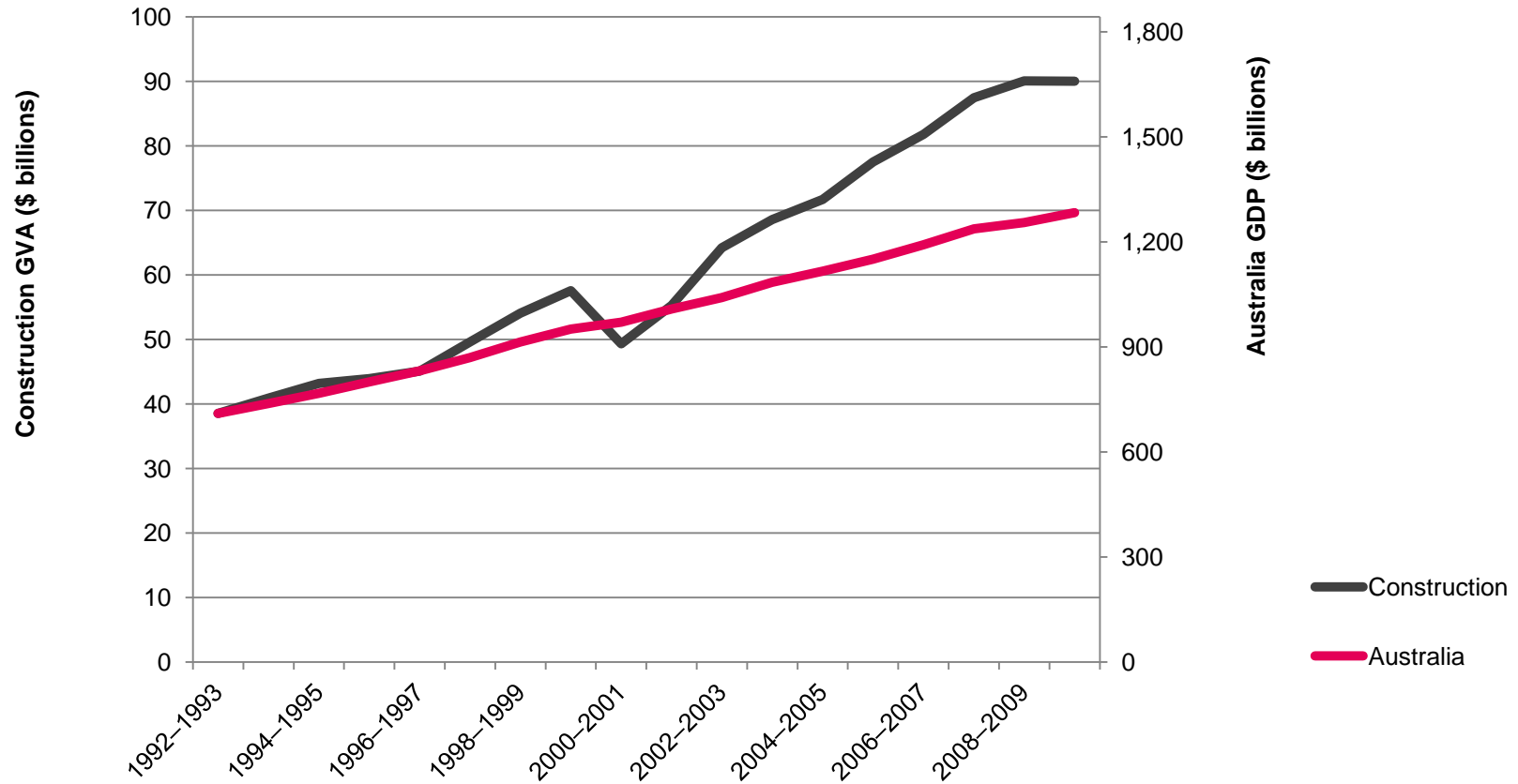
# Private versus public R&D on 'construction'



# Government agency R&D focused on 'construction'



# The construction industry in the Australian economy



# Questions for future research

- *Why did construction grow its R&D investment so quickly?*
- *What happened to government R&D?*
- *Why is construction not better known for its R&D, both in the community and among policymakers?*
- *What is the most important role for public research organisations?*
- *Has the construction industry's perception of public research changed over the past decade?*

# 3 Case Studies – Happening Now

Examining mechanisms and impact of research and innovation in organisations

1. Digital Modelling
2. Green Building
3. Construction Worker Safety

# Prospective value-add ... next year

- Industry roadmapping
  - Environmental
  - Social
  - Technological
  - Market
  
- R&D Strategy
  - Public
  - Private





# Conclusions

- Understanding previous behaviours can improve future performance
- Case studies provide depth and richness
  - Green buildings case will highlight what's worked and what hasn't ... in WA
- Need industry and research roadmap to better target future investments
- And informed policies to guide actions ...

**We can all do better!**



P. Steiner

*"It's always 'Sit,' 'Stay,' 'Heel'—never  
'Think,' 'Innovate,' 'Be yourself.'"*

# CIB TG85: R&D Investment and Impact

Inaugural meeting ....



**International Council  
for Research and Innovation  
in Building and Construction**

Room 214 15:00 to 17:00 Today

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*Thank you for your attention ...*

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