



HELMSMAN

Capital Projects Report

2nd Edition, August 2008

About the Helmsman Institute:

The Helmsman Institute is a Division of the Helmsman International Group.

The Institute is committed to improving project governance and project performance in Australia through world class research, education and professional development.

The Institute draws intellectual rigor and insight through its associations with a number of leading universities and educational institutions across Australia.



EXECUTIVE SUMMARY

Despite the sub-prime crisis, falling asset prices and talk of recession, overall capital investment levels in Australia remain healthy. While the frantic double digit growth rates of the past three years are set to moderate to rates closer to overall GDP growth, the absolute level of investment is forecast to remain high for at least the next three years.

Three sectors in particular are driving continued high levels of capital investment – public infrastructure, mining and defence. These three sectors will account for in excess of \$65b in capital investment for each of the next three years. Each of these sectors has specific structural drivers that will ensure that investment levels stay high for the foreseeable future

- Public Infrastructure – driven by the mining boom in Western Australia and Queensland, but also more generally across the country by the need to redress decades of under-investment
- Mining – driven by strong demand from China. Slight dips in economic growth forecast for our main trading partners will be largely offset by the boom in terms of trade and recent exchange rate depreciation.
- Defence – recent growth has been driven by “war on terror” reconfigurations and catch-up from delays related to the Kinnaird review. Continued high investment levels will be driven by the need to replace ageing assets - 80% of the Australian Defence Force’s warfighting assets will be replaced or upgraded over the next 10-15 years.

The data suggests that investment levels in these sectors are being constrained by project delivery capabilities rather than the appetite for investment. Planned investments are being spread across future years to “load level” project resources and a significant proportion of projects are being reprogrammed into the future each year due to delays in delivery.

Given the size of the capital investments being made in these sectors and the benefits expected to flow from them it is somewhat surprising that so little is being invested in developing the required project delivery capabilities.

The Helmsman Institute recommends that project management for large complex projects in these sectors focus more on accelerating delivery of outcomes, actively reducing risk and authentically aligning stakeholders - and less on adhering to process for its own sake. Based on studies of a number of major project resets the Helmsman Institute believes that delivery of most major projects can be accelerated by 10-20%, even in the face of apparent external resource constraints and even for well advanced in-flight projects.

The Helmsman Institute believes that relatively small investments in building advanced project execution capabilities to accelerate project delivery will yield very large paybacks for the organisations involved and for the Australian economy.

.



Contents

| | |
|--|-----------|
| OVERVIEW | 4 |
| PUBLIC INFRASTRUCTURE | 5 |
| MINING..... | 7 |
| DEFENCE | 9 |
| FINANCE SECTOR..... | 11 |
| MANUFACTURING | 12 |
| CONCLUSIONS AND RECOMMENDATIONS | 13 |
| APPENDIX A: STATE PUBLIC INFRASTRUCTURE INVESTMENT | 14 |
| NEW SOUTH WALES | 14 |
| VICTORIA..... | 14 |
| QUEENSLAND..... | 15 |
| WESTERN AUSTRALIA | 16 |
| APPENDIX B: ABS 5625.0 NEW PRIVATE CAPITAL EXPENDITURE - SCOPE..... | 17 |



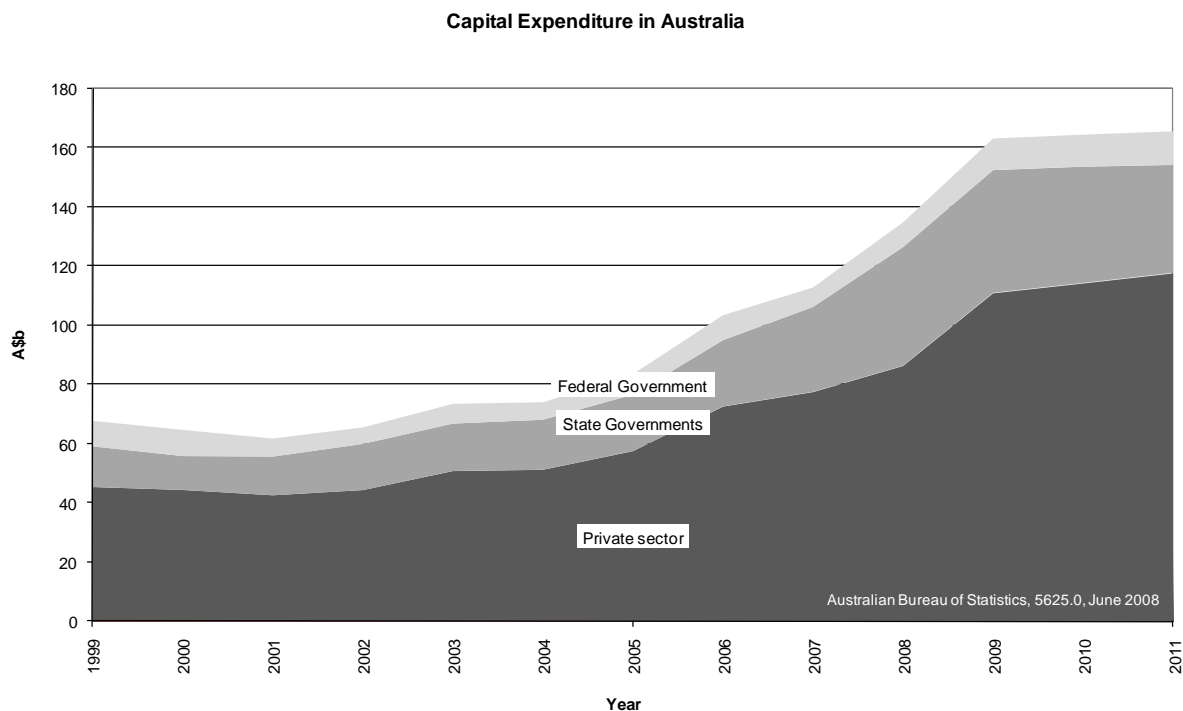
HELMSMAN

OVERVIEW

The Helmsman Institute Capital Projects Report is a six-monthly review of the landscape and outlook for capital projects in Australia. It examines the trends and drivers of capital investment across major industry sectors and their implications from a project management perspective.

This second edition of the Capital Projects Report is based primarily on data to the end of June 2008. In the six months since the first edition there has been major erosion in business confidence as higher interest rates have begun to slow the economy and the impact of the US sub-prime crisis has been felt through falling asset prices and write downs by some local banks. Fears of recessions in the UK and US have led to similar concerns by some commentators for the Australian economy.

However, our analysis of the capital projects landscape based on published data and feedback from a wide range of Program Management Offices, shows that while capital investment growth rates will slow over the next two years, absolute levels of investment will remain high.



To some extent this can be attributed to the inherent inertia of large capital projects – once started it's difficult and expensive to stop them. However, our analysis shows that high investment levels in three major sectors – public infrastructure, mining, and defence – are being driven by fundamental factors that will ensure these levels are sustained for the foreseeable future. Lower projected growth in investment in these sectors appears to be the result of project delivery limitations, rather than from lack of appetite or financial capacity for investment.

In Australia's two-speed economy other sectors are doing it somewhat tougher, but in most cases not as tough as might be expected. In the Finance sector for example, where the impact of the US sub-prime crisis and higher interest rates would be expected to be felt the most, capital investment remains strong with only minor short term adjustments being made, if any. The sector that continues to



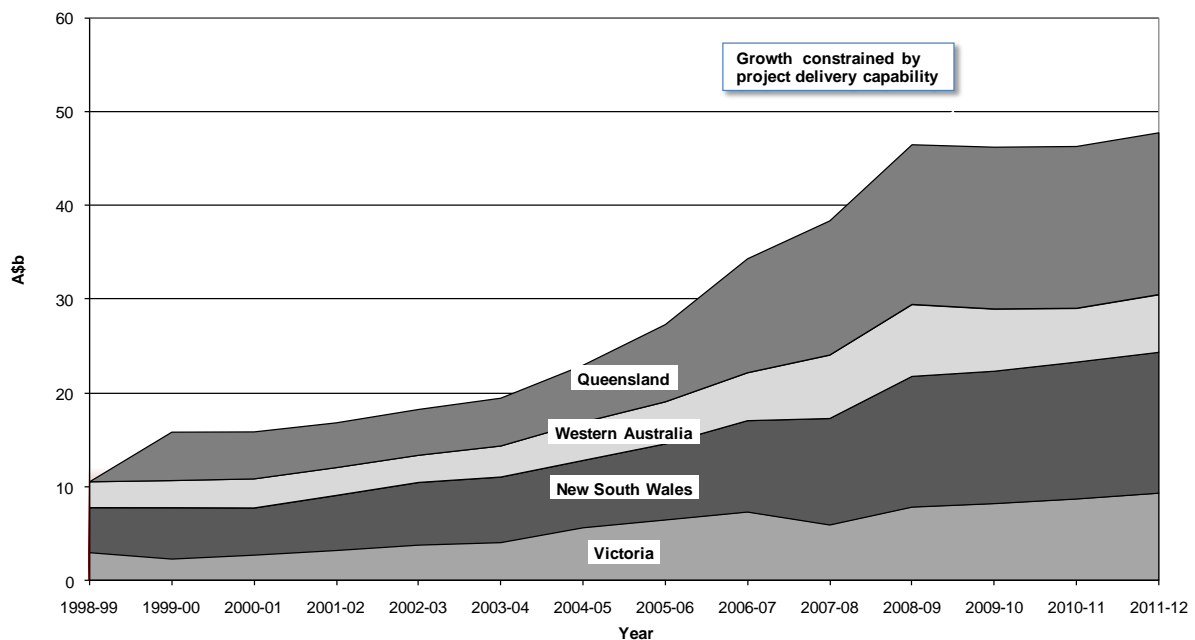
HELMSMAN

struggle is Manufacturing, but it is being driven more by longer term structural change rather than current economic conditions.

PUBLIC INFRASTRUCTURE

While the double-digit investment growth rates of the past three years are projected to drop back to rates that are closer to underlying GDP growth, levels of future committed investment remain high. This levelling off in investment growth appears to be due to project delivery constraints, rather than reduced need or financial capacity for investment

Infrastructure investment by selected State Governments



Investment in Public Infrastructure is being driven by a number of structural factors.

Continuous economic growth over the past 17 years at an average rate of 3.6% pa means that the economy is now operating at close to full capacity. The 2008-09 Federal Budget acknowledged that future growth therefore depends on expanding the productive capacity of the economy through investing in both

- Hard infrastructure - roads, transport systems, communications, water and sewerage, electricity, gas, ports etc
- Soft infrastructure - schools, universities, research facilities, hospitals, libraries, etc

Regardless of this growth imperative, much public infrastructure is now reaching the end of its design life and requires replacement in any case.

Another structural driver of capital investment in public infrastructure is technological change, particularly in areas such as telecommunications where substantial investment is required to maintain international competitiveness and Australia's ability to attract foreign investment.

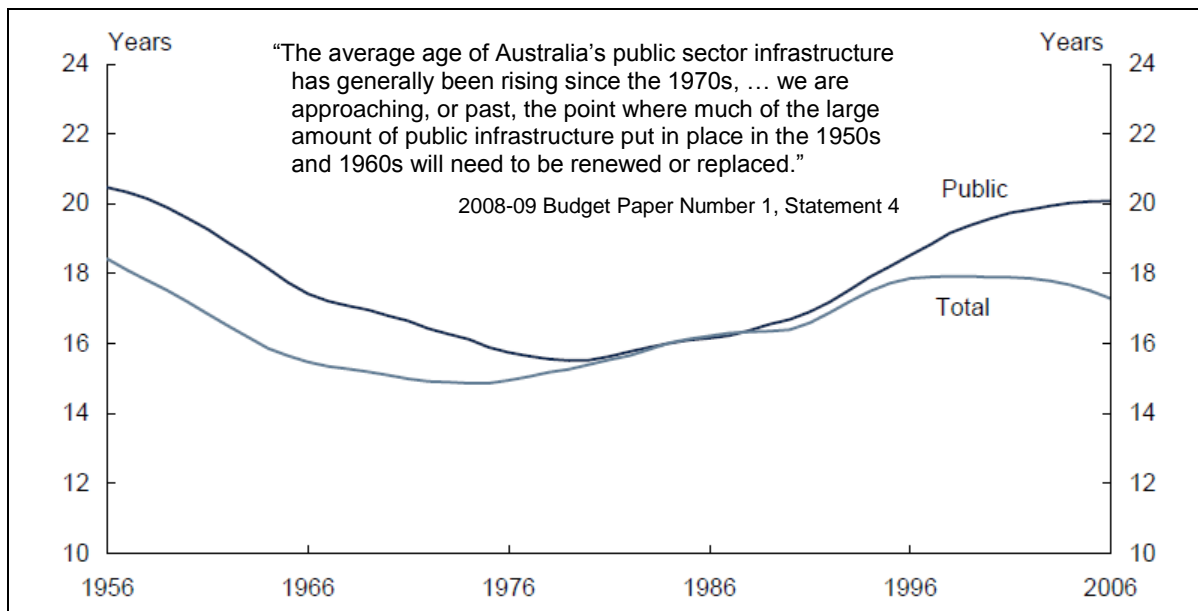


HELMSMAN

Population growth is stretching urban infrastructure in large population centres such as Brisbane, Sydney and Melbourne, as well as in the new mining boom towns being created in Western Australia and Queensland.

Climate change and other environmental issues are also beginning to have an impact with investment in new types of projects such as desalination plants, wind power and tidal power.

The State Governments with the largest populations (New South Wales and Victoria) and the greatest exposure to the resources boom (Western Australia and Queensland) have therefore made record increases in public infrastructure investment.

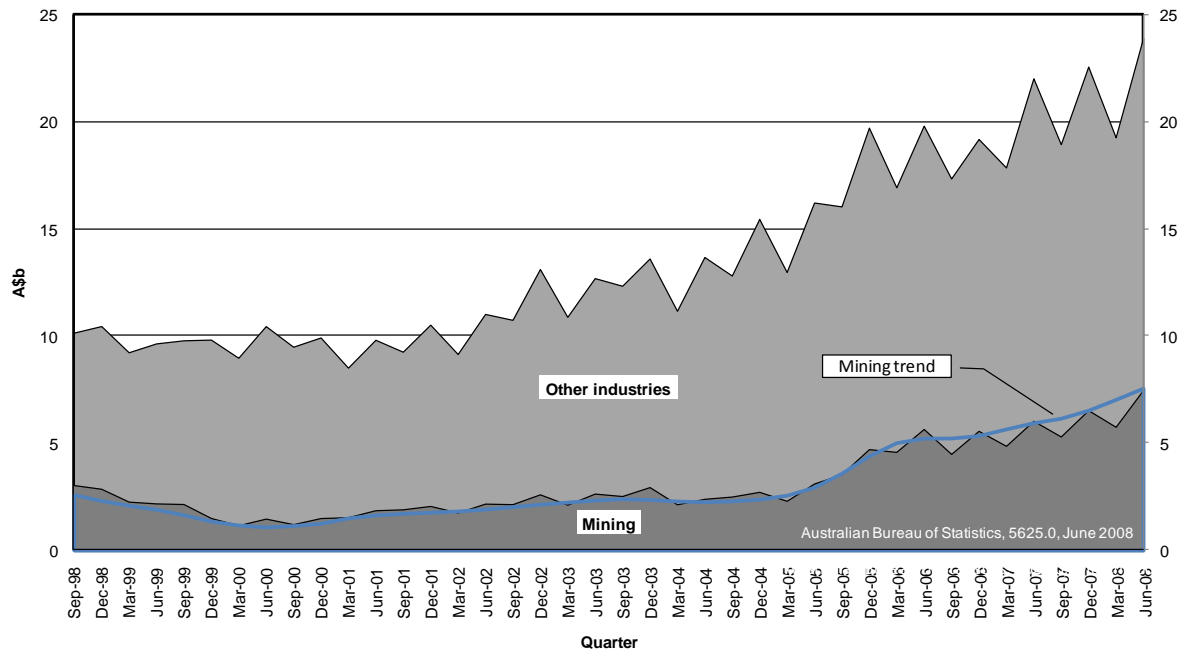




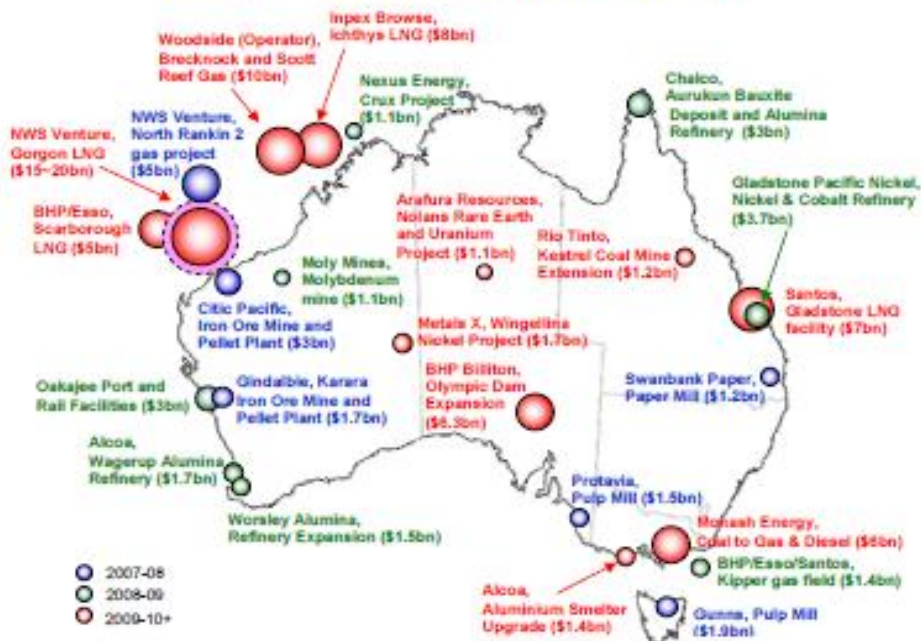
MINING

The mining sector now dominates private new capital investment in Australia, growing from around 14% of total investment in 2000 to almost 30% currently. While overall private sector investment has doubled since 2000, mining investment has increased fourfold in the same period.

Private new capital expenditure in Australia by sector (constant prices)



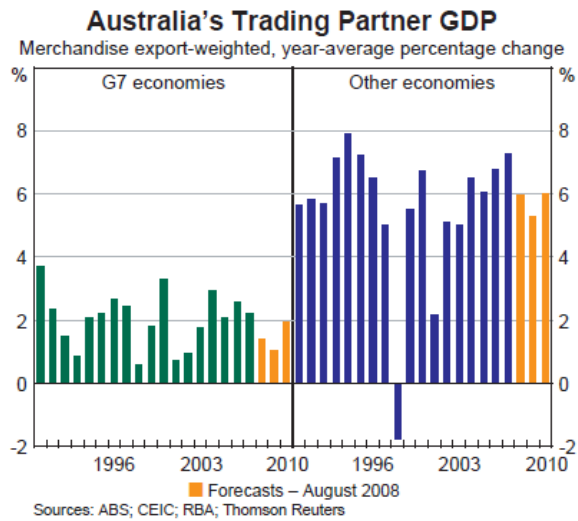
The scale of mining projects is orders of magnitude greater than in most other industries, both physically and financially¹.



¹ Access: Treasury entitled "The Economic Outlook", given to the Australian Business Economists on 2 April 2008.



The mining industry is driven by export demand, principally from China and Japan. While a dip in growth rates is forecast for our major trading partners and some uncertainty exists about continued growth for Japan in the short term, the medium and long term outlooks remain robust. In its August 2008 Statement of Monetary Policy, the Reserve Bank of Australia expected that “growth in Australia’s major trading partners will be around 4¼ per cent in 2008 and then slow to 3¾ per cent in 2009, down from 5¼ per cent on average in 2006 and 2007. A modest recovery in global growth is then projected for 2010.”



According to Treasury², “Australia has benefited more than any other developed country from the global boom in energy and raw materials prices ... As a consequence of the big rises over the past five years, Australia’s terms of trade are now at their highest level since the wool boom associated with the Korean War at the start of the 1950 ... And there is significantly more to come. Huge rises in bulk commodity prices are now in prospect for mid 2008 ... these could add more than 10 per cent to the terms of trade by the end of the year.”

Along with these price increases, recent falls in the value of the Australian dollar are likely to further increase the financial capacity for investment of the mining sector.

As is the case for Public Infrastructure, it appears that investment in the mining sector is being limited more by project delivery capacity than it is by the appetite or need for investment



Note: Incorporates a doubling in the \$US price of coal and a 65 per cent increase in the \$US price of iron ore
Source: ABS Catalogue Number 5302.0 and Treasury

² Speech by David Gruen, Executive Director, Macroeconomic Group, The Treasury entitled "The Economic Outlook", given to the Australian Business Economists on 2 April 2008.



DEFENCE

Defence is the fastest growing and largest area of Australian Government capital investment.

Table 21: Australian Government general government purchases of non-financial assets by function

| | Estimates | | Projections | | |
|---|--------------|--------------|--------------|--------------|---------------|
| | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
| | \$m | \$m | \$m | \$m | \$m |
| General public services | 424 | 777 | 637 | 590 | 836 |
| Defence(a) | 4,595 | 6,466 | 7,215 | 8,006 | 8,138 |
| Public order and safety | 325 | 425 | 186 | 362 | 321 |
| Education | 19 | 36 | 46 | 14 | 10 |
| Health | 120 | 133 | 156 | 59 | 55 |
| Social security and welfare | 526 | 400 | 305 | 220 | 206 |
| Housing and community amenities | 173 | 85 | 154 | 76 | 70 |
| Recreation and culture | 392 | 376 | 281 | 237 | 209 |
| Fuel and energy | 11 | 3 | 2 | 0 | 0 |
| Agriculture, forestry and fishing | 68 | 32 | 28 | 11 | 2 |
| Mining, manufacturing and construction | 59 | 32 | 31 | 23 | 39 |
| Transport and communications | 74 | 59 | 40 | 42 | 36 |
| Other economic affairs | 428 | 384 | 282 | 191 | 210 |
| Other purposes | 0 | 6 | 12 | 5 | 1 |
| General government purchases of non-financial assets | 7,214 | 9,212 | 9,374 | 9,836 | 10,134 |

(a) Purchases of specialist military equipment are now treated as net capital investment rather than as expenses. See Appendix A of Statement 3 and in Statement 9 for further details.

The 50% growth in investment levels over the past three years has been driven by two factors - catching up with the backlog of capital renewal driven by the Kinnaird review³, and a repositioning of defence capability to match the needs for security in the current threat environment.

The Kinnaird review was established as a result of project failures, most notably the Collins class submarine issues, and it recommended a range of new structures and policies for project delivery and approval. Implementation of these recommendations required restructuring of the Defence department which absorbed its focus for a number of years. In addition, projects now need a two pass process for approval, which initially added time to project approvals. This created a backlog in projects, and further ageing of Defence capability. This backlog began to clear in 2006.

The “war on terror” and the new asymmetric paradigm for warfare (where small non-state organisations create impact beyond that of traditional armies), has required all Western forces to restructure and to develop rapid, mobile, expeditionary forces, with high technical requirements for networking, and considerable amphibious capability in airlift and naval capability. The initial components of this transformation are beginning to flow through the system. In addition current units in service are expected to have much lower lifetimes due to the dramatically increased operational tempo.

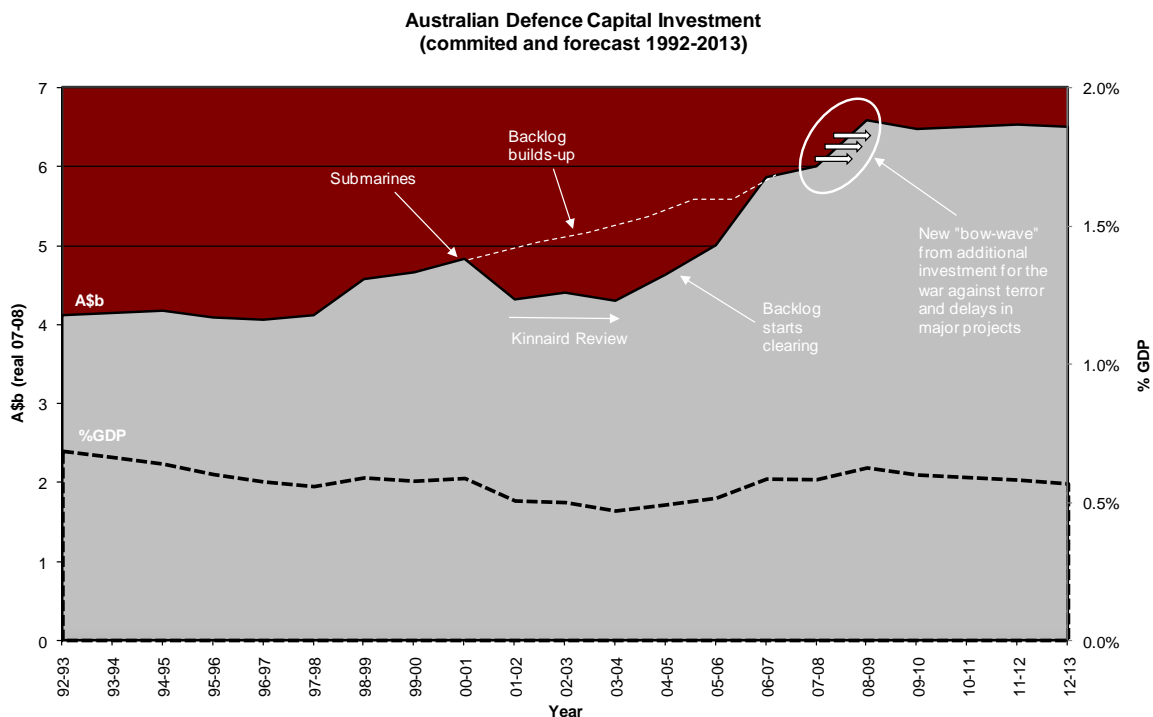
³ The Kinnaird Review was imposed on the Defence department by the Government to address project performance delivery problems.



HELMSMAN

However, these recent increases in Defence Capital Investment have only served to reverse a long term decline in investment levels as a percentage of GDP. As for Public Infrastructure, large amounts of military equipment and infrastructure – particularly in the Navy and Airforce - are at the end of their design lives and require renewal. Advances in technology also mean that upgrades are required throughout the lives of most major equipment and their associated support infrastructure. More than 80% of the Australian Defence Force's warfighting assets will be replaced or upgraded over 10-15 years⁴.

High levels of capital investment are therefore expected to be sustained into the foreseeable future.



The Defence Department, through its procurement arm the Defence Materiel Organisation (DMO) has been explicit (perhaps more than other State and Federal departments) in acknowledging the impact of project delays on capital investment. The 2008-09 Portfolio Budget Statement for the DMO notes “capital investment reprogramming or \$1,065.9m to forward years ... primarily reflecting failure of industry to deliver”. This represents a slippage of almost 23% of the 2008-09 DMO capability acquisition budget of \$4,677.9m.

It should be noted this slippage in delivery schedules has in general not caused cost blow-outs. Overall costs of Defence projects have been well managed.

The key issue for Defence going forward is accelerating delivery of large complex projects that often involve leading edge or developmental technologies. As well as being technically and physically complex, these projects often have a significant sociological dimension as they challenge existing paradigms and organisational cultures. Accelerating delivery therefore requires changes to project management approaches and capabilities, rather than just additional project management resources.

⁴ Dr Stephen Gumley, CEO of the DMO in the Keynote Address to the ADM Conference 28 February 2008 entitled “Core Challenges Facing the DMO and Industry”



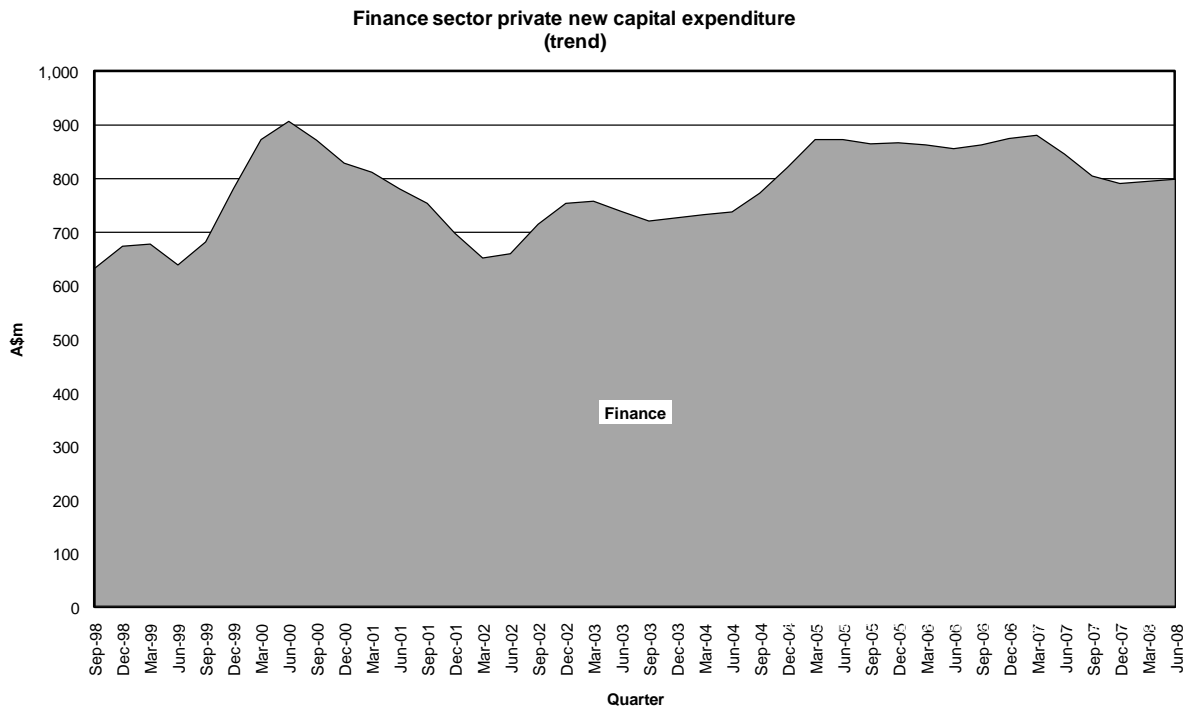
HELMSMAN

FINANCE SECTOR

Capital expenditure in the finance sector has declined by about 15% in the last year as might be expected given the impact of higher interest rates and the filtering through of write-downs due to the US sub-prime crisis.

However, the decline has been orderly rather than precipitous and our discussions with PMOs indicate that it is mainly short term discretionary investment that has been cancelled or deferred. Major initiatives and compliance projects have been largely unaffected. Most institutions have cut back strongly this year to protect current profitability whilst still budgeting for investment to return to original planned levels in the next 12-18 months.

Feedback from the industry indicates that there are no significant project delivery constraints, except perhaps in terms of obtaining exclusive or priority access to certain outsource providers. Nor has the investment boom in other sectors had a significant impact on project resource availability or cost, which indicates that there is still considerable lack of mobility across industries for project professionals⁵.



⁵ The Helmsman Institute report on “Australia’s Project Skills Shortage – A Cross-Industry Issue” examines this issue in more detail.



HELMSMAN

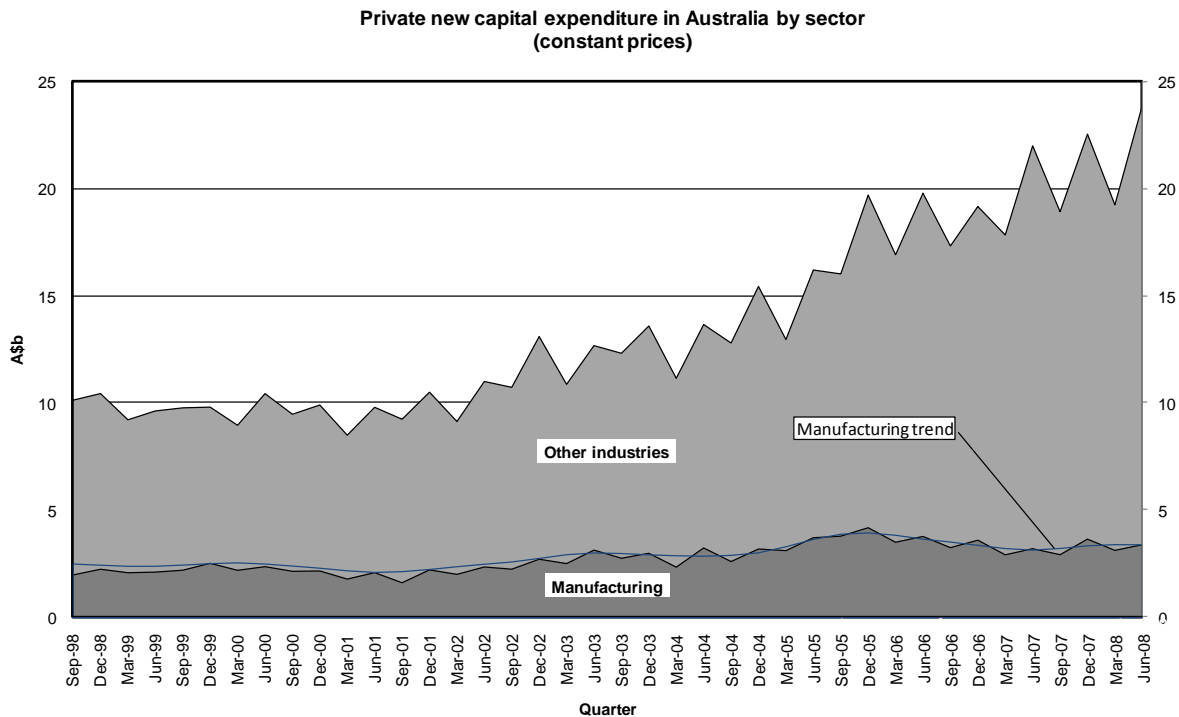
MANUFACTURING

Manufacturing's share of private new capital investment has slipped from around 23% at the beginning of the decade to around 16% currently. This is reflected in recent high profile plant closures such as the Mitsubishi assembly line in Adelaide and in calls by the industry to defer plans to reduce tariff barriers.

The difficulties of the manufacturing sector are more to do with long-term structural reform than they are with current economic conditions. Throughout the last 17 years of continuous economic growth in Australia and before China became the manufacturing centre of the world, the sector had begun to move away from low value added or scale driven industries to higher value "elaborately transformed manufactures" where scale and distance from major markets matter less.

Ultimately, the manufacturing sector will shrink down to a number of niche industries that are either naturally sheltered from imports or are based on specific competitive advantages such as being close to the source of the raw material (eg, food manufacturing, aluminium) or the intellectual capital (eg, bionic ear, medical diagnostics). The manufacturers that survive will compete on innovation rather than cost.

The project management challenge in the manufacturing sector will therefore increasingly become one of rapidly commercialising new ideas and technologies. The Helmsman Institute believes that the venture capital industry would benefit from more rigorous project management and that in many cases start-up companies should be treated as projects.





CONCLUSIONS AND RECOMMENDATIONS

This edition of the Helmsman Institute Capital Projects Report has shown that overall investment in capital projects remains strong, despite slowdowns in the domestic and international economies.

Three sectors in particular are driving the continued high levels of capital investment – public infrastructure, mining and defence. The data suggests that investment levels in these sectors are being constrained by project delivery capabilities rather than the appetite for investment. Planned investments are being spread across future years to “load level” project resources and a significant proportion of projects are being reprogrammed into the future each year due to delays in delivery.

While additional project management resources may be of assistance in increasing project delivery capacity and reducing delays, the Helmsman Institute believes that simply doing “more of the same” will not solve the issue, particularly where large complex projects are involved. In fact, more rigorously applying standard project management methodologies in the face of complexity, ambiguity and cultural resistance is usually counter-productive. To some extent the project management profession has become a victim of its own success in documenting and codifying the mechanical aspects of project management. Many project managers have come to believe that applying these “tick the box” methodologies is “project management”, rather than seeing them as tools to assist in the delivery of project outcomes.

The Helmsman Institute recommends that project management for large complex projects focus more on accelerating delivery of outcomes, actively reducing risk and authentically aligning stakeholders - and less on adhering to process for its own sake. Based on studies of a number of major project resets the Helmsman Institute believes that delivery of most major projects can be accelerated by 10-20%, even in the face of apparent external resource constraints and even for well advanced in-flight projects.

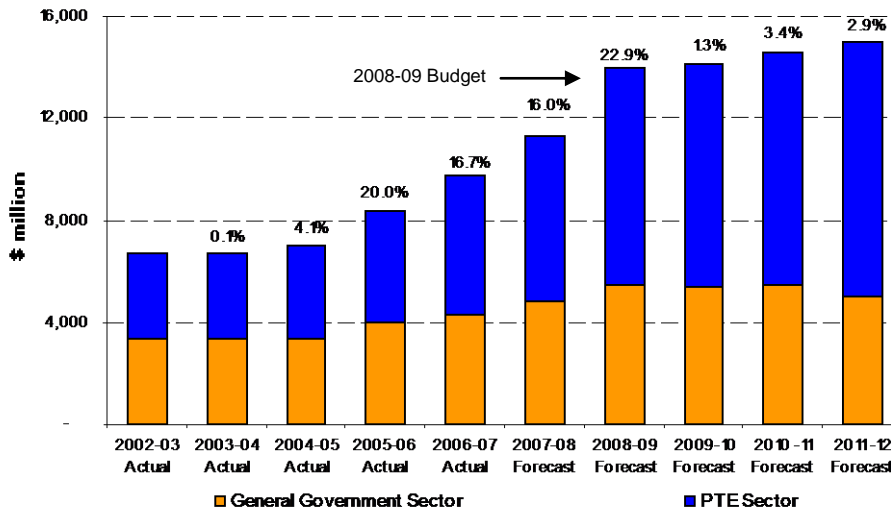
The Helmsman Institute has also found that the costs of delays and the benefits of early delivery are generally under-estimated – sometimes to the extent where adherence to the project budget undermines the economic rationale for the project. Given the size of the capital investments being made in these sectors and the benefits expected to flow from them it is somewhat surprising that so little is being invested in developing the required project delivery capabilities.

The Helmsman Institute believes that relatively small investments in building advanced project execution capabilities to accelerate project delivery will yield very large paybacks for the organisations involved and for the Australian economy.

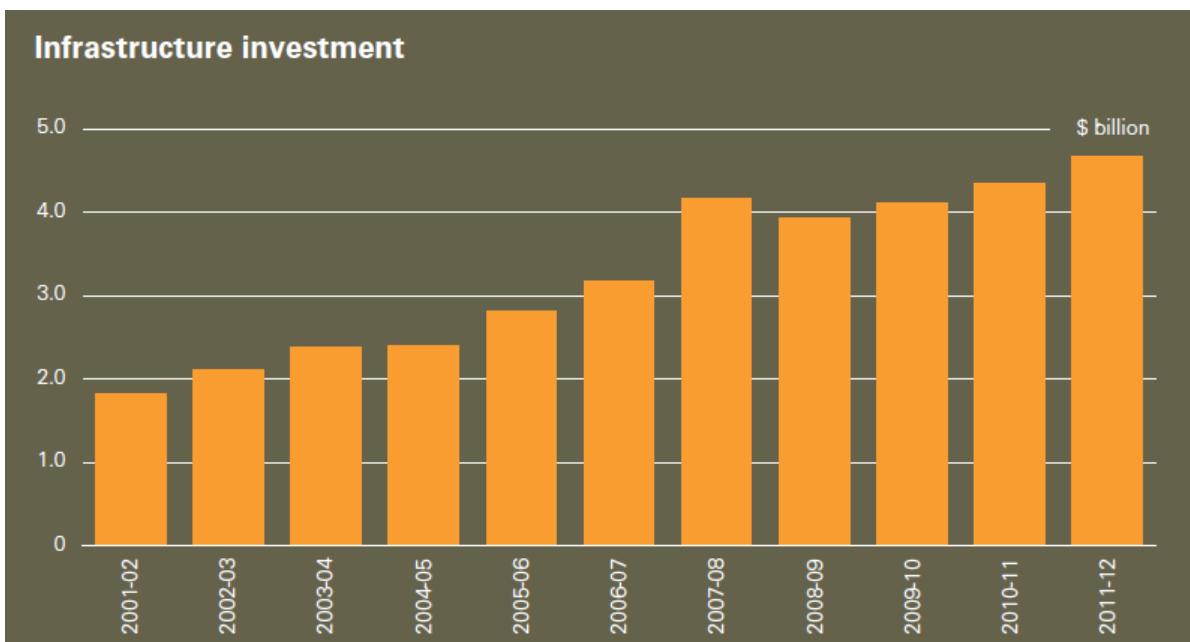


APPENDIX A: STATE PUBLIC INFRASTRUCTURE INVESTMENT

NEW SOUTH WALES



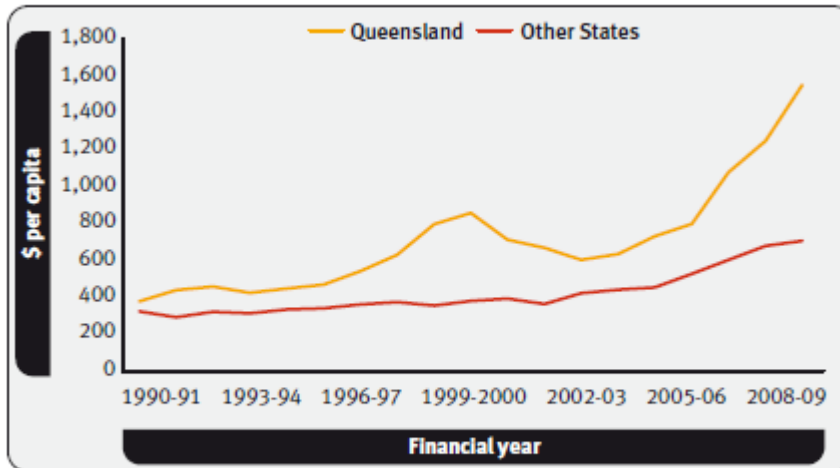
VICTORIA



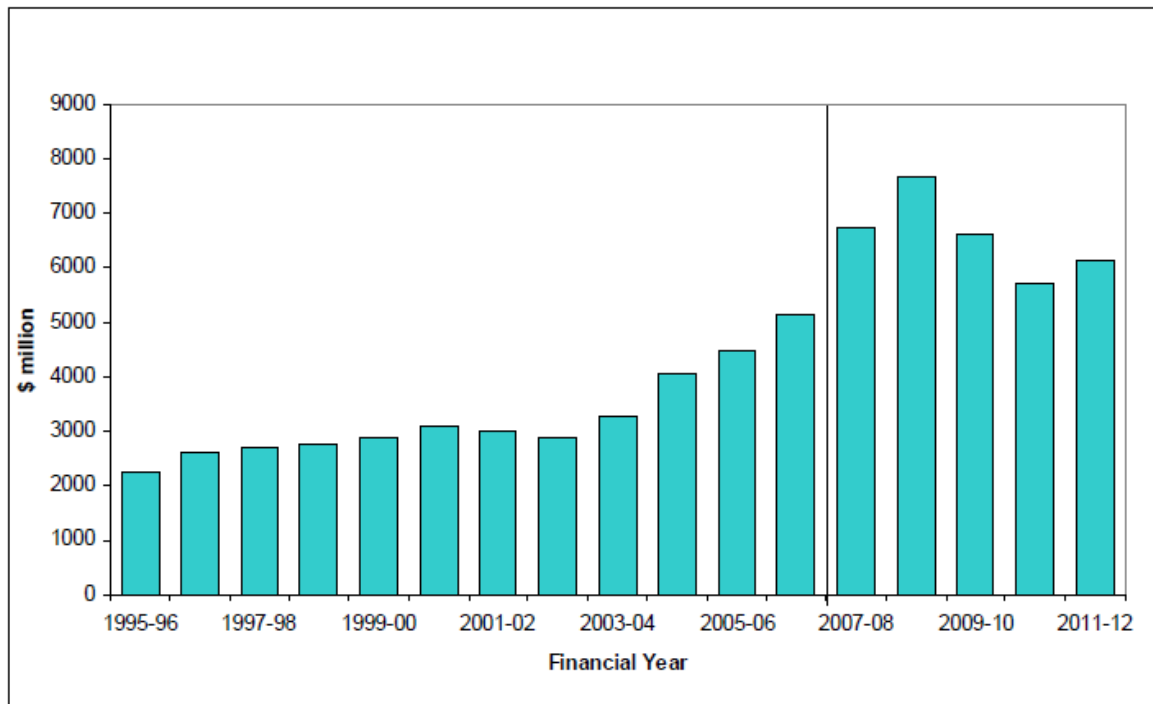


QUEENSLAND

Budget spending on capital works



Sources: General Government purchases of non-financial assets; Unpublished ABS 5512.0 and 3101.0; various State Budget papers and State Budget Mid Year Reviews/ Budget Updates; population estimates from Australian Government Budget Paper No.3, 2008-09.

**HELMSMAN****WESTERN AUSTRALIA**

- Record Capital Works Program for 2008-09 of \$7.6 billion, including:
 - \$1.2 billion on electricity infrastructure to meet the needs of our rapidly growing economy, including commencement of over 500km of new transmission lines;
 - \$1.1 billion on water infrastructure, including commencement of the \$955 million Southern Seawater Desalination Plant;
 - \$810 million on roads;
 - \$502 million on hospitals and other health facilities;
 - \$377 million on ports to expand export capacity; and
 - \$347 million on schools and TAFE colleges.
- Massive \$26.1 billion Capital Works Program over the next four years, including:
 - New major stadium at Kitchener Park;
 - New museum on the former East Perth power station site; and
 - Perth Waterfront development.



APPENDIX B: ABS 5625.0 NEW PRIVATE CAPITAL EXPENDITURE - SCOPE

The Survey of New Capital Expenditure includes the following industries classified according to the Australian and New Zealand Standard Industrial Classification, ANZSIC, 1993:

- Mining (Division B)
- Manufacturing (Division C)
- Other selected industries:
 - Construction (Division E)
 - Wholesale trade (Division F)
 - Retail trade (Division G)
 - Transport and storage (Division I)
 - Finance and insurance (Division K, but excluding Superannuation funds (Class 7412))
 - Property and business services (Division L)
 - Other selected services:
 - Electricity, gas and water (Division D)
 - Accommodation, cafes and restaurants (Division H)
 - Communication services (Division J)
 - Cultural and recreational services (Division P)
 - Personal services (Subdivision 95)

The survey excludes the following industries:

- Agriculture, forestry and fishing (Division A)
- Government administration and defence (Division M)
- Superannuation funds (Class 7412)
- Education (Division N)
- Health and community services (Division O)
- Other services (Subdivision 96)

The scope excludes public sector business units (i.e. all departments, authorities and other organisations owned and controlled by Commonwealth, State and Local Government).