Compendium of reports for Australia’s Comparative Advantage

Purpose

The purpose of this Compendium is to share more widely the early descriptive research for this project on the range of extant reports that do exist on major aspects of Australia's comparative advantages and securing Australia's future. Substantial interest in learning of these reports and obtaining convenient access to them has been evident to the Expert Working Group for this project. In turn any gaps in the Compendium may be identified and drawn to the attention of the Project group.

Contact: Dr Nitin Gupta, nitin.gupta@anu.edu.au

Disclaimer

The information contained in this document is for information purposes only. This paper does not represent the views of ACOLA, ASSA or the Expert Working Group.

© Australian Council of Learned Academies (ACOLA)
Securing Australia’s Future

Securing Australia’s Future is a three-year research program funded by the Australian Research Council and conducted by the four Learned Academies through the Australian Council of Learned Academies for PMSEIC, through the Office of the Chief Scientist. Securing Australia’s Future delivers research-based evidence and findings to support policy development in areas of importance to Australia’s future.

Project Aims

The opportunities and challenges of an economy in transition are a key issue for Australia as it faces a rapidly changing global environment. This multidisciplinary research program will identify Australia’s unique strengths and comparative advantages; establish which contexts and policy settings encourage creativity, adaptability and innovation; and explore the natural, social, geographical, economic, cultural and scientific attributes and capabilities needed to thrive as a nation.

Expert Working Group

Professor Glenn Withers AO, FASSA (Chair)

Peter Laver AM, FTSE, HonFIEAust, FAusIMM (Deputy)

Professor Graham Farquhar AO, FAA, FRS

Professor Chris Gibson

Dr Sally Gras

Professor Joseph Lo Bianco AM, FAHA

Professor Rodney Maddock

Dr John Prescott AC, FTSE
# Table of Contents

**Executive Summary** ...................................................................................................................... 4

**List of Reviewed Reports and Links** ............................................................................................... 5

**Introduction** ................................................................................................................................ 7

**Drivers and Enablers Framework** ............................................................................................... 10

**General or Comprehensive reports** ............................................................................................. 13

- *Sustainable Australia 2013: Conversations with the Future (2013)* ................................................. 14
- *Australia’s Competitiveness: From lucky country to competitive country (2013)* ......................... 15
- *Productivity Policies: The ‘to-do’ list (2012)* ...................................................................................... 16
- *Negotiating our Future: Living scenarios for Australia to 2050 (2012)* ............................................ 17
- *Beyond the Boom: Australia’s productivity imperative (2012)* ....................................................... 18
- *Game Changers (2012)* ...................................................................................................................... 19
- *Australia in the Asian Century (2011)* ............................................................................................ 19
- *Intergenerational Report (2010)* ..................................................................................................... 21
- *Australia Economic Survey (2010, 2012)* ....................................................................................... 21

**Issue-specific Reports** ................................................................................................................. 24

- *Culture and Creativity* ....................................................................................................................... 24
  - *Creative Australia: National cultural policy (2013)* ........................................................................ 24
- *Financial Sector* ................................................................................................................................. 25
  - *Funding Australia’s Future (2013)* ................................................................................................ 25
- *Infrastructure Development* ............................................................................................................ 27
  - *National Infrastructure Plan (2013)* ............................................................................................. 27
  - *Pipeline or Pipe Dream (2012)* ..................................................................................................... 28
- *Education and Skills Development* .................................................................................................. 30
  - *Health of Australian Science (2012)* ........................................................................................... 31
  - *Skills for all Australians (SFAA, 2012)* ......................................................................................... 32
  - *Higher Education Base Funding Review (2011)* ........................................................................ 33
  - *Higher Education Review (2008)* ............................................................................................... 33
Australia’s International Education Sector ................................................................................... 35
Australia – Educating globally (2013)....................................................................................... 35
Strategic Review of the Student Visa Programme (2011).......................................................... 36
Stronger, simpler, smarter ESOS: Supporting international students (2010)............................... 36
Leadership and Management Quality....................................................................................... 38
Karpin Report Revisited (2011) ............................................................................................... 38
Management Matters in Australia: Just how productive are we? (2009) ................................. 38
Innovation and Productivity ...................................................................................................... 40
Excellence in Research for Australia (ERA) 2012: National Report ........................................ 40
Australian Innovations Systems Report (2012) ....................................................................... 40
Smarter Manufacturing for Smarter Australia (2012) .............................................................. 41
Productivity Challenge (2011) .............................................................................................. 41
Australian Science in a changing world (2011) ................................................................. 42
Internationalisation of Australian Science (2010) ................................................................. 42
Powering Ideas: An innovation agenda for the 21st century (2009) ....................................... 43
Venturous Australia: Building strength in innovation (2008) .............................................. 43
Mapping Australian Science and Innovation (2003) .............................................................. 44
Climate Change ...................................................................................................................... 46
Critical Decade 2013: Climate change science, risks, and responses (2013) ............................ 46
Tax Policy and Reforms ........................................................................................................... 48
Preparing for a Better Future (2011) ................................................................................... 48
Conclusions ............................................................................................................................ 49
Other Related and Recent Reports and Links............................................................................. 50
Executive Summary

This compendium of reports is the first report prepared for ‘Australia’s Comparative Advantages’ (ACA), one of a series of projects being undertaken as part of ‘Securing Australia’s Future’ – a $10 million investment in a series of strategic research programs selected by the Prime Ministers Science, Engineering and Innovation Council (PMSEIC) and the Chief Scientist and coordinated by the Australian Council of Learned Academies (ACOLA).

It presents a comprehensive thematic overview of existing reports that deal with a multitude of issues relevant to Australia’s future wellbeing. The purpose of this Compendium is to get a good stocktake of the scope of the work that has already been done, and of the gaps therein, to help define the scope of the current project in the most targeted and effective manner possible.

This review yielded four main insights:

First, there is an apparent imbalance in the coverage of topics, with some topics like education and innovation receiving far greater policy report attention compared with others such as cultural issues.

Second, barring a few exceptions, most reports are individually quite narrow in their scope and in the range of methodologies employed. Furthermore, they vary considerably in their purpose, complexity, and advocacy role. This Compendium seeks to bring all the different reports into a common, coherent framework, which in turn allows an evaluation of their relative importance from the perspective of the current project.

Third, almost all reports emphasise the importance of emerging global mega-trends that are likely to shape Australia’s competitive and social landscape over the next few decades. The successful repositioning of the Australia for the 21st century will depend on how well it responds to these emerging trends.

Finally, the reports call for Australia to play to its strengths and comparative advantages, but identification of these strengths is still driven as much by anecdotal and subjective factors than by objective analysis and evidence. There is therefore major scope for a significant contribution from this ACA project.
## List of Reviewed Reports and Links

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Publication</th>
<th>Year</th>
<th>Report Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Funding Australia’s Future</td>
<td>2013</td>
<td><a href="http://fundingaustraliasfuture.com/">http://fundingaustraliasfuture.com/</a></td>
</tr>
<tr>
<td>SI No.</td>
<td>Publication</td>
<td>Year</td>
<td>Report Link</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
Introduction

This compendium of reports is the first report prepared for the “Australia’s Comparative Advantage” (ACA) project, which is part of a broader “Securing Australia’s Future” (SAF) project currently underway under the aegis of the Office of the Chief Scientist.

The purpose of this compendium is twofold. First, it reviews selected key reports of recent years, on basic issues of importance to Australia’s economy and the nation’s wider future. In doing so, it presents a succinct stocktake of the current “state of thinking” that relates to these topics. Second, it seeks to identify common themes and gaps across these reports, in order to also help define the scope and strategy of the current project on identifying Australia’s comparative advantages. This review therefore is to help avoid unnecessary repetition of work, and also make that work more relevant and meaningful.

An important caveat about the reports selected for this review is in order. The number of reports relating to all the various aspects of comparative advantage are too numerous to be reviewed in depth here. Comparative advantage and its close relative competitive advantage can embrace much that makes actions what they are and can be. Consequently, the selection included in this compendium is an illustrative sample of the various relevant issues, the key arguments therein, and the types and sources of reports that addressed these matters, but they are carefully selected to help understand the ambit and nature of contemporary formal examination of the pertinent issues.

This compendium therefore seeks to follow a consistent template structure in reviewing each of these reports. The template encapsulates some or all of the following, depending on the content of each report:

- Key goal(s) and/or purpose of the report
- Timeframe and authorship
- Key policy issues, including those needing urgent attention
- Key conclusions
- Empirical framework and data used
- Relevance to the current project on Australia’s comparative advantage
- General nature of the report and other insights, if applicable

Four points about these reviewed reports become immediately apparent and are worth highlighting:

First, barring a few exceptions, most of these reports are individually quite narrow in both their scope and in the range of methodologies on which their analysis and results are based. The various methodologies used across reports include direct consultations and focus groups, surveys, invited submissions, scenario analysis, empirical econometrics, and modelling, etc. The approach followed in
these reports is in stark contrast to the current project, whose mandate is to have a broad, empirically-robust, and multi-disciplinary assessment of Australia's national strengths.

Second, these reports vary considerably in their coverage, complexity, and advocacy role. Some reports are purely descriptive while others have a significant prescriptive element. Reports prepared by international organisations, or by government agencies or as independent reviews do tend to convey substantial objectivity. Policy documents or reports by industry organisations, by contrast, sometime do seem more self-serving, and aimed at more openly influencing policy in their favour.

Third, an overarching emphasis on key global mega-trends is common to almost all reports. These trends drive global dynamics and could significantly alter Australia's competitive, geopolitical, environmental, and socioeconomic landscape. The following key trends keep recurring across the reports:

- Rise of Asia, particularly India and China
- Global demand for resources and the resultant terms of trade boom
- Increasing opportunity for uptake of a wide range of new technologies
- Increased and unprecedented IT connectivity in particular
- An ageing, yet for Australia increasingly diverse, domestic populace

Fourth, these reports call for Australia to play to its strengths and competitive advantages in order to respond to these trends and maintain its prosperity and national well-being over the long term. The following strengths are frequently mentioned:

- A vibrant, multi-cultural society
- An excellent education system, underpinned by world-class research
- A mutually-reinforcing troika of rule of law, a strong democratic system, and stable & efficient institutions
- One of the best resource endowments in the world

The identification of these strengths, however, is as much based on anecdotal or subjective observation as upon systematic or objective evidence. Moreover, these reports typically neither evaluate the evolution or effectiveness of these strengths relative to each other, nor, in many cases, how they can be sustained or enhanced. Finally, the reports do not identify the new comparative advantages that Australia would need to acquire in response to this rapidly-changing global environment, or how it should go about doing so, including by redress in areas of major national comparative disadvantage. In short, these analyses of comparative advantage, while insightful, cannot fully provide a sufficient basis for long-term, evidence-based policy.

Nevertheless, taken together, these reports do of course present a good opportunity for informing the present project. They illustrate the various types of significant issues for Australia that have been “addressed” over the last few years, and the many ways in which this has been done. Collectively these represent a respectable smorgasbord of illustrative examples, themes, arguments, and methodologies to guide the project. At the very least, they are a ready reference against which to evaluate the present project’s further contribution.
It is useful to also view them under an overall coherent, “Drivers and Enablers” framework that helps illustrate the challenges and capabilities for Australia in attaining the goal of sustainable national well-being. Figure 1 illustrates how the various reports considered can be brought together in such a common contextual framework, and evaluated in a manner that adds value to securing Australia’s future.

It is envisaged that the present ACA project will meet its mandate by investigating a broader range of issues than is typically attempted, and by using a multitude of methods used by the various disciplines of the Learned Academies. This broad scope of coverage and its multi-disciplinary empirical strategy is intended as a core innovation and value-add from this project.
Drivers-and-Enablers Framework

**GLOBAL**
- Asia Growth
- Population Growth
- Climate Change
- Technological revolution

**AUSTRALIA**
- Ageing population
- Cultural diversity
- Growing cities
- Changing attitudes (work and family roles)

**External Drivers**

**National Wellbeing**
(Social, Economic, Environmental)

**Innovation**

**Leadership and Management**

**Institutions and Culture**

**Infrastructure**

**Regulations**

**Financial Sector/Investments**

**Education and Skills**

Figure: 1 Drivers and Enablers Framework for an Innovation-based Knowledge Economy
**Explanation of Figure 1 terms**

**External Drivers**

The global and Australian trends that are likely to shape the competitive landscape over the next 5-7 decades. These trends represent the opportunities and threats that Australia must respond to as it seeks to position itself for the 21st century.

**National Wellbeing**

This reflects the vision of sustainable national prosperity and welfare, based on an adaptive, innovative knowledge economy, and encompassing social, economic, and environmental dimensions.

**Innovation**

As indicated in the vision above, innovation is the primary driver of future sustainable national prosperity in a knowledge-intensive economy. All other ‘enablers’ must come together to foster and support such innovation.

**Leadership and Management**

It is at the firm-level that economic activity and competition actually take place. Therefore, it must be the firm’s management and leadership that bear the responsibility for its productive and successful performance through its business decisions, and its ability to use all the resources at its disposal to exploit opportunities and alleviate threats. In essence, management must act as the catalyst that brings together the collective power of all the enablers in creative and innovative ways, and transforms them into profitable performance.

**The ‘Enablers’**

**Culture and Institutions:** The fundamental cultural values and principles of any society shape its institutions, and are in turn validated and reinforced by them. The basic principles of freedom, fairness, and personal responsibility characterise Australian cultural values, and are enshrined in the nation’s independent legal system and democratic form of government.

**Infrastructure:** The basic foundations for a productive society, infrastructure facilitates the production and distribution of goods and services in an economy. The various types of infrastructure include energy, water, transport, ports and freight, and digital. Social infrastructure is also embraced, as with social welfare and health systems.

**Regulations:** The laws and procedures that prescribe or proscribe certain types of activities. They also affect firm entry and exit, ability of firms to achieve scale, taxation, and labour relations. Well-designed regulations can help unleash the creative and productive potential in any society, while poorly-designed ones can stifle them.
**Investments and Financial System:** A healthy, stable, and well-regulated financial system provides the funds that facilitate productive investment and transactions in an economy.

**Education:** An effective education system imparts the knowledge and skills that allow people to become productive contributors to national prosperity. It allows individuals and businesses to exploit new opportunities, engage more effectively with the global community, and better realize their own aspirations.
General or Comprehensive reports


This recent report by the Business Council of Australia (BCA) is presented as one of the most comprehensive and broad-based policy agendas to date to help Australia deal with future socio-economic challenges, and realise a stated goal of sustainable and equitable national prosperity. The report further articulates well-managed growth to be the primary driver of national prosperity. In doing so, it emphasises the central importance of the business sector for the goal of wealth creation. The nature of the BCA itself, representing as it does the considered views of the nation’s 100 largest businesses across a range of industries, lends significance to its discussion.

This report, like several others before it, argues that the looming end of the resources boom and other external changes will necessitate a transition of the Australian economy to one less dependent on resources. Moreover, this boom masked a significant decline in productivity which, it is argued, created policy complacency and the current imperative for proactive remedy. While several other reports have also called for a comprehensive policy programme to facilitate such a transition, this report is one of only two (the other being the *Australia in the Asian Century* report) that actually offers such a multi-dimensional and broad-based prescriptive framework to help achieve this goal. By doing so, this report makes a significant contribution, in its coverage, to the debate on how best to prepare Australia for the 21st-century challenges and opportunities.

The stated aim of this report is to initiate discussion about key policy reform areas. To this end, it identifies 9 areas requiring major reforms, and presents 93 specific recommendations, to be implemented in 3 stages over a 10-year period. These priority areas¹ are:

1. Tax and fiscal policy, and the federation
2. Growth in population and cities
3. Infrastructure
4. Human capital and workplace relations
5. Regulation and governance
6. Global engagement
7. Strength, stability, and competitiveness of the financial system
8. Energy policy
9. Innovation-friendly environment and systems

In addition, the report identified five main external trends that will drive changes in the socio-economic environment:

1. Rise of emerging economies
2. Technologies and digitisation
3. Increasing reliance on natural resources
4. Restructuring of the Australian economy

¹ The list is paraphrased from the original list contained in the BCA report.
5. An ageing and growing population

These are consistent with the trends identified by many other reports.

Two notable limitations of this report nevertheless do stand out, its comprehensive nature notwithstanding. First, the stated goal of national prosperity is narrower than the one promulgated by the Treasury, which calls for national wellbeing, based on social, economic, and environmental dimensions.

Second, while the report’s explicit call for equitable and inclusive growth is commendable, and its emphasis on the importance of the business sector appropriate, its arguments naturally and inevitably do reflect the views and interests of the business sector, at the expense of any alternative views from a wider community where these are at odds with those of businesses. Workplace relations and regulatory overreach are cited specifically by BCA itself as two examples of how alternative perspectives of labour and community groups diverge and, in view of BCA, stifle growth and require redress.

The report drew on commissioned work by external consultancies, notably McKinsey and Deloitte Access Economics.

**Sustainable Australia 2013: Conversations with the Future (2013)**

This is the first report of the National Sustainability Council, with a stated objective of “providing a comprehensive body of evidence on which to base a national conversation about the kind of country Australians want to create for future generations”. As with many other reports, this too discussed the key issues facing Australia in the 21st century and the opportunities commonly associated with the rise of Asia, namely, the demand for Australian commodities, agriculture, and a range of services by a growing Asian middle class. The report made two primary contributions:

First, it assessed Australia’s evolution as a nation, from a sustainability perspective, over the past 30 years. This evolution was mapped against a new set of National Sustainability Indicators (NSI), which the Council developed in consultation with key data agencies, experts, and other stakeholders; and divided into social, economic, and environmental categories. It also underscored the importance of the principles of social, economic, and environmental sustainability for overall effectiveness of the goal of national prosperity. Sustainability in turn requires equity as an essential pre-requisite. The report therefore stated unequivocally that no society aiming for sustained prosperity can disregard with impunity the principle of equity. The development of the NSI and the articulation of the link between equity and national prosperity were important ‘value-adds’ of this report.

In addition to presenting the NSI, it provided the context for some of the key issues facing Australia: innovation and engagement, ageing population and the rising health costs, social inequity and disadvantage, changes in traditional work and family roles, growing cities, increasing economic importance of regional area industries (mining, tourism, and agriculture), climate change, and environmental implications of growth.
The second notable hallmark of this report was its emphasis on holistic and balanced thinking, as opposed to piecemeal evaluation of individual components. Three pertinent examples from the report best illustrated this:

1. “Integration of new technology into our daily lives will provide opportunities for innovation, new jobs, and medical breakthroughs, but will impact upon our social relationships and family life.”
2. “Efforts to replenish the population through increased migration will create its own social cohesion challenges. The imperative to clarify, reinforce, and adhere to the national principles and values has never been greater.”
3. “Climate change will have implications far beyond just the environmental domain, by affecting quality of life, the welfare and culture of communities, what people eat and drink (including where it comes from and how much it costs), and the illnesses that afflict people. Each of these will have significant social as well as economic implications.”

This descriptive report encompassed a multi-dimensional focus and drew primarily on secondary data. It made some interesting, though at times untested, assertions and hypotheses. Subjecting some of these to empirical testing could present a useful opportunity for the current ACA project. Moreover, the principle of holistic thinking could help guide some of the project empirical analysis, especially that relating to econometric modelling.

**Australia’s Competitiveness: From lucky country to competitive country (2013)**

This recently-released report by CPA Australia is avowedly the most comprehensive assessment undertaken to date of Australia current and potential competitive advantages. It is also close in scope to the current project on identifying Australia’s comparative advantages, and is useful due to two particular reasons.

First, it was based on a survey of nationally- and overseas-based members of CPA Australia, on what they perceive to be Australia’s strengths and weaknesses. CPA Australia received over 6000 responses to the survey from all over the world. Comprehensive global surveys such as those by Institute for Management Development (IMD) and World Economic Forum (WEF), both Switzerland-based organisations, make assessments of Australia based on far fewer responses of only Australia-based respondents. This global perspective on Australia was therefore a first of its kind. That said, the survey is of members of a particular professional body.

Second, the report’s analysis was done at the industry level, rather than at the aggregate level, since it is really between firms (within broad industry groups) that competition takes place. The notion of aggregate competitiveness was seen as less meaningful from an “actionable” perspective.

The report was almost entirely of a comparative nature, with the comparisons based primarily on first-hand survey results, and complemented by a broad array of global comparative studies and statistics. Each of the chapters contained a specific theme, and identified a set of key issues pertaining to those themes that Australia would need to address in order to realise its full growth.
potential. This list was based on the opinions of business participants, reflected through survey results or more direct interactions. Therefore, the current project could build on these insights. Specifically, this report could make a useful contribution to the overall development of the current project by helping to identify issues that could be further empirically investigated.

In addition to the survey, the report utilised a proprietary five-level Competitiveness Framework, developed by one of the report’s authors. Each of the levels represented a successively higher level of aggregation, going from firm-level to supra-national level drivers of competitiveness. A comprehensive range of competitiveness drivers in each of the levels were analysed. The results helped identify the different set of drivers that were most important for the different industry groups.

While the report is highly insightful, it had two arguable shortcomings for present purposes. First, it was based only on survey results and secondary research. There was an obvious need for a strong multi-disciplinary, empirical research base, particularly in relation to projections, etc., which the current project could develop. Second, it tended to suggest solutions in a rather ad hoc, even cursory manner, without a systematic analysis of cost-benefit considerations or feasibility studies, etc. or of implementation issues.

Productivity Policies: The ‘to-do’ list (2012)

This speech by Dr. Gary Banks, shortly before he stepped down as Chairman of the Productivity Commission, elucidated the productivity reforms agenda for Australia. Unlike the reports reviewed for this Compendium, the inclusion of this speech is necessitated by the prominence it has gained within political and policy circles. Moreover, instead of just enumerating a long list of policy areas needing attention, this speech articulated a unifying framework to categorise the various policies into different groups and evaluate their relative importance and impacts. This is the most important value-add of this speech.

Two important and related conclusions arose from the speech. First, it took a somewhat cautiously optimistic view of Australia’s productivity decline (in the era of resources-led growth), unlike other reports whose reactions tended to be more ‘alarmist’. Its primary contention was that Australia’s productivity slide, while real, had much to do with cyclical and structural forces that were temporary and reversible. Some of this decline could be expected to correct itself as the underlying forces abated, and would therefore require little policy intervention. However, other components of overall productivity decline could not be directly attributed to reversible causes, and thus needed timely and proactive policy engagement. Differentiating between the two was critical for effective policies.

Second, the wider policy reform agenda needed to be implemented in an integrated, rather than piecemeal, manner, so as to avoid the negative unintended consequences of any single policy reform. Such an integrated reform agenda should in turn be flexible and adaptive, given the structural pressures of a multi-speed economy.

---

2 This speech was given at the Economic and Social Outlook Conference, ‘Securing the Future’ on 1 November 2012. For full text of the speech, see http://www.pc.gov.au/speeches/gary-banks/productivity-policies.
The speech put the onus of productivity performance on enterprise management, since it is at the firm-level that the economic activity actually takes place. That said, government policies can and do influence enterprise productivity through three broad types of policies:

1. **Incentive policies**: these affect the external pressures and disciplines to perform well.
2. **Capability policies**: the HR and knowledge systems to devise productivity-enhancing changes, and the institutions and infrastructure to support those. Within this category, four different lists were further identified (human capital, infrastructure, innovations, and government services)
3. **Flexibility policies**: the ability to make necessary operational changes. These policies affect workplace regulations and other regulatory constraints.

An additional policy area that cuts through all three categories is that of taxation reform which, while important, has received little policy attention.

This speech, along with the Henry report (reviewed below), provide the most cogent frameworks for evaluating Australian policies. As such, they could prove useful in guiding the structure, analysis, and conclusions of the current project.

**Negotiating our Future: Living scenarios for Australia to 2050 (2012)**

This report by the Australian Academy of Science was developed out of a workshop at Bowral, NSW in July 2011. It developed multiple scenarios, all till 2050, and evaluated their potential impact against the principles of environmental sustainability and social equity. These two principles were in turn presented in the broader context of an increasingly globalised world, inter-connected to an unprecedented degree by “trade, finance, multinational corporate control, information technology, social networks, human migration, transfers of plants, animals, and their genes, and the spread of infectious diseases and pests”. ³

Using a framework of Drivers and Shapers, Assumptions, and Critical Uncertainties; the analysis identified three “families” of scenarios, representing response strategies. These related to:

- **Governance**: both in terms of external factors that might have an impact, and the government policies that might in the next few decades influence responses and achievements with regard to those external factors.
- **Climate change action**: the impact on the environment, and the responses thereof, to the tradeoff between economic and environmental considerations.
- **Complexification**: how the steadily increasing complexity of life will affect outcomes.

The absence of any substantial economic focus was a notable feature of this work. In fact, economic issues were considered important only insofar as they impacted natural resource use and the attendant environmental pressures. The report also implicitly assumed a fundamental conflict between the goal of economic growth and the principles of social cohesion and

---

³ Pp. 2.
sustainability, and that achieving all would inherently require a trade-off. This assumption requires explicit examination and the evaluation of possible positive sum options. The analysis in this report did validate the appropriateness of scenario analysis as a credible research strategy for the current project.

**Beyond the Boom: Australia’s productivity imperative (2012)**

This independent report by the McKinsey Global Institute (MGI), a unit of the major international consultancy, presented a comprehensive assessment of the challenges associated with Australia’s multi-speed economy, and the steps that must be taken to address these. Contrary to a common characterisation of Australia as a “two-speed” economy, the MGI report treated it as a four-part economy, comprising

- Resources
- Manufacturing
- Local Services, and
- Resource Rider sectors

The key argument in this report, as in many others, was that Australia’s resources boom belied a clear, significant decline in national productivity. Despite unprecedented capital investments, capital productivity fell sharply, to become the biggest drag on growth. Also, more than half the recent growth is due to temporary boom-time effects, and hence unsustainable. It called for timely proactive action, when the benefits of the resources boom were still accruing, and when the boom could help mitigate some of the pain inherent in the adjustment process.

In other words, Australia must ensure its future prosperity by improving its own productivity, which is a matter of choice and within its own control, rather than relying on high global resource prices and demand growth, which were beyond its control and increasingly uncertain.

The analysis was based on a strong empirical framework, involving econometrics, scenario analysis, and case studies. It developed a new model of “growth accounting” that accounted for the investment and productivity effects of the resources boom. A key value-added of this report was its distinction between labour and capital productivity, and how the unprecedented investment in mining and energy sectors skewed the balance in favour of capital productivity. Moreover, it developed four different scenarios till 2017, followed by sector-specific case studies. The four scenarios were developed on alternative outcomes for terms of trade and investments (holding firm or adjusting downwards) and capital and labour productivity (staying low or improving over time).

This report addressed an issue (productivity) that is attracting the increasing attention of both policy makers and researchers in Australia. Furthermore, it was based on a clear multi-disciplinary empirical strategy that could serve as a model for the current project on Australia’s comparative advantages. However, the short time frame of only five years used for the analyses limits the report’s longer term effectiveness. Policy must also account for a far longer timeframe if the fundamental problems are to be addressed sustainably.
Game Changers (2012)

This relatively brief and descriptive report by the Grattan Institute elucidated the importance of prioritising reforms policies, and listed three economic reform priorities that could be “game changers” for Australia, i.e. policies with largest and lasting benefits for the Australian economy over the long term. Grattan Institute estimated that each of these policies could potentially increase the size of the Australian GDP by around $2.5 billion, or one percent. The three policies areas so designated were:

- Tax mix reform
- Female workforce participation
- Older people’s workforce participation

Another notable feature of the report, from the perspective of the current project, was its call for an empirical estimation of the economic impact of The Fair Work Act (FWA) on workplace flexibility and thus economic growth. Business groups have cited the myriad ways in which, according to their view, increased union power (a direct consequence of the FWA) restricts flexibility and progressive decision-making by businesses.

An alternative report of a committee chaired by Ron McCallum for the Labour government came to a different conclusion (see elsewhere in this survey). Resolution of the issue of whether labour relations are a source of comparative advantage or disadvantage is important for this project.

Questions have been raised also over the estimation methods used to estimate impact, since they came predominantly from extant studies and therefore were not rendered fully consistent. This applied especially to areas such as immigration and education. But as a stocktake in a consistent overall framework the report was a valuable review, and it can be added to the list by outgoing Productivity Commission Chair, Gary Banks, as a useful assemblage of major policy options for enhancing national welfare.4

Australia in the Asian Century (2011)

This is a highly-cited Treasury White Paper published in 2012, and is commonly known as the Henry Report. It presented a comprehensive exposition of the familiar theme of rise of Asia, and of the consequent implications for Australia till 2025.

The report articulated the long-term national goal that “By 2025, Australia will be a more prosperous and resilient nation, fully part of the region and open to the world”, and proposed a policy framework aimed at helping Australia thrive in the Asian century. The framework itself provided a strategic overview of all the key challenges and opportunities facing Australia over the next decade-and-a-half, the broad policy goals for dealing with these, and the various specific policy priorities in each of these broad areas. The five broad policy goals were:

1. A productive and resilient Australian economy

2. Building capabilities  
3. Operating and connecting in growing Asian markets  
4. Building sustainable security in the region  
5. Deeper and broader relationships

These five policy areas were presented as pieces of a jigsaw puzzle that must come together if Australia is to achieve the above-mentioned long-term goal.

Methodologically, the Henry report is a highly descriptive document, making extensive use of existing literature, case studies, and illustrative examples. Its primary value was as a “one-stop-shop” resource that shows the relative place (and importance) of different policies in the “big picture”, and how these fit together to help achieve the ultimate goal.

Two observations about this proposed framework are in order: first, this report reversed the sequencing observed in other reports. Other reports generally treated the rise of Asia as one of many trends affecting Australia, and as a contextual background for their specific policy issues, analyses, and recommendations. This report instead put the rise of Asia front-and-center, and then discussed and evaluated the different specific policies in terms of how well they could help Australia cope with this trend. Second, not a single policy area considered for this project has violated or exceeded the framework proposed in this report; an indication of the robustness of the framework itself. In fact, almost all of the policies can be broadly categorised into one of the first two broad goals listed above.

Its comprehensiveness notwithstanding, the report had some shortcomings. First, it repeatedly stated that Australia must play to its comparative advantages if it was to exploit the opportunities of the Asian century, and that existing comparative advantages had placed it in good stead in terms of these opportunities. Some of the advantages identified were a vibrant, multi-cultural society, high skill base of population, strong democratic traditions, and excellent institutions. However, conclusions about existing comparative advantages were cursory, without any systematic empirical analysis of their relative impacts or sustainability. Second, this was essentially an official document, with mention of specific policies limited to those that were implemented by the Rudd and Gillard governments after 2007.

Hence various “no-go” policy activities were not strongly featured in the report but should be part of wider independent review, including areas such as industrial relations, consumption tax reform, federal-state relations, and general skilled migration policies. Skilled migration, which is the source of much of the skills inflow into the economy, was last reviewed in March 2006⁵, and is thus due for a more updated evaluation. Even within the ambit of the Asian Century report itself the use of the skills of the existing Australian multi-cultural population was somewhat underplayed, as were matters of integration with wider global context beyond Asia, and matters of policy commitment and details of implementation.

⁵ Birrell et al. (2006), Evaluation of the General Skilled Migration Categories, Department of Communications, Information Technology and the Arts, Commonwealth of Australia.

The IGR 2010, released biennially by The Treasury, is a statement of the key policy challenges confronting Australia, and of the Government’s policy priorities, objectives, and agenda to address those challenges. It is comprehensive in scope and one of the three most forward-looking of all reports to be considered in this review in terms of time span covered. It considered the period to 2050, and identified population ageing (and the resultant pressures on the health system) and climate change as the biggest challenges to economic growth and stability in Australia.

The analysis drew heavily on ABS data for national-level analysis and on OECD data for cross-country comparisons. Such forward-looking long-term analysis has been lacking in Australian debate since similar work was conducted by the Economic Planning Advisory Commission and the National Population Council in the 1980s and 1990s.

The report stressed productivity-enhancing reforms, particularly through infrastructure development and skills enhancements, as the key policy priority to ensure continued and sustainable growth, and to offset some of the effects of population ageing. The second key strategy involved increasing labour force participation, which in turn has implications for health, education, and labour market policies. In this regard, the main themes and trends covered in this report do mirror those covered in some of the other reports.

While the report was useful for its long-term perspective and the issues it considers, it nevertheless had a strong and unmistakable official flavour, e.g. the report made no mention of policies implemented prior to the election of the Rudd Government in late 2007. The overall presentation of this report as a government document was somewhat understandable, given that it provided the opportunity for an official view of the achievements of an incumbent government, catalogue the policies that government has implemented to address the nation’s core challenges, and to differentiate the government by implication from the preceding government. All in all, the overwhelming governmental tone of the report warrants a more critical scrutiny than would be required for other, more neutral reports, as regards policy interpretation at least. But the underlying evidence-based analysis is helpful indeed.

Australia Economic Survey (2010, 2012)

The Australia Economic Survey, published biennially by the OECD, reviews the economic performance over the preceding two years and evaluates prospects for the future. These surveys are fairly comprehensive and broad-based, and present a good “outsider” perspective on the economy. They can be expected to be a little more balanced and unbiased in their coverage of issues, given that they are less encumbered by political sensitivities and self-serving agendas that would constrain more nationally originating analysis. Nevertheless, member governments can influence OECD analysis. Each of the OECD economic surveys focuses on a few specific themes of topical importance.
The Australia Economic Survey 2010 was the first comprehensive OECD review of Australian economy after the global financial crisis of 2008. As such, it evaluated the country’s economic performance following the crisis, and reviews the prospects for and risks to the economy over the short to medium terms.

The 2010 report lauded the strengths of the financial sector for its ability to weather the GFC. Strong supervisory rules, resulting in conservative capital adequacy requirements, low leverage, and smaller exposure to toxic assets (than in many other OECD countries), were cited as the primary reasons for the banking sector’s strong performance and resilience. Proactive and credible government intervention at the outset of the crisis also greatly alleviated market uncertainty and helped maintain credit flows in the economy. This emphasis on the reasons for the strong banking performance was a real value-added feature of the report, moving as it did beyond the usual descriptions of policy priorities and national strengths encountered in most national reports.

The other core themes in this report were:

- Addressing medium term challenges
- Enhancing the effectiveness of fiscal policy
- Meeting infrastructure needs
- Enhancing labour utilisation

The Australia Economic Survey 2012 continued on in a similar vein to the 2010 report. The unmistakeable, though implied, emphasis was on achieving flexibility balanced with equity, whether in the area of labour reforms or in corporate tax policy.

The specific issues addressed in this report were:

- Adjusting to Australia’s mining boom and the rise of Asia
- Boosting productivity

The choice of the two themes in this report was an apt one, given their close inter-relationship. The report illustrates this by stating that the prolonged mining boom and the rise of Asian economies resulted in the economy enjoying its most prolonged growth in the post-war decades, and weathering the GFC reasonably well. Conversely, the diversion of significant investments to the mining sector in response to the boom also affected resources for other sectors of the economy, thereby having a direct effect on multi-factor productivity. It further states that the high terms-of-trade as a result of the export boom put unprecedented pressure on the non-mining tradeable sectors of the economy.

These same factors also served to divert attention from away from much-needed structural adjustments and reforms. Adjusting for Australia’s mining boom and the rise of Asia would therefore invariably involve implementing structural adjustments and policies to boost long-term productivity. Productivity would in turn need policies to promote collaboration, innovation, and more business-oriented training for workers.

Both these successive OECD reports on Australia collectively addressed the core familiar themes presented in several other reports reviewed in this compendium. However, they also identified
what could be construed as two potential process comparative advantages that Australia could exploit and/or develop further. These are:

- a progressive and prudential regulatory regime, and
- extensive collaboration between domestic players and international partners

These could be further investigated during the course of the present project.
Issue-specific Reports

Culture and Creativity

Creative Australia: National cultural policy (2013)

This 2013 report by the Department of Regional Australia, Local Government, Arts and Sport is the first comprehensive cultural policy in Australia in nearly two decades. The report’s goals are twofold: first, to reinforce the role and importance of cultural policy for Australia’s continued prosperity; and second, to highlight the Government’s achievements in the cultural sector to date and to lay out its policy agenda for the future.

The key underlying theme in this report is that while they have always been an integral part of Australia’s social life, creative and cultural pursuits are now increasingly important for both social cohesion and economic growth as well. This is due to the increasingly multi-cultural nature of the populace, as well as the economic opportunities and challenges wrought by new digital technologies. The policy aims to foster a national culture of creativity and reinforces the identity of Australia as a diverse and creative society. According to the report, freedom of cultural pursuits and creative expression are vital to the maintenance of a peaceful, vibrant society, wherein all people are encouraged to rise to their full potential and contribute to national prosperity. In addition to the general benefits this brings, it also allows the high-value-added creative industries to thrive.

An effective cultural policy is also important because in this digital-enabled economy, firms are no longer restricted to their local domains of operations, but are in fact forced to operate in a highly-connected global marketplace. In such an environment, traditional and service industries cannot hope to survive, let alone compete, if they do not embrace a creative paradigm and exploit the opportunities brought about by the digital revolution in new and creative ways. They must also be able to harness the full potential of a diverse, multi-cultural workforce. The direct, explicit implication, justifiably so, is that a peaceful, harmonious society is an inviolable prerequisite for sustained national prosperity.

While the ideas laid out in the report are commendable and pertinent, this is nevertheless an official policy document, with its attendant constraints. It details all the financial assistance given to the sector over the last few years (at least since the installation of the Rudd Government in 2007). However, it is unclear how this funding has evolved over time, especially since the time of the Howard government, or how effective it has been in terms of achieving its goals. It further details the Government’s response to the 2012 review of the Arts Council, the peak body through which public assistance to the creative sector is administered. The Government accepted 16 recommendations for reforms to the Council, including the need to refine the Council’s legislative purpose, to ensure a modern governance structure, and to introduce a new grants assessment model focused on funding work of the greatest artistic excellence regardless of art-form.

This report can be found at www.acola.org.au © Australian Council of Learned Academies
Financial Sector

Funding Australia’s Future (2013)

The financial sector in any advanced economy, in addition to being exceedingly complex, is also distinctive in terms of its role and the value it generates for the economy. Unlike other sectors, which produce goods and services of direct value to customers and society, the financial sector mainly acts as an intermediary and facilitates the transactions that keep an economy functioning. In the words of Guy Debelle, RBA’s Assistant Governor for Financial Markets, the financial sector “is a critical link along the way, the oil that keeps an economy ticking over”.

Its complexity has been increased by the burgeoning integration of global financial markets and the proliferation of exotic financial products, both of which are made possible by the revolution in information and communication technologies (ICT) and facilitated further by globalisation. The sector is also challenging in that large parts of it and its products remain unregulated despite being subjected to regulatory oversight from such a multitude of statutory bodies.

Finally, financial instability creates risks of social unrest and economic instability, as brought into stark perspective by the Global Financial Crisis of 2008 and the ongoing Eurozone debt crisis. The critical importance of the wider financial sector for economic prosperity and social cohesion cannot be overstated. Its effective management is therefore a major priority for national governments and their regulators alike.

In this vein, the Funding Australia’s Future (FAF) project by the Australian Centre for Financial Studies (ACFS) is a timely stocktake of the Australian financial sector, including the systemic risks it faces (and needs to address) as Australia positions itself for the 21st century. The FAF project is a comprehensive, research-based, three-stage project commissioned by ACFS in late-2012, with the three stages being entitled, respectively, Setting the Scene, Exploring the Issues, and Identifying Options. Broadly speaking, the project addresses four main issues:

1. Future demand and supply of finance in Australia
2. Interaction between different participants in the financial system
3. Potential challenges facing the system
4. Institution and regulatory changes to improve the operations of the system.

The primary motivation for the first stage, as its name suggests, is to present a clearly-articulated framework for dealing with the above-mentioned issues. Furthermore, it seeks to identify specific questions and issues that would be further empirically investigated in the project’s second stage, which in turn would yield policy options in the final stage. The first stage was completed in July 2013 with the release of three constituent papers:

---

6 A July 2013 speech marking the completion of the first stage of the project, and the release of the three constituent papers. For text of the speech, see http://www.rba.gov.au/speeches/2013/sp-ag-100713.html.
7 The ACFS is a not-for-profit consortium of Monash, RMIT, Deakin, Griffith, and Melbourne Universities, and Financial Services Institute of Australasia (FINSIA).
1. ‘Funding Australia’s Future: From Where do we begin?’ by Professor Kevin Davis
2. ‘Improving Australia’s Financial Infrastructure’ by Dr. Daniel Mulino
3. ‘The Future Demand and Supply of Finance’ by Professor Rodney Maddock and Peter Munckton.

The first paper, by Professor Davis, overviews several topics, including the salient points about the Australian financial system, the consequences of financial crises for financial flows within Australia, and the fundamental forces driving the sector’s evolution (and the implications thereof).

The second paper, by Dr. Mulino, deals with composition of Australia’s financial system and the issue of its resilience to 21st century challenges. As with several other reports in this Compendium, technological innovation, an ageing society, and the rise of Asia are identified as the most important global trends affecting the sector. Evaluating the performance of the sector in a consistent manner, with its various types of institutions overseen by a multitude of regulators, is difficult. However, the report does so by evaluating how well these institutions and regulators perform the six specific functions that characterise any financial system:

1. Clearing and settling payments
2. Pooling resources and subdividing shares in firms and investment vehicles
3. Transferring resources across time and space (geographies)
4. Managing risk
5. Disseminating information
6. Governance

The final paper in the series explores the emerging demand and supply issues in the financial sector. First, it deals with the broad issue of availability of funds to support Australia’s economic growth, and the relative importance and contributions of the households, businesses, government, and foreign inflows are sources of funds. It then discusses how macro-level changes could affect each of these sectors, and how these changes could further affect the relative position of banks, superannuation funds and equity markets as financial intermediaries. Finally, the paper deals with the potential interplay between these broad changes and regulations; specifically, how these changes will affect regulations, and how they in turn will be driven by regulations.

These three papers are highly descriptive in their tone, and rely primarily on secondary information and data. This is consistent with the stated goals of the first stage of the project. Furthermore, the project involves extensive involvement and inputs by a wide range of financial sector stakeholders. It is a very helpful overview of the key issues in an important sector.
Infrastructure Development

National Infrastructure Plan (2013)

This recently-released report by Innovation Australia, a statutory body, presents an infrastructure roadmap for the next 50 years, intended to enable Australia to capitalise on the opportunities presented by the Asian century. The contextual framework is provided by the familiar themes of the rise of Asia, an ageing population, and climate change.

It identifies productivity as the key to sustained Australian prosperity in the 21st century, yet this productivity is undermined by the two biggest challenges facing Australia, namely demographic and climate change. Moreover, both these forces will affect productivity through their adverse impact on infrastructure. An ageing population, an increasing population concentration in urban areas, and a shrinking labour force will increase the net burden on government finances (reduced tax revenue and increased healthcare and associated expenditures), increase pressure on infrastructure, and reduce the productive input into the economy. Climate change, which is already testing the resilience and adequacy of existing infrastructure networks, will reduce agricultural productivity and make the agricultural sector more vulnerable to extreme weather events.

The identification of infrastructure as an operating channel for the adverse effects of demographic and climate change is therefore the primary “value-add” of this report. By logical extension, it calls for proactive and timely investments in infrastructure to arrest the predictable decline in productivity, and thus, national prosperity. Interestingly, the report eschews small, incremental improvements in favour of bold reforms.

These bold reforms are necessitated by what the report considers a tradition of faulty approach to infrastructure planning. For example, policy incoherence afflicts every stage of the implementation process, be it the government approval process, finance availability, or monitoring. Poor planning and oversight across different forms of infrastructure result in “overlapping purposes, different assessment frameworks, and different decision making mandates”8. Another major problem is the fundamental disconnect between what we as a society and country consider desirable infrastructure, and what means we are prepared to use for achieving that. Some of the economically viable and desirable means of raising funds to cover serious funding shortfalls are rejected outright as being politically and/or socially undesirable.

The proposed reform framework takes a comprehensive view of infrastructure, covering digital and telecommunications, ports and freight networks, water, energy, and connectivity of cities, and regional connectivity (through both road and rail). Seven broad reforms are proposed, and these are applied (where applicable) across each of the above-mentioned forms of infrastructure. The 50-year planning horizon called for in the report is an appropriate one, given the high costs and long life of infrastructure projects. The explicit focus on long-term planning is also different from that found in many of the other reports, whose planning horizons are much shorter. A

8 Pp. 18.
major shortcoming of the report is that the broad scope and radical nature of some of the proposed reforms may render them un-implementable. For example, calls for reducing the layers of government involved in the planning process, or reforms of local government, may have implications far beyond the infrastructure sector that any appropriate policy evaluation would have to consider. Furthermore, questions can be raised about the ability to quickly implement large-scale projects while also maintaining due diligence and accountability checks.

Pipeline or Pipe Dream (2012)

This 2012 report by the Business Council of Australia (BCA) evaluated the state of the capital investment pipeline in Australia, the long-term national benefits from the successful realisation of this pipeline, and the risks and barriers to its successful delivery. This report was useful because it presented a “state of affairs” snapshot of what was actually being done currently in terms of capital investments, and its likely impact for the economy. Other reports have done similar work in the context of higher education, and science and innovation, etc. but with fewer wide linkages. It therefore made an important contribution to the overall debate on how to secure Australia’s future.

The report was overseen by the Council’s Infrastructure and Sustainable Growth Committee. The analysis itself was based on inputs by member companies and other experts through a series of workshops and individual meetings, as well as commissioned work by Deloitte Access Economics. The research undertaken for this project captured the entire portfolio of Australia’s major investment projects across the resources, utility, industrial, and social sectors. In all, the report accounted for over 900 projects. To put the importance of these capital investments in context, the report estimated that the overall investment expenditure would account for close to a third of the national GDP for the rest of the decade. At the time of this report’s release, there were already 160 projects costing over $1 billion each, with 72 projects actually underway. The importance of their implementation to the economy therefore could not be overestimated.

The results of this report were quite revealing. The private sector dominated the investment pipeline, accounting for 71% of total capital investments. Public sector projects and public-private partnership account for 18% and 11%, respectively. Mining, oil and gas, and transport (including tentative high-speed rail plans) accounted for about 76% of investment projects by value. Education, health, and community services, by contrast, accounted for only 6%.

The BCA used these results to underscore the importance of the mining and resources sector for the economy, and to call for increased policy attention for these areas. At the very least, it was clear that the private sector peak body continued to see the mining and resources sectors as being drivers of future Australia growth. However, this focus does raise concerns for the diversification of the economy and its reliance on the resources sector. It also had implications for the current debate on Australia’s competitive advantages; instead of significant new investments in emerging areas, investment activity was being increasingly concentrated in a few traditional areas. As a nation, are we adequately prioritising and/or investing in education and health, or in other new sectors that could be considered as areas of key advantages for Australia?
This BCA analysis contrasted with the emphasis placed by the other reports mentioned on investments in education and research as the key drivers of future Australian growth. It also raised implicitly the important question of what was causing such relatively low investment in these or other sectors of importance. Whether this was because of low rates of returns in these sectors, or because of other factors leading to under-provision is evidently a matter for further investigation, including in a project such as the present one.
Education and Skills Development

Mapping Higher Education (2013)

The Mapping Higher Education report of the Grattan Institute is the latest in a series of reports evaluating the state of the higher education sector in Australia, and does so from a multi-dimensional perspective. It is largely descriptive rather than prescriptive, with its primary purpose being to provide a “one-stop-shop” for facts relating to the sector, and their context. This is important because, as the Grattan Institute states, despite a proliferation of reports on the sector, “basic facts are surprisingly difficult to find and interpret”\(^9\). The report also traces the broad historical evolution of the higher education sector and policy in Australia, and identifies some of the key issues relating to the sector.

Being published in 2013, the report is able to provide insights important for any preliminary assessments of the two major higher education policies implemented in 2012. The first of these was the establishment of a new regulator, the Tertiary Education Qualifications and Standards Authority (TEQSA), responsible for registration of higher education providers and accreditation of courses. The second was the implementation of a new “demand-driven” funding system for undergraduate places in public universities, thereby freeing universities to offer as many places in each course as they choose. This new funding system was seeking to help alleviate acute skills shortages in the economy, particularly in the fields of health and engineering. It also intended to make the education sector more responsive, accessible, and of higher quality. While this policy is still too new, an assessment of its impact and effectiveness after an appropriate elapse of time could be very useful from a comparative advantage perspective. Data for this report is from the HILDA survey and from the DIISRTE.


The National Workforce Development Strategy by the Australian Workforce and Productivity Agency (AWPA, formerly Skills Australia) is an empirical, evidence-based forward-looking strategy development exercise. It considered skills development, labour productivity, and labour force participation as the core preconditions for a strong future for Australia as it seeks to transition to a knowledge economy; and evaluated alternative strategy options for achieving these goals till 2025. These strategy options were tested against four alternative scenarios, each of which represented a plausible outcome that Australia could have to contend with in the future:

1. The Long Boom: sustained prosperity and a restructured economy
2. Smart Recovery: uncertainty to 2015 with low growth and knowledge-based recovery
3. Terms of Trade Shock: resource prices fall, with the economy becoming more balanced
4. Ring of Fire: multiple shocks in a risky world

The scenarios and associated empirical analysis contained in this report collectively form a comprehensive piece of work, with useful insights for the overall design and development of the current project.

The three key external drivers of change, common to all scenarios, and which Australia cannot ignore were:

- The Rise of China and India
- An ageing population
- An increased take-up of technology

The empirical analysis in the report was based on the modelling and testing of these four scenarios. Moreover, it developed detailed projections of labour demand and supply conditions across different industrial sectors, including for various levels of skills, under each of the four scenarios. The development of the report involved briefings, forums, and discussions sessions around the country, along with 84 written submissions received in response to an initial discussion paper.

Health of Australian Science (2012)

This report was the result of an eight-month research project by the Office of the Chief Scientist (OCS), commenced shortly after Professor Ian Chubb took over the role of Chief Scientist in May 2011. The report specifically focussed on supply-side issues pertaining to the education sector, i.e. the capacity of Australian schools and universities to continue supplying the skills thought to be needed for a future knowledge economy. To this end, the report aimed to create a comprehensive, balanced and accurate profile of the STEM education in Australia, including its strengths, weaknesses, research links, and their quality.

The analysis in this report was based on a nine-year timeframe spanning 2002-2010, and involved cross-tabulations of existing data, accessed from a range of national and international sources. Moreover, three externally-commissioned reports were prepared to inform particular areas of interest. A strong focus on disaggregated analysis of the different STEM fields, across the secondary and tertiary sectors, is a notable and distinguishing contribution of this report.

The report found Australian science to generally be in good health: science enrolment in universities showed an upward trend, and the quality of Australian scientific research matched or exceeded world standards and reflected strong international links. However, key problems related to poor science participation at the secondary-school level, and a lack of clear policy focus on particular areas of education and research that are vital to Australia’s future interests. This resulted in a wide divergence in the enrolment growth rates for various science-related fields, with enrolment in Health and Engineering growing by over 70% and 20%, respectively between 2002 and 2010. Enrolment in Agriculture and Environment, on the other hand, fell by 4%, and in Information Technology it actually fell by 50%. A significant consequence of this disciplinary imbalance is that the education profile is determined more by what students want to study rather than what is otherwise deemed good for the country; as the report stated, “more students mean more funding, more staff, and a greater mass in discipline”.
While the report refrained from making policy recommendations, it did implicitly argue for a greater and more proactive involvement by the Commonwealth in rectifying this imbalance and influencing outcomes (addressing areas of weakness or developing strengths in emerging disciplines)\(^\text{10}\).

**Skills for all Australians (SFAA, 2012)**

This 2012 report by the Department of Prime Minister and Cabinet (DPMC) set forth the Gillard government’s reform agenda for the Vocational Education and Training (VET) sector, with a focus on increasing participation, removing upfront financial impediments to training, and improving completion rates. The report sought to meet the need for a comprehensive understanding of the VET sector, including its key problems and capacity to contribute to a prosperous, resilient, and fair Australia. However, the primary focus of the report was to lay out the Federal government’s VET policy stance relative to that of the state and territory governments, and to call on them to make a greater contribution towards the success of the VET policy.

The ideas of education and skills are complementary. In fact, one without the other will be quite incomplete. Academic education and vocational training represent two alternative pathways available for Australians wanting to skill themselves for meaningful, productive lives. However, while the issue (higher) education has been addressed in other reports, the associated issue of vocational skills development has received relatively scant attention. This is despite a growing imbalance in the vocational training sector; according to the SFAA report, jobs for highly skilled workers were growing at 2.5 times the rate than for less qualified workers, but the supply was falling far short of projected and actual demand. Of specific concern was the adequacy of the current training policy and infrastructure with regards to the skills needs of the economy.

The SFAA report further states that publicly-funded training for VET courses were plagued by extremely poor performance and low completion rates of only 30%. The key policy priority put forward in the report was therefore of increasing student participation in VET courses through reduced upfront costs, and the main policy proposal was getting state and territory governments to sign on to the policy of entitlement, i.e. students having little or no qualifications (lower than Certificate III) being entitled to subsidised training in their first training programme.

This is both a descriptive Government report and one of policy promotion, reflecting the Commonwealth government’s aim to lay out a skills reforms agenda, to be discussed and negotiated with the Council of Australian Governments (COAG). According to the report, the Commonwealth government’s significant efforts to improve participation, completion, and quality of the VET sector, had not yet resulted in commensurate contributions by state and territory governments. The proposed reforms would therefore critically depend on buy-in from the COAG parties in terms of workforce training and development needs.

\(^{10}\) A complementary report has been released even more recently: S.Marginson et al, STEM: Country Comparisons, Melbourne: Australian Council of Learned Academies, 2013.
Higher Education Base Funding Review (2011)

This report was produced by the Department of Industry, Innovation, Science, Research, and Tertiary Education (DIISRTE) in late 2011. As the name suggests, the primary purpose of the paper was to undertake a comprehensive review of the government’s funding arrangements and policies, and the problems therein. This report was itself a more detailed examination of one of the key issues identified in the Bradley Report (2008), namely the adequacy of base funding.

At its most fundamental level, the report reinforced the Bradley Report’s emphasis on the importance of higher education in maintaining the nation’s competitiveness and relevance in a highly complex, dynamic, and inter-connected world. It also acknowledged the importance of adequate public funding, and appropriate quality thereof, in allowing public universities to play their part in securing Australia’s future. Three broad issues, each of which has important implications for Australia’s comparative advantage, were addressed:

- The enduring principles underlying public investment in higher education,
- International benchmarks and trends for higher education, and
- The level of base funding required for competitiveness of Australian universities.

The timing of the report suggests that it was intended to precede the transition to a “demand-driven” system of undergraduate funding in public universities, since this new policy would have fundamentally changed the basis for the distribution of base funding. This demand-driven aspect of the new funding framework was implemented in 2012. However, recommendations of the base funding review remain to be acted upon by the Government.

Primary information sources for this report were commissioned research, expert advice, and submission inputs from universities and other stakeholders. There were four commissioned reports. An initial discussion paper in December 2010 was followed by wide consultations, which resulted in 160 submissions. Based on the work, the report makes 29 specific recommendations across 6 different themes:

- Emerging cost pressures for universities
- Number of funding clusters, and adequacy of funding levels in each cluster
- Factors affecting quality of teaching and learning: incentives, new measures for retention and completion, research and scholarship, capital needs
- Appropriate balance between the public and private components of base funding, across disciplines
- The public and private benefits of higher education
- Access and equity


Colloquially known as the Bradley Report, this remains the most comprehensive and cited of all higher education reviews in Australia. Broad in scope, it highlighted the strengths and weaknesses of the higher education system, in context of an increasingly interconnected and
rapidly globalising world. Moreover, it emphasised a critical link between productivity and the proportion of population with high-level skills.

The report investigated whether the education sector is “structured, organised, and financed to position Australia to compete effectively in the new global economy”. The importance of the sector to the economy, as its third-largest export earner and accounting for almost 2% of the national GDP, cannot be overstated. It is concluded that despite great strengths, the sector also has significant current and emerging threats requiring urgent action. Failure to do so would result in one of Australia’s key competitive advantages getting seriously undermined and compromised. While this cursory conclusion, of education being one of the competitive advantages of Australia, may well be true, it is not backed by any systematic empirical or comparative analysis of other sources of comparative advantage.

While the report itself has a broad scope, three ongoing issues/problems stand out as being relevant to the current work on Australia’s comparative advantage:

The first relates to the adequate supply of a high quality academic workforce. One of the biggest problems confronting the Australian higher education sector arises from an increasing casualisation of the academic workforce. According to the report, an estimated 40-50% of all higher education teaching is conducted by casual staff. Casualisation increases stress and job/income insecurity, reduces motivation, and undermines the overall attractiveness of academics as a profession. Furthermore, the need to replace an ageing and retiring academic workforce around the world will result in an intense global competition for talented academics. The institutional arrangements currently prevalent in Australia will potentially reduce its desirableness as an academic destination, and hasten a net outward migration of skilled academics. Commensurate with this, the Bradley Report calls for a significant structural restructuring in the Australian higher education sector.

The second relates to supply of an adequately-skilled general workforce. Research commissioned as part of this project predicted a shortage of people with higher education degrees, especially those with undergraduate degrees. This problem would be worse for students from the most vulnerable groups, such as those from indigenous backgrounds, living in remote areas, and students from low socio-economic backgrounds. It must be noted that these groups are not mutually exclusive, and are likely to contain significant overlaps with each other. Therefore, the report stressed the need to increase access, participation, retention, and completion rates, especially amongst groups currently under-represented in higher education. Such an effort could desirably involve transitioning from a system of two (mutually) exclusive categories of providers, to one characterised by a continuum of skills, i.e. one where students are seamlessly able to transition between academic and vocational training in their quest for lifelong learning and up-skilling.

The third issue relates to funding arrangements for the higher education sector. The report contended that the earlier system of capped funding exacerbated skills shortages within the economy, particularly in some key sectors. Therefore, it recommended uncapping the number of publicly-funded student places that universities could offer across disciplines. This “demand-driven” system of student funding was implemented in 2012, but it is too early to be objectively
evaluated. The report additionally recommended further streamlining the funding clusters, to make the funding within them more effective and efficient.

The analysis and conclusions in this report drew heavily on cross-country comparisons. Consequently, the report placed great stock in benchmarking the performance of the higher education sector against those in a comparable cohort. To underscore the urgency of proactive action, the report noted that other countries had already made significant efforts to improve participation and investment in their tertiary sectors, so Australia has a lot to do to maintain its standing or enhance that. Proposed recommendations would, therefore, probably achieve little more than maintaining Australia’s relative international rankings, as is indeed suggested by the report.

Australia’s International Education Sector

The international education sector is Australia’s fourth largest export industry, and one of its highest foreign exchange earners. It generates over $15 billion in export revenues and supports over 100,000 jobs annually. Therefore, its health, sustainability, and credibility are of vital national interest. Several important problems have plagued the sector in the last few years, and a series of highly specific reports were prepared to address these in a coordinated, comprehensive manner.

Australia – Educating globally (2013)

The 2013 Chaney Report (named after its lead author) was produced by the International Education Advisory Council, which was set up by the Australian government to advise on the challenges and opportunities facing the international education sector. This report built on the Knight and Baird reviews that preceded it (both are reviewed below). But unlike the other two, which focussed on specific aspects of Australia’s international education sector, this took a broader perspective and recommended the development of a comprehensive, coordinated five-year strategy to address the challenges facing the sector.

To this end, the report identified seven key issues and proposes a series of recommendations to address each of these. A notable feature of the report was that it projected a 30% increase in the number of international students in Australia by the end of the decade, representing a significant boost to the economic benefits to the sector. However, this would be conditional on how well the various Australian stakeholders do their bit in attracting and retaining students.

As with the earlier two reports, a significant part of the report was based on stakeholder consultations and cross-country comparisons with other OECD and key competitor nations. The Knight, Baird, and Chaney reports all focused on what is widely considered to be one of Australia’s current strengths and sources of competitive advantage. This sector is also one that is going to be subjected to increased international competition in key Asian markets. The comprehensive, multi-dimensional, and focussed approach to policy evaluation and development, represented by these three reports, is therefore one that Australia might seek to replicate if it is to develop strengths and competitive advantages in other, new, areas.
Strategic Review of the Student Visa Programme (2011)

The strategic review of the student visa programme, also known as the Knight Review, was commissioned by the Ministers for Immigration and Citizenship; and for Tertiary Education, Skills, Jobs, and Workplace Relations. The primary motivation for the report was to explore ways to reverse a decline of the sector, which peaked in 2009. The report stated that a number of factors were driving this decline, including increased international competition, the uncertainty wrought by frequent changes to Australia’s migration policies, and a rising currency. To the extent that international education is one of Australia’s key strengths and source of competitiveness, this report addressed an issue of great import to Australia.

It further concluded that because an overwhelming majority (80%) of international students to Australia come from Asia, a negative perception of Australia and Australian education in any of these markets could rapidly spread across the region and cause students to pull away from Australia. This would have serious consequences for the overall viability of the sector, which is highly dependent on full-fee paying international students, and whose fees help subsidise domestic students.

Like the Baird review, this report too drew heavily on stakeholder submissions and consultations. In all, over 300 stakeholders were consulted, and over 200 written submissions received in response to an initial discussion paper. In addition, the report made extensive use of existing secondary information, including statistical information, media reports, academic publications, and existing policy documentation.

A key point of departure, and hence value-added, in this report was that it included a review of what Australia’s “competitor countries” were doing in key markets in which these countries compete for international students. This was based on visits to India, China, and Malaysia; and consequent consultations with and feedback from a broad range of stakeholders in these markets, including government representatives. The report author also met with officials and education sector representatives from US, UK, Canada, and New Zealand in these key markets.

Stronger, simpler, smarter ESOS: Supporting international students (2010)

Completed in 2010, and commonly known as the Baird Review after its author, this report reviewed the regulatory framework for the education services for overseas students (ESOS). This review was commissioned in August 2009 by the then Deputy Prime Minister and Minister of Education, the Hon. Julia Gillard. While this review resulted from one of the recommendations of the 2008 Bradley Review of Australian Higher Education, its timing and scope was driven by a number of emerging issues in the sector, including the growth in and changing composition of the international student body, and the attacks on overseas, mainly Indian, students. The report sought to address the reputational and real economic damage being wrought by these attacks, disclosures of gross malpractice by some educational providers and their overseas agents, and poor, ineffective regulatory enforcement in some cases.
This is essentially a descriptive report, drawing on extensive consultations with student and provider peak bodies, Members of Parliament, government officials, regulators, embassies, etc. Additionally, the review also received about 150 written submissions in response to an initial discussion paper, and more than 300 people joined the online discussion forum.

The report made a series of specific policy recommendations aimed at safeguarding and enhancing the effectiveness and global reputation of the Australian education sector. These recommendations targeted four specific areas: the interests and educational experience of international students, educational quality, regulation, and sustainability.
Leadership and Management Quality

Karpin Report Revisited (2011)

This brief and descriptive report by the Department of Education, Employment, and Workplace Relations (DEEWR) presented an update on the original Karpin Report of 1995. The 1995 report focussed on and identified ways to develop management and leadership skills in Australia. To this end, it highlighted the critical importance of education, training, and ongoing professional development. The updated report reviewed how the global competitive landscape had changed in the 16 years publication of the original report, and how this would impact on contemporary leadership and decision-making within Australian businesses.

The original Karpin report placed great emphasis on non-technical domains of management, such as communications and negotiations, conflict resolution, fostering creativity, and change management. The updated report, based primarily on a literature search and consultations with industry participants, concluded that “the 28 Karpin Report recommendations have proven robust and strongly related to organisational success”. It further sought to place the issues of leadership and management within the context of a radically altered competitive landscape, one that is characterised by globalisation, internet-enabled business technologies, increased volatility, and climate change. Moreover, the unprecedented proliferation of information and communications (ICT) technologies has engendered new organisational forms, involving outsourcing, off-shoring, and supply-chain integration, etc. These technologies have allowed even the smallest of companies to operate on a global scale and exploit niche opportunities.

This report is quite useful for the current work on identifying Australia’s comparative advantages, not just because it covers trends that are different from those repeatedly addressed in other reports, but more so because no business wanting to succeed in the Asian century can afford to ignore or overlook or respond to them. The comparative advantage project could seek to incorporate these evolving trends into alternative scenarios or other forms of empirical analysis.

Management Matters in Australia: Just how productive are we? (2009)

The Green Report, named so after its lead author, was a research project commissioned by the-then Department of Innovation, Industry, Science, and Research to identify the determinants of good organisational performance and to benchmark the management practices of Australian manufacturing firms against the world’s best practices.

The project was undertaken by a joint research team, drawn from the University of Technology Sydney, Macquarie Graduate School of Management, and the Society of Knowledge Economics; and was part of a broader global study led by the London School of Economics (LSE), Stanford University, and McKinsey & Co. It was the first such analysis undertaken in Australia since the 1995 publication of the Karpin Report on leadership and management skills.
The methodology and analysis in this report were based on an earlier work by LSE and McKinsey, which investigated the link between management quality and enterprise performance across 15 countries, but these did not include Australia. The report’s analysis and conclusions were based on the results of a qualitative survey of 439 medium and large-sized manufacturing firms in Australia, along with a smaller sample of services firms. The investigation of management practices covered eighteen different dimensions, grouped into three broad categories – people, performance, and operations.

The report made two key conclusions. First, the research found a clear causal link between quality of management and enterprise productivity. The report reiterated the observation of several reports reviewed in this compendium that the resources boom shifted the policy focus away from management and productivity and masked a clear decline in national productivity since the late 1990s.

Second, while some Australian firms were at par with the world’s best, a substantial majority of them were of mediocre and therefore lagging behind in terms of innovation and quality. Moreover, the key factor that differentiated Australia and these better performing, more innovative countries was their approach to people management. Furthermore, larger, foreign-owned, and publicly listed firms tended to outperform their smaller, domestically-owned, family-run counterparts. Interestingly, the report failed to find any link between labour market flexibility and organisational performance.

The main implication of these two conclusions, as stated by the report, was that the main policy imperative of current times was improved productivity. The fact that over 96% of Australian firms are categorised as being small certainly implies a significant potential for this improvement. It further states, explicitly, that the best, most cost-effective way to achieve this productivity improvement was by improving the quality and caliber of Australian management and leadership.

The report’s research framework yielded a rigorous and empirical validation of the key theme contained in the Karpin Report. Though uni-dimensional in its focus, it nevertheless made a timely and valuable contribution to the overall debate on how to best position Australia for the 21st century.
Innovation and Productivity

Excellence in Research for Australia (ERA) 2012: National Report

This 2012 report by the Australian Research Council (ARC) was the second comprehensive review of research at Australian universities. It incorporated extensive input by all Australian universities, and its primary purpose was to evaluate the research strengths of specific Australian universities, as well as the research strengths of the higher education sector as a whole. The ERA report is intended to be produced periodically, and its repeated iterations intended to facilitate comparisons and tracking of research quality evolution across universities and disciplines. This detailed data thus obtained would in turn be used for research applications, knowledge transfer, and collaborations.

The report provided a research excellence rating for each 2-digit and 4-digit field of research in all 41 eligible institutions. In all, 22 2-digit fields of research were evaluated. Furthermore, for each 4-digit code, it evaluated the number of universities operating at or above world standard for that field. All Australian universities submitted detailed information on their research activities, including data on publications and other research output, researchers and related staff, external research income, and patents. The participation of over 1000 researchers, from both Australia and overseas, as evaluation committee members or peer reviewers, ensured the robustness of the evaluation process. The use of such detailed metrics represented a distinctive contribution to an empirically-robust assessment of one of Australia's considered national strengths.


This was the third in a series of annual reports published by DIISRTE on the performance of Australia's national innovation system, and as such is the most current. The theme of this particular report was productivity, which is critical to a nation's comparative advantage. It must be emphasised that the report treated productivity and innovation as being intrinsically different. While innovation is a necessary condition for comparative advantage, it is not a sufficient one. Much work is needed before innovation can translate into general productivity and hence comparative advantage.

The report was motivated by a stated poor innovation performance of Australian businesses, relative to international standards. The main issues considered related to barriers to innovation, an imbalance between physical and intangible capital investments, and the impact of a high Australian dollar on innovation in the non-resources sector. In the last case, the high Australian dollar would place excessive pressure on the sector, forcing it to innovate simply to survive, let alone grow. A key insight of this report was that Australia is a “fast-follower” nation, and that it tends to invest considerably more in adopting or adapting the innovations of others than in undertaking new innovations itself.

Some of the other themes addressed in this report were:
1. The link between innovation on one hand and productivity and national prosperity on the other
2. Public investment in research and its impact on innovation
3. The link between skills and innovation
4. Business innovation and collaboration
5. Innovation opportunities for Australia’s future

Particularly useful from the perspective of the current work on Australia’s Comparative Advantage is the identification of six interlinked megatrends, i.e. significant shifts in economic, social, and environmental conditions that are likely to affect the economy and society over the coming decades. These megatrends are:

1. Increasing demands for limited resources, and “more from less”
2. Narrow (and fast-closing) window of opportunity to protect habitats, bio-diversity, and the global climate
3. Rise of Asia
4. The impact of an ageing population on healthcare costs and retirement models
5. Increased and unprecedented connectivity
6. Increasing consumer and societal expectations for services, experiences, and interaction.

**Smarter Manufacturing for Smarter Australia (2012)**

This was a report of the non-government members of the Prime Minister’s Manufacturing Taskforce, which comprised business and union leaders. The primary purpose of the report was to evaluate the state of the manufacturing sector in the economy, including emerging trends and challenges, and to propose solutions for dealing with these.

Although this report had some overlaps with other, more comprehensive reports that focused on innovation, these are only incidental. Unlike other reports, which considered innovation as an end in itself and critical to Australia’s future growth, this report was primarily motivated by the contemporary but urgent, short-term challenges to manufacturing, which result from a high exchange rate, “dumping” by trading partners, and rising cost pressures, etc. Moreover, the current over-dependence on commodity exports carries significant risks associated with global price volatility and the crowding out of manufacturing investments. It is noteworthy nevertheless that several of the policy solutions proposed for these short-term manufacturing problems mirrored those put forward for dealing with more fundamental innovation issues over a longer timeframe.

**Productivity Challenge (2011)**

This brief and targeted report by the Grattan Institute focused on the specific issue of productivity, i.e. challenges in measuring productivity, trends in and causes of Australia’s productivity decline, and the policy priorities for reversing this decline.
It primary aim was to summarise and synthesise the previous work on productivity. In other words, it presented a “30,000-foot” view of the broad issues relating to productivity. A notable deviation, and hence value-added, arose from the report’s description of the complexities inherent in defining and measuring productivity.

The report called for a systematic and comprehensive approach to productivity policy. It further claimed that a haphazard and piecemeal paradigm of policy-making had collectively stifled productivity in Australia. Some manifestations of this paradigm were:

- A half-hearted approach to productivity improvements in services sectors
- An ineffective tax system
- Poor regulations, and in some cases, over-regulation
- The fading of the effects of previous reforms, without a corresponding implementation of new reforms to address current problems

**Australian Science in a changing world (2011)**

**Internationalisation of Australian Science (2010)**

These sequential position papers by the Australian Academy of Science focused on the role of Australian science in an increasingly interconnected, internationalised world. Both reports were highly descriptive, brief, and targeted to particular issues. Moreover, both made broad generalisations in terms of their conclusions. However, despite the general and descriptive nature of the report and its conclusions, there is sustained attention to key issues, which are pertinent and worthy of further investigation.

The 2010 position paper, Internationalisation of Australian Science, elucidated the desirability of and benefits from greater Australian engagement with the global scientific community, and the consequences for the economy and national security from a failure to do so. It also presented a brief snapshot of Australia’s international scientific linkages with other countries, with descriptive illustrations of some specific collaborative projects.

The 2011 position paper, Australian Science in a changing world, followed on directly from the 2010 paper. It called for an increased funding commitment of $250 million over a 10-year period to facilitate an “urgent and sustained commitment on part of the government to support strategic international science collaboration”. The bulk of the report focused on justifying this recommendation, and catalogued some of the recent initiatives (both current and terminated) by the government to increase international scientific collaborations, but laments the apparent lack of strategic commitment and coordination in these efforts.

Such a strategic focus is said to be necessitated by the eastward shift in the global balance of power. The report cited conclusions by several multi-lateral organisations as evidence of this eastward shift. For example, an OECD report concluded that global R&D is expected to be “driven by growth in Asia and China in particular”. Furthermore, a UNESCO report found that “one would expect Asia to become the dominant scientific continent in the coming years”. According to a
2011 UK Royal Society comment cited in the report, the Chinese Academy of Science is already “the world’s most prolific publishing research organisation”.

An overriding theme of both these reports is the unique potential opportunity for Australia to engage with and benefit from this Asian-based research. However, this is a narrow and closing window of opportunity. For example, even though China is the world’s second-biggest source of scientific publications after the US, and is Australia’s largest trading partner, Australia’s scientific links with China are not yet commensurate with its trade links. Failure to enhance these links could represent a lost opportunity for Australia, according to this report.

Finally, it is concluded that an absolute increase in domestic investment in R&D will not be sufficient to maintain Australia’s relative share in global science and innovation, if this effort is not matched by a commensurate increase in global linkages. This is consistent with the Australian government’s 2003 mapping of science and innovation, which recognised the increasing scale, cost, and complexity of the evolving scientific landscape.

Powering Ideas: An innovation agenda for the 21st century (2009)

This 2009 Powering Ideas report by DIISRTE (then the Department of Innovation, Industry, Science and Research) laid out the national innovation priorities and a 10-year reform agenda to make Australia more productive and competitive.

As with many other reports, this touched upon the familiar themes of skills development, incentives and support for firm-level innovation, public sector engagement and governance, and collaboration (both domestic and international). However, it was fundamentally a government report, laying out and justifying the innovation policy priorities of the then recently-installed Rudd Government, and differentiating it from the preceding Howard government.

A highly descriptive report, it built on the policy work and investigations done in 2008, including the Cutler Report and a series of sector-specific reports on the textile, footwear, and clothing (TFC); automotive, pharmaceuticals, and higher education sectors. Finally, it draws on the conclusions of Australia 2020 Summit held in April 2008. The absence of any wider reference to government work and to reports prior to 2008 is distinctive.

Venturous Australia: Building strength in innovation (2008)

The Cutler Report, named so after its lead author, was a comprehensive review of the National Innovation System, commissioned by Department of Innovation, Industry, Science, and Research. The report articulated the key productivity challenge for Australia, in that the economic geography (large distances, both within the country and with trading partners, and low population density) and an abundance of natural (mineral and agricultural) resources creates an overdependence on resource-based industries that is indeed hard to break. Several others reports (including those reviewed in this compendium) have reflected this view.
As with the DIISRTE (2012) report reviewed above, this earlier report also highlighted the inadequacies of the innovation framework in Australia, and proposed strategies for addressing these. However, the over-riding focus of the two is different: the DIISRTE (2012) report looked at the causes of businesses’ poor innovation performance, while this one is concerned with the Australian innovation system’s outdated framework itself. Moreover, it treated a robust innovation system as a public good in its own right, and one that would be under-provided in the absence of active government involvement.

The Cutler Report stressed that the policy focus (prevalent at the time of the report’s publication) on commercialisation (a legacy of the innovation policy of early 1980s) must give way to one focussed on collaboration. This is because commercialisation itself could lead to sustainable growth if it does not reflect the most innovative ideas and research. Furthermore, in the context of the Australian economy, the critical mass of innovation cannot be attained without adequate collaboration.

In addition to reinforcing standard themes of increased public investments in research and skills development, and the need for excellence in national research, this report also highlighted the importance of information, market design, and tax policy for innovation. The report was based on over 700 submissions and a series of roundtable seminars, each of which was intended to get as comprehensive a set of inputs as possible.


This was a whole-of-government report prepared by the Science and Innovation Mapping Taskforce, whose membership was drawn from the Department of Education, Science and Training; the Department of Industry, Tourism and Resources; and the Department of Communications, Information Technology and the Arts.

This was the first, relatively balanced, and comprehensive mapping of Australia’s science and innovation activities across both private and public sectors undertaken till that time, and was aimed at serving as the basis for future policy work on science and innovation in Australia. There is actually little by way of insights or policy recommendations in subsequent reports to date that is not already addressed in this report.

The final report drew upon a broad range of interim reports as well as case studies and commissioned reports. The focus of the report was intentionally broad-based, and its purpose was to identify the strengths and weaknesses that needed to be maintained/ enhanced and rectified, respectively, in addition to identifying the complementarities and areas of potential cooperation between the federal and state/territory governments. Australia’s low population density (relative to its large landmass) and relative geographic isolation created many problems which, despite an absolute increase in public R&D expenditure, kept Australia low in global rankings. Some key challenges identified were:

- Approximately 96% of Australian businesses could be characterised as “small”;
- Over 20 large multinational companies (MNCs) each spent more on R&D than did all Australian businesses combined;
• Australia’s geographic location, and the consequent high trading costs, hampered its ability to attract foreign investment, including R&D investment by MNCs;
• In the emerging science and technology sectors, building and maintaining critical mass, supply of technical and commercial skills, and access to finance were identified as key problems;
• Poor incentives for private sector investments in R&D. Public expenditure on R&D was high by international standards, but low private sector expenditure on R&D placed Australia towards the bottom of the OECD rankings in this metric. Development of new technologies was heavily concentrated in the mining and agricultural sectors;
• Absence of a strategic focus in developing/adopting ICT capability;
• Poor collaboration of industry with publicly-funded research organisations and global counterparts. This limited industry’s ability to leverage access to research infrastructure in an environment of increasing scale, costs, and technical complexity;
• Poor provision and uptake of cross-disciplinary studies at the higher education level, resulting in a shortage of entrepreneurial and business development skills, especially in high-growth start-ups.

The reason for this detailed exposition of problems is that after nearly a decade that has elapsed since the publication of this report, almost all the recent reports reviewed for this compendium also identify similar issues. This creates questions relating to accountability and the overall effectiveness of policy design, implementation, and monitoring. The primary implication for the current project is that any policy recommendations and actions resulting from it should reflect the principle of accountability, i.e. accurate measurement and evaluation of the impact of implementation.
Climate Change

Critical Decade 2013: Climate change science, risks, and responses (2013)

This report by the Climate Commission was an update on its earlier 2011 report, The Critical Decade: Climate science, risks and responses, which concluded that 2011-2020 was a critical decade for Australia in terms of decisively beginning to decarbonise the economy, and thereby mitigate the risks posed by climate change. The main premise of both reports was that climate change was not just an environmental challenge, but also an economic, technological, and social one; and that dealing with it in an effective and sustainable manner would require a fundamental transformation of our societies, particularly our means of generating energy.

This premise echoed the themes contained in the Sustainable Australia 2013 report, which is also reviewed in this compendium. These reports reinforced an often-stated contention that addressing the fundamental problems facing Australia, and positioning it for the 21st century would require a comprehensive, multi-dimensional strategy, of which environmental sustainability should be an integral component. By highlighting the link between climate change and socio-economic goals, they also brought a balanced perspective to the debate on how to secure Australia’s future in the 21st century; this is undoubtedly a timely and important contribution, including from the perspective of a multi-disciplinary project like the current one.

The key motivation of this updated report, coming as it did barely two years after the publication of the original, was to both inform and educate the general public about climate change and its consequences, and thus facilitate a more informed decision-making by the public, businesses, community organisations, health care providers, and the government. It also sought to publicise the more concrete evidence found over the last couple of years about the link between climate change and extreme weather phenomenon that had caused (and have the potential to cause) much devastation and human suffering. To this end, the report made three specific contributions.

First, it made the full scope and complexity of climate change accessible to the general, “non-technical” public by explaining climate within the broader context of the “earth system”, of which climate is but one part and which includes the basic physics, chemistry, geology and biology that create the environment at the Earth’s surface. More significantly, it stated that human activity in all spheres of the earth system, especially in the last 60 years, has altered the Earth’s fundamental energy balance, which in turn is leading to climate change on a global level. Effectively combating climate change would therefore require corrective action in all these areas.

Second, the report illustrated the fundamental inter-connectedness and interdependence of all regions on earth, and implicitly warned against complacency or indifference on part of people in one region to weather patterns in regions outside their immediate spheres of concerns. It further emphasised how changes in the ecosystem or physical environment in one part of the world can have significant, lasting, and often catastrophic consequences in distant parts of the world. For
example, loss of ice sheets in Greenland could raise sea levels, which in turn could raise the risk of flooding and extreme weather patterns in a country as far off as Australia.

Third, it detailed the potential impact and risks of climate change for different sectors, as well as for each of Australia’s states and territories. The sectors looked at, namely human health, agriculture, fresh water supplies, property, infrastructure, and the natural ecosystems, are those upon which our economy and society depends generally. The differential impact of climate change across sectors and regions created both a somewhat dire picture as well as possibility for targeted responses. At the very least, it provided a sound evidence base upon which to base climate change policy.

The information and data for this report is drawn primarily from secondary sources, including published reports and work done by the Intergovernmental Panel on Climate Change (IPCC), which is seen as the world’s foremost authority on climate science.
Tax Policy and Reforms

Preparing for a Better Future (2011)

This 2011 report by the Business Council of Australia (BCA) was a submission to the Australian government’s 2011 Tax Forum. It called for incremental steps to fix the national tax system and improve the efficiency of government finances, and further suggested a development of a 10-year tax-reform plan, modelled on the Henry review.

The report was primarily based on commissioned analysis by Deloitte Access Economics, which made projections of the national budget deficit over the long-term (till 2050). A key contention in the report was that the deficit will reach unsustainable levels unless quickly addressed, thereby necessitating cuts to essential education, healthcare, and aged-care services to pay for the expanded deficit. These concerns seem prescient, given the massive write-down of projected surpluses in the recent 2013 Federal budget.

Two particular observations about the report can be made. First, being a government submission, this report was understandably oriented toward the considered view of large businesses, and limited to articulating the general framework and principles of tax reform. The lack of specific, evidence-based, actionable recommendations is noteworthy, as is the absence of verifiable research.

Second, it explicitly identified the resources sector as being the driver of Australia’s long-term growth, and therefore implicitly assumed that the long-term prosperity of the nation must be based on existing strengths. While it is true that the resources sector has been the mainstay of the economy for over a decade, the current project reflects a belief that proactive action is needed to develop new national strengths and capability in response to a changing geo-political and technological landscape.

It must be noted that tax policy is one of the few areas where there are significant gaps that can be identified in terms of the content of government reviews. For example, no official review has been done to date on the GST component of tax policy, which is an important component of fiscal policy and federal-state relations.
Conclusions

The foregoing review of reports is a stocktake for the *Securing Australia’s Future, Australia’s Comparative Advantage* project. Three key conclusions can be made.

First, as an initial product of the ACA project, this Compendium seeks to provide a comprehensive snapshot of the current thinking about policy priorities as Australia seeks to position itself for the challenges and opportunities of the 21st century. Such an approach not only avoids repetitions of work, but also identifies gaps that would help to define the scope of the current project in the most targeted and effective manner possible. Most reports reviewed in this Compendium do identify the same core set of global trends that are likely to shape Australia’s future in the next few decades. Moreover, they collectively illustrate the applicability of a broad range of methodologies, from a range of academic disciplines, which could be meaningfully utilised for the current project. However they naturally vary in their explicit or implicit emphasis on priorities in pursuit of future possibilities.

Second, while a deliberate attempt has been made to ensure as broad a coverage of topics as possible, the selection of reports for each topic is driven by the scope of existing work on each topic. The most notable insight that comes from this review is that of imbalance in the extent of coverage of topics; while topics like education and innovation have been extensively reviewed over the years, others such as culture and even tax policy have received little or limited attention. An a priori premise of the current project is that such an imbalance should be redressed to facilitate the development of a credible and effective approach to positioning Australia for the 21st century, and correspondingly should employ a multi-disciplinary strategy to provide the necessary insights.

Finally, while the reports covered in this Compendium vary considerably in their purpose, complexity, and objectivity, almost all reports, either explicitly or implicitly, call for Australia to play to its strengths and comparative advantages in dealing with the threats, opportunities and challenges that characterise the 21st century. Many reports further identify what they consider to be Australia’s basic strengths. However, this identification is often as much sectoral advocacy as objective analysis and often misses discussion of redressing weaknesses as well as building on strengths. The current project seeks to address this general shortcoming by adhering to a broad-based empirical framework, and in doing so, contribute to the development of rigorous, evidence-based policy as to what pays off best for Australians.
### Other Related and Recent Reports and Links

<table>
<thead>
<tr>
<th>Name of report</th>
<th>Link to the report</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD: Review of Australia’s System of Income support</td>
<td><a href="http://www.oecd-ilibrary.org/docserver/download/5k8zkq40l8w.pdf?expires=1374215348&amp;id=id&amp;accname=guest&amp;checksum=AEE2E37E8CA1709048F5E9840495351">http://www.oecd-ilibrary.org/docserver/download/5k8zkq40l8w.pdf?expires=1374215348&amp;id=id&amp;accname=guest&amp;checksum=AEE2E37E8CA1709048F5E9840495351</a></td>
</tr>
<tr>
<td>Name of report</td>
<td>Link to the report</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
</tbody>
</table>

Advice on further reports of relevance can be provided to Dr. Nitin Gupta on nitin.gupta@anu.edu.au.