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CONTENTS

Standard Business Reporting — an idea whose time starts now	1
Labour force participation and the influence of educational attainment	19
The Australian Treasury’s fiscal aggregate projection model	37
Raising the level of productivity growth in the Australian economy	47
Key themes from Treasury’s Business Liaison Program	67
SM Bruce: the businessman as Treasurer	71
What’s new on the Treasury website	85
Sources of economic data	87
Past editions of <i>Economic Roundup</i>	89

Standard Business Reporting — an idea whose time starts now

Paul Madden¹

As a country with a relatively small population spread over a large landmass and three levels of government, the development of a 'seamless national economy' is vital for Australia's international competitiveness.

The time is ripe to ease the burden of business-to-government reporting while improving the quality and usefulness of the information for all parties. The Standard Business Reporting (SBR) Program brings fresh technical and collaborative approaches and a welcome maturity to financial reporting. It is part of an international pattern of regulatory reform in which both government and business achieve benefits. SBR, with Treasury as lead agency and endorsed by the Council of Australian Governments (COAG) as part of the Australian reform agenda, has the participation of several other agencies and all state and territory revenue offices.

Regulation of business and the associated reporting processes are essential for government's economic oversight and direction setting as well as the collection of revenue. The information needed by governments about business activities has become more complex and diverse, resulting in increasing demands from a variety of agencies. The requirements can be confusing, as apparently differing terms might refer to the same or very similar pieces of information known by a different title. The required information often resides in the systems business uses for its

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day-to-day accounting and record keeping, but has to be analysed, assembled, reformatted, modified, or re-entered before being sent to government agencies. Every entry error and every report that needs resubmitting incurs a cost.

It took a number of years before the systems were in place for electronic commerce to become user-friendly for consumers, and the journey is still not complete. Comparable benefits have not yet been fully realised for business reporting to governments, as many legacies remain from the days of paper-based forms. These challenges of transition to fully integrated electronic processing are intensified as Australian businesses participate in the global economy.

This paper outlines the background and progress of the SBR initiative. It describes the international influences on SBR, and the particular context that makes the Australian approach ambitious, achievable, and fit for purpose. The development of a unique and specific Australian taxonomy, harmonised across the participating agencies to simplify business reporting in a standard language which can be communicated electronically from businesses' accounting software using a single sign-on, forms the core of SBR. From July 2010, participating agencies and businesses using SBR-enabled software will be able to realise the benefits of reporting to government agencies directly from their own accounting systems. Savings are expected to reach approximately \$800 million per year when fully implemented.

SBR's other innovative features include its co-design approach and work with stakeholders, predominantly commercial accounting software developers, accountants, payroll tax professionals and bookkeepers. While the current scope of SBR is quite specific, the possibilities for its future application are broad. This article outlines the many directions that Standard Business Reporting might take in the future, along with implications for economic management and investors.

Introduction

Government regulation of business is an important mechanism for ensuring that public and private interests are balanced (OECD 1997). Properly managed, the impacts on business can be minimal and the benefits to society maximised. There is increasing recognition internationally that regulatory reporting to governments can involve excessive compliance costs.

International financial standards are becoming more widely accepted as the world moves towards an even more integrated economy.

In Australia it is recognised that reporting and regulatory requirements are essential to the proper functioning of government, but that unnecessary, inconsistent and complicated regulation leads to a waste of both public and private money. Confusing reporting obligations can also be counter-productive, often stifling innovation. Regulatory reform has long been an issue in many jurisdictions. For example, most government agencies require an Australian Business Number (ABN) in their reports. In the early SBR analysis, it was revealed that there were nine different names used across multiple forms to describe the ABN across the participating agencies.

The report of the Taskforce on Reducing the Regulatory Burden on Business, *Rethinking Regulation*, released in April 2006, gave strong impetus for government to reconsider regulation which is 'unnecessarily burdensome, complex, redundant, or duplicates regulations in other jurisdictions'.

The Taskforce identified 100 reforms to existing regulation that would provide relief to business, and suggested that another 50 areas be further investigated.

The costs of regulation to business were seen as a distraction from core business activities, and particularly burdensome on small business. This is bad for everyone, especially if, as some of the submissions to the review indicated, compliance can take up 25 per cent of senior management's time. The report recommended a whole-of-government business reporting standard. This would, at the very least, open the door to more streamlined approaches.

A seamless national economy

COAG has supported reforms to eliminate overlapping and inconsistent regulations across States and Territories. COAG recognises that these differences must be ironed out so that businesses have the space to expand productivity and become more able to meet current economic and demographic challenges.

In 2008, COAG endorsed Standard Business Reporting (SBR) as one of nine additions to the regulation reform agenda (COAG Communiqué, 2008). The SBR business case and implementation plan were approved with an Australian Government commitment of \$243 million over four years.

The Australian SBR program follows the lead taken by the Netherlands, collaborating across agencies to agree to develop a single set of definitions and language for the information reported by business to government.

Treasury is the lead agency on SBR, with participation from the Australian Prudential Regulation Authority (APRA), the Australian Securities and Investments Commission (ASIC), the Australian Taxation Office (ATO) and the Australian Bureau of Statistics (ABS), and State and Territory revenue offices (SROs). There have been extensive consultation and collaboration with stakeholder groups, including business, business intermediaries and commercial accounting and business software developers. The stakeholder group referred to above as 'business intermediaries' is a very large group and includes accountants, tax agents, financial advisors, payroll specialists and bookkeepers, as well as business and industry associations. Together the single set of reporting definitions has been developed that will eventually make it possible to map government reporting terms directly to the appropriate information in a business's financial/accounting or payroll system. The collection of agreed reporting terms is called the SBR Taxonomy, and has been developed in a technology standard called XBRL, or eXtensible Business Reporting Language. XBRL is discussed further on in this article.

While the main goal is the development of a single set of reporting definitions in a single language, a further goal is for the information to be sent directly and electronically from the business's system to the participating agencies, and remain in the control of the business.

It has been a long and challenging road. SBR represents a true paradigm shift in the way business maintains and uses its own financial, accounting and payroll information to satisfy its reporting requirements with government. As such, it is groundbreaking and has significant potential for reducing the burden of business reporting to government.

Even prior to the roll-out of SBR in July 2010, there are strong indications that the methodology, mainly centred on the development of a single set of reporting requirements across agencies, is applicable to other areas in need of regulatory and reporting reform. The Productivity Commission (PC), in its draft annual review of regulatory burdens on business, identified key sectors of social and economic infrastructure services that would benefit from less burdensome regulation, with draft recommendations in support of consistent reporting arrangements. The review

identified aged care, child care, information media, telecommunications, energy, air transport and education as areas subject to both Commonwealth and state and territory regulation and reporting requirements (Productivity Commission 2009).

The PC review process looks at regulation through the prism of efficiency and effectiveness, but also from a perspective of net policy benefits to both business and the community.

The review noted that past efforts to implement uniform national codes in areas such as transport regulation have often faltered as jurisdictions have been reluctant or slow to implement the changes.

The PC recommended that a more comprehensive methodology be adopted for ensuring regulatory burdens are eased, consistent with the approaches of Standard Business Reporting. The SBR Program regularly receives calls from other agencies that have roles beyond the financial reporting sector. Some are in the process of policy development where their reporting requirements could benefit from a standards or consistency approach, or perhaps want to know how they can apply the SBR methodology to their own reporting information and processes. Given the design and approaches for SBR have been completed and are now easier to communicate, most stakeholders, from other agencies as well as from the business community, are quick to grasp the potential of an integrated and consistent national reporting taxonomy. But the first challenge is to have SBR up and running for its currently scoped financial reporting across the agencies listed above, scheduled for July 2010.

Standard Business Reporting meets design criteria appropriate to the Australian context. SBR is much more than a collaborative approach to simplifying forms. The adoption of a single set of reporting definitions and process and systems, that allow the exploitation of financial and accounting information that has not been manipulated or reprocessed, will be a significant advancement for Australia. The implication of the integrity of the information coupled with time saved in gathering, analysing and reporting is also significant for the broader economy. SBR's open source approach and methodology² for development and co-design, given its vast stakeholder base, is akin to the exploitation of on-line social collaboration tools familiar to the business and

2 Initially the term 'open source' referred specifically to a collaborative process of software development, in which the source code was available to anyone who wanted to change it. Today the term has been generalised to apply to any process which invites broad participation and transparent documentation.

software development communities. Such approaches are being considered as part of the early discussions of the potential of Gov 2.0³ in Australia and elsewhere.

SBR — simpler, better reporting

From a small business perspective, Standard Business Reporting will be almost invisible as the facilities will be built into the accounting systems that businesses use to manage their records. Moving up the scale to large business, much of the SBR abilities will still be built into accounting systems, but the range of reports will be broader. Some of the information mapping between the SBR definitions and the information in businesses' accounts will need to be set and tested by the business or its accountant. The good news is, however, that once mapped, the information can be used to satisfy a range of reporting needs.

The main purpose is to reduce the reporting burden for business. SBR therefore aims to simplify the process of reporting under Australia's current regulation, not introduce additional complexities associated with changed regulation.

From July 2010, businesses and their intermediaries will be able to see complete or partially complete reports and to send these reports to the appropriate government agency electronically directly from SBR-enabled accounting, financial and payroll systems.

It is important to understand that SBR will allow business, accounting and financial systems to become the portal to report to government. In this sense, SBR will operate much like a post office, simply moving electronic messages from businesses' system to the right agency, and returning an electronic receipt. For the 87 forms in scope, it will no longer be necessary to re-enter data into different systems or interpret terms for one agency that have a slightly different meaning for another. All this will ultimately save an estimated \$800 million per year for business in 2013-14 when take-up of SBR is expected to peak at 60 per cent of target businesses.

For some of the simpler forms, the reports will be prefilled in the accounting system, and businesses will be able to complete the forms where necessary, check for accuracy and validity, and correct any errors before final submission. This will save time and effort with corrections.

3 **Gov 2.0** is a taskforce that has been established to guide the application of social networking and integration advantages of Web 2.0 to the practice of government. see <http://gov2.net.au/>

In addition, businesses will be able to use a single sign-on not only to send reports to multiple agencies, but also to log onto the web portals provided by the agencies involved in SBR.

Along the way, because the terms used by different agencies have been harmonised into a smaller, single and consistent set of definitions — the SBR Taxonomy — business will understand better what government is asking for.

These benefits will cascade over time, freeing up business people and their professional intermediaries for higher level analysis and advising and streamlining the movement of financial information along the entire reporting chain. Behind this good news story is another, more complex tale about how SBR works.

The business case and implementation plan for SBR were developed in 2007. Since then the steps have been deliberate and carefully planned to bring all stakeholders along. There have been several iterations of the single set of definitions, or taxonomy, used for all reports in SBR's scope as well as some pilot testing. The program is also well advanced with the build of SBR's core services and single sign-on solutions, both described further below.

SBR is a voluntary program and the take-up rates for the use of the technology by businesses and their intermediaries will be on the basis of the time and money that can be saved, as well as the other benefits such as greater reliability of information reported. Further benefits such as financial reporting within the business, or to share between businesses, will emerge once the potential of having a standard set of definitions attached to a business's financial and accounting information can be seen.

The Netherlands leads the way

The first country to embark on a standard business reporting program was the Netherlands. The Netherlands led the way in collaboration across agencies, including its tax administration, Chamber of Commerce and statistical agency, to achieve a single reporting language, and implement infrastructure to allow reporting directly from businesses' accounting systems directly to the government. This project was initially called the Netherlands Taxonomy Project (NTP) but earlier this year was rebranded as the NL Standard Business Reporting Program.

Since January 2007, Dutch businesses and accountancy firms have been able to map the Dutch taxonomy to the financial data in their accounting systems and send reports directly from their systems to the right agency. Early indications were that businesses and accountants who used the facilities of the Dutch SBR Program would be able to save up to 25 per cent of their compliance reporting costs.

The Netherlands Government continues to work directly with software developers, intermediaries and business to implement SBR to enable government reporting to become a by-product of the information already in the businesses' accounting systems. Doing so enables SBR to be used not only for reporting to multiple regulators, but also for improving internal reporting and analysis.

The Australian SBR Program maintains close and regular contact with the NL SBR Program to share designs, issue resolution and lessons learned. This collaboration fosters the development and introduction of best practices.

Earlier this year the Netherlands Government announced further scope of SBR reporting to branch into the health and education sectors, using the harmonisation of data as the key concept. The NL SBR Program is also focused on growing the take-up rates of its existing SBR capabilities.

The Netherlands SBR Program website is <http://www.sbr-nl.nl>.

The power of the SBR methodology is that a single national taxonomy, encoded in an internationally recognised open standards language (XBRL in this case), creates a national reporting standard. This provides a uniform platform for transmitting and receiving financial information. SBR-enabled software can communicate with all agencies in the program, using the same data definitions, and in reciprocity the agencies can communicate with all software developers. This consistency means data items can be harvested as needed by the business software. It also represents a big step towards a seamless national economy for Australia.

As discussed in the Taxonomy section below, an important boundary around the current SBR Program is that no legislative changes will be required. While further reduction of the reporting terms might be achieved by modifications to legal

definitions, the majority of progress on harmonisation of terms can be achieved without the need for such legal adjustments. As the SBR Taxonomy becomes widely used, any areas for possible alignment through legal processes will also become more apparent as the SBR Taxonomy will become the first single documented set of definitions spanning the regulatory frameworks of so many agencies. The quantum of legal definition inconsistencies as well as estimate of the costs and benefits of further alignment will become more evident as the Taxonomy matures, so this is a task best left for the future.

Components of SBR

There are five main components of work in the development of the SBR solution:

1. Develop the reporting taxonomy and provide support in accounting systems.
2. Develop the SBR core services: this is the new e-channel for secure on-line interaction.
3. Create a single government authentication regime or single sign-on.
4. Have government systems accepting reports from SBR.
5. Educate businesses and conduct marketing to drive take-up once SBR is implemented.

The key components of interest to accountants would be the rationalisation/harmonisation of terms and definitions, the mapping of the taxonomy, and the use of the SBR-enabled tools when available. It is expected that SBR will become standard functionality in accounting, financial and payroll software, but the benefits accrue only when that functionality is used extensively.

The SBR benefits are much enhanced by the inclusion of Step 3, the single sign-on processes and systems for securely sending reports to any of the relevant agencies in the SBR Program. In time, this will also allow a business to interact on-line with the web based portals etc of all participating agencies via one credential.

Scale of Standard Business Reporting in the Netherlands and Australia

The Netherlands	3 agencies	1.5 m businesses	30,000 accountants	180 software developers
	Reporting elements reduced from 200,000 to 4,500 (98 per cent)			
Australia	12 agencies	2.1 m businesses	100,000+ accountants	240+ software developers
	Reporting elements reduced from 9,648 to 2,838 (71 per cent)			

The SBR Taxonomy — a dictionary of harmonised language

The most important part of SBR is the SBR Taxonomy of underlying definitions, and the use of a consistent language to express their properties. To indicate the difficulties of bringing consistency to the reporting terminology, just consider the earlier example where there were nine different names used across multiple forms to describe the ABN across the participating agencies.

Clearly this exercise was not just a walk in the park. Less in this case is clearly more, because during the process some forms were dropped altogether. The effort has a payoff, because once the names for the data are agreed upon, the taxonomy encodes the definition and rules for the reportable items of all forms in scope. This allows consistent mapping from elements in the accounting software onto elements required in government reports. The taxonomy is being developed by the Government in collaboration with software developers and the accounting profession, and will be certified by the Government.

SBR is working closely with the Australian Government and state agencies, to 'harmonise' the information being reported from business to these agencies, as well as reduce duplicated data. The harmonisation of the reporting information results in the identification of things being reported which mean the same thing, but currently have a different name, and then agree on the single name that will be used to ask business for this information. The other related activity is identifying information which has the same name but a different meaning. A simple example that helps everyone understand this is the term 'employee', which has more than 50 legal definitions in Australia. While SBR will not be directly changing laws to harmonise regulations and law, examples such as these are being identified to the agencies as candidates for legislative alignment. In the meantime, SBR will ensure that a unique name is applied to these terms so that businesses reporting against them know the context in which the information is being sought (for example, payroll tax, income tax, OH&S, and the State it relates to). This will give certainty to businesses as to what is being asked for. It also means that any information that may be provided publicly and then used for benchmark comparisons will at least be comparing like for like.

The collective set of reporting definitions for SBR is referred to as the SBR Taxonomy. This has been assembled using XBRL, or eXtensible Business Reporting Language, which has been developed by the accounting community for financial reporting. XBRL has been used in other countries for the presentation of complex financial statements which are lodged with listing exchanges. With the use of XBRL, quicker and more accurate comparisons of company performance can be made to guide and advise investors. In the Australian SBR Program, XBRL is being used as the single language for accounting systems to communicate electronically with government. It is also used to map meaning to financial and accounting information to not only allow the

pre-filling of less complex reports to government, but simplify the aggregation of financial data which can be assembled as the basis of complex financial statements. This latter use will save time and money, as well as provide the benefits described above for investors and market analysts.

As far as harmonisation goes, SBR has already identified a potential reduction of 71 per cent in the number of unique pieces of data that business has to assemble, analyse and report to government – cutting them from 9,648 to 2,838. This leaves us with 2,838 items of data that cut across some 87 reporting forms currently under review, including financial statements, superannuation, income tax, payroll tax and business activity statements.

Australia is one of more than 100 countries that are moving towards more uniform accounting standards and languages. One widely used standard is International Financial Reporting Standards (IFRS). Over time, participation in the global marketplace will favour the adoption and possibly the convergence of uniform standards.

Australian businesses already provide financial reports which are compliant with IFRS. The good news is that IFRS is already produced in an XBRL Taxonomy form. Working with the International Accounting Standards Board (IASB), the SBR Program is influencing the change management and assurance processes used for the IFRS XBRL Taxonomy so that financial statements that result from the use of the IFRS and SBR Taxonomies will be compliant, can be depended upon and will have stability such that any mapping and related assurance processes can sustain across the years.

As well as complying with IFRS, the SBR Taxonomy will also include the relevant Australian Accounting Standards to provide complete financial statements, for example on director remuneration.

Many other countries are using XBRL for financial and banking supervisor reporting. There are significant benefits in the use of XBRL in this field of reporting, but the true benefits start to accrue when the reporting requirements of many (such as government regulators) are defined in a single set of definitions, such that once mapped, the information might serve multiple reporting purposes. This is what SBR sets out to do.

SBR Core Services

This seamless functionality for the end user, which allows businesses and their professional intermediaries to send reports directly from their accounting system to the relevant government agency, is the essence of the SBR core services. This is what allows SBR to operate like an electronic post office. The SBR system will also provide immediate feedback confirming receipt and also the compliance of reports, or if

needed an error report. These are important features to save business time and money. Like a postal service, the SBR transmission channel does not keep reports, but only handles the information to pass it along. These services are now being constructed.

The SBR Core Services are simply an interface between a business's accounting system, and the agencies. As such, businesses will not see the SBR Core Services, and will not log onto SBR to report, as all of the reporting functions will be built into their software. Therefore the functionality of this key component is very important, but has not been described here.

Single secure sign-on

The absence of a single secure sign-on for business to report to or access the electronic services of many agencies was highlighted as a significant issue in the initial SBR business case. The overall design for SBR would allow reports for many agencies to be created within and sent directly from businesses' accounting systems. It would not be tenable if the business were then confronted by the need to enter a different user ID and password depending on which agency the report was going to. The situation across the agencies in SBR's scope involved nine different user IDs and passwords and two different digital certificates — potentially in the hands of one business user!

SBR has since designed the processes and systems that will allow a business to register once for a digital credential (with the Australian Business Register — ABR) and then use that credential to not only send reports from its accounting system via SBR to the right agency, but also log onto the various web portals for the agencies with which it has a relationship.

This facility will initially be available for use across the agencies in SBR's current scope, and will be made available into the future for use with other government agencies across the country.

Government systems accepting reports from SBR

The work required to adjust each of the agency systems to be able to receive reports from SBR has been planned and funded, and is largely on track for delivery for July 2010. This work represents the opening of a new channel for incoming reports, and as it is an optional channel it will not result in the immediate closure of other alternate channels.

How does it all fit together?

For many of the forms, SBR-enabled software will provide pre-filling of reporting information. It will allow editing and further data entry to complete the form and send the completed report securely to the right agency. It will also provide an electronic receipt confirming the delivery of the report. Real time processing, where provided by the agency, will add further information to the receipt.

As the scope of SBR involves a large range of reporting activities, there are several different ways that SBR will work. The reporting process for payroll tax and the business activity statement (BAS) can be largely automated within company software. More complex reports such as the corporate income tax return will more likely be provided to the business's accountant to check and complete the process.

Financial statements as an example

The purpose and level of reporting requirements across the agencies vary significantly, however the common ingredient is the business financial records that underpin all of these reports.

In the case of financial statements, it is important to remember that the purpose of the information being reported is significantly different to that provided on a form for the Tax Office.

Financial statements are created largely for governance of the company and are signed off by its board, and are eventually used as a report of performance to current investors and a source of advice to potential investors.

When provided to ASIC, the financial statements data is used within ASIC for regulatory purposes and eventually the financial statements are published for the analyst and investor communities.

In addition, for a financial statement, the use of the taxonomy will aid traceability and the aggregation of data, and also enable the report to be provided in a format that can help with market comparisons by analysts and investors.

Using SBR facilities, companies and their accountants will map the taxonomy to underlying financials which will allow aggregation of inputs to financial statements.

Software will allow translation of financial statement reports to PDF and/or XBRL documents, which can be sent electronically and securely from accounting software to ASIC.

In this scenario, the taxonomy mapping processes will replace current aggregation mappings, and be based on accounting standards and Australian regulatory terms.

Communication is key

SBR has been described as a classic example of using new technology to achieve a policy objective (OECD 2009). The policy goal drives the program — reducing the regulatory burden on business.

Demographic information — business intermediaries⁴

- More than 26,000 registered tax agents, responsible for lodging around 97 per cent of 2 million business-related income tax returns
- Approximately 100,295 accountants
- Approximately 124,700 bookkeepers
- Approximately 26,100 payroll specialists
- The major four accounting firms employ over 15,000 people in Australia.

SBR is a visionary but achievable project with a clear and demanding timeline. Its success is being supported by program management approaches as innovative as its goal of simplifying business reporting. SBR is a multi-agency initiative, but it is dependent on the software developer community to embrace it and include it in their accounting systems, and for the private sector to adopt it. SBR will not be mandated. Adoption of the capabilities provided by SBR is voluntary, focusing on the stakeholder groups and advising them of the benefits SBR will bring to stimulate their adoption of SBR. From the outset, SBR has sought to engage all stakeholders in the planning, design, build and testing of all SBR elements. There have been workshops for software developers and business intermediaries, managed through a stakeholder communication strategy. As of August 2009, several cycles of the taxonomy have been released for use, and a number of forms in scope have been completed for use in SBR-enabled software. End-to-end collaborative testing of the systems and software starts in October 2009. Via the SBR website, developers can access the taxonomy and the software developer's kit, and sign up for updates.

4 Sources include ATO Knowledge Profiles, ATO Tax Agent Technology Survey 2008, and IBIS Accounting Services in Australia.

This inclusive approach has the added benefit of mitigating risk, as stakeholders have been brought along at every stage. They have helped to determine the overall design as well as the benefits, and are informed about and therefore well able to manage the risks. The stakeholders become part of the SBR supply chain. Software developers, businesses and their intermediaries have clear and reasonable expectations when they decide to join the SBR bandwagon, via SBR-enabled software. They want to be sure SBR will be implemented and that the benefits will be realised.

A clear outcome of this approach is stakeholder trust. They can be confident that the solution is fit for purpose, stable and dependable from year to year, and well managed across agencies, business intermediaries and software.

The seven benefits of highly effective SBR⁵

1. Single language to report to the agencies involved in SBR
2. Reduction in the cost of assembling, analysing and providing data to Government
3. Single secure sign-on to report to the agencies involved in SBR
4. Opportunities for streamlining the process of passing/aggregating data across different internal departments, offices or business units of a company
5. Increased interoperability of information across finance applications
6. Increased access to comparable performance information to guide investors
7. Improved data quality – less manual intervention leads to fewer errors.

The communication, change management and governance processes associated with SBR will continue well past the first main implementation on 1 July 2010. The SBR Taxonomy will have governance processes to ensure that reporting creep does not undo the simplification and benefits that have already been achieved.

SBR is to be implemented from 1 July 2010. By 31 March 2010, all of the government side work should be complete and ready for production. This means that software developers should be able to rely on the capabilities that have been put in place and tested, so that when they deliver their software to the business and accounting users

5 Based on information in OECD 2009.

they should be confident it will work. Take-up by business will escalate over the subsequent three years.

The New Zealand Government recently announced the approval of an SBR program to develop a single reporting language and taxonomy, learning from the Netherlands and Australian experience. In August 2009, Australia and New Zealand formalised a Memorandum of Understanding on Standard Business Reporting. The agreed outcomes of the MOU include cooperation to ensure alignment between the Australian and New Zealand SBR taxonomies. Alignment of Australia's and New Zealand's SBR programs will be another aid towards a trans-Tasman single economic market.

What computers can also scale

The shift from totally paper-based reports to totally electronic records is not yet complete, but the path is irreversible. SBR is only possible in a world with electronic document transmission, and its future lies in further development of the open, inclusive methodology that sits behind this initial policy.

The scalability of electronic communications is highly dependent on open standards. In the early days of widespread Internet adoption, email attachments were sometimes inaccessible due to different standards for their transmission. Open standards make interoperability possible for the comparison or transmission of information. Issues about email attachments have long been resolved, but they appear again on larger scales. Open standards have become a vital element for the governance of the global system, as the following quote reveals:

Report of the Financial Crisis Advisory Group⁶

Because of the global nature of the financial markets, it is critically important to achieve a single set of high quality, globally converged financial reporting standards that provide consistent, unbiased, transparent and relevant information, regardless of the geographical location of the reporting entity.

The SBR Program is clearly focused on reducing the regulatory burden of business-to-government reporting within the clearly defined initial scope of financial reporting. However, SBR is also an important element in international e-government initiatives where the ultimate aim is better government.

Access to government information in a usable form is now a requirement for effective participation in a modern democracy. For Australia, the standard rail gauge has

6 International Accounting Standards Board, <http://www.iasb.org>.

become an iconic but embarrassing artefact of our early federalism. That issue has also gone away, but has again been replaced with larger problems of standards. A conversation about more open protocols and standards for access to government information has been in the public domain since at least 1997.⁷

This open approach to information collection, storage and access is the driving force behind data.gov, a United States initiative to make information and data sets more available to the public. It offers searches of information by topic, agency, and data type. Data types available include XML, the language that XBRL derives from and extends.⁸ There is also a facility to suggest additional data sets. Like SBR, it is not just a technology initiative, but has a clear set of policy objectives, including participatory democracy, improvements to government efficiency and effectiveness and transparency as a tool for accountability.

In this context, it is important to note that XBRL (or another open standards mark-up language for the documentation and presentation of information) can be used to represent many different kinds of data, not just financial. Sectors which are currently out of scope for SBR may soon be able to realise similar cost and time saving benefits from the SBR methodology. Any area, such as sport or the arts, that administers money or programs and has reporting requirements could potentially achieve both cost savings and better information access using the SBR methodology.

The benefits of streamlined reporting are not limited to government requirements. SBR can also be used for business-to-business reporting. Part of the elegance of the SBR design is the way its open standards facilitate scalability. This gives SBR the potential for achieving even greater benefits for the future. This brings the discussion of the future of SBR back to the starting point: the increasingly interdependent and globalised economy. As the world gradually recovers from the global financial crisis, it is likely that agreements and systems will be sought for problems with ever greater scope, scale and complexity. SBR will be part of the solution set, as it makes a real difference to the way business reports to government. It is an idea whose time starts now.

7 Management of Government Information as a National Strategic Resource, The Report of the Information Management Steering Committee on *Information Management in the Commonwealth Government* (1997)

8 XBRL is XML-based. It uses the XML syntax and related XML technologies such as XML Schema, XLink, XPath, and Namespaces to articulate this semantic meaning.

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Labour force participation and the influence of educational attainment

Steven Kennedy, Nicholas Stoney and Leo Vance¹

This paper uses census data from 1981 to 2006 to examine changes in labour force participation rates for people with different levels of educational attainment. We find that the participation rates of both men and women with low educational attainment rose substantially between 2001 and 2006. However, the participation rates of people with no post-school qualifications remain significantly below those with post-school qualifications (around 10 percentage points for both men and women). Within the no post-school qualifications group, the outcomes for those who completed school to year 9 or less are especially poor, with participation rates up to 20 percentage points lower than for other more highly educated groups.

1 The authors are from Competition and Consumer Policy Division and Social Policy Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Meredith Baker, Leah Efrossynis, Stephanie Gorecki, David Gruen, Laura Llewellyn, Tony McDonald, Nigel Ray, Peter Robinson, Hector Thompson, Julie Tinnion and Joann Wilkie. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

The paper uses Australian Bureau of Statistics (ABS) data from the Labour Force Survey and Censuses from 1981 to 2006 to examine changing patterns in labour force participation rates of people with different levels of educational attainment. It updates the analysis of Kennedy and Hedley (2003), which found that declining participation rates for prime-working-age men between 1981 and 2001 were primarily driven by dramatic falls for men with no post-school qualifications. In contrast, female participation rose for all educational attainment categories.

The paper finds that the downward trend in male participation was partly reversed in the 2006 Census and that the recent reversal has been strongest for men with no post-school qualifications and men aged over 55. Female participation continued to rise over the period, and increased particularly strongly for women with no post-school qualifications. The rises in participation for men and women with no post-school qualifications may partly reflect strong economic conditions, although structural factors may also have played a role.

The paper adds to earlier analysis by focusing on the participation outcomes of people with no post-school qualifications. There are disparate outcomes within this group. The participation rates of those with year 9 or lower levels of schooling are by far the poorest: up to 20 percentage points lower than those who completed Year 10. This result along with international research suggests that policies designed to increase school retention, including compulsory school attendance to year 10, may have significant social and economic benefits. Wilkie (2007) finds that the relatively high standard of minimum educational outcomes in Australia plays an important role in enhancing intergenerational income mobility, for example.

In light of the challenges accompanying demographic change and the ageing of the population, there is an increasing focus on the '3 P's' framework, which highlights population, participation and productivity as the drivers of future economic growth. Within this framework Henry (2003) notes that, over the next 40 years, a principal economic challenge will be the participation rate. On the basis of the evidence outlined below, improving educational attainment would be one possible way to lift aggregate labour force participation. The range of other issues that affect participation rates are beyond the scope of this paper.

This paper begins with a discussion of the channels through which educational attainment might affect labour supply, including the extent to which the observed correlation between educational attainment and labour force outcomes may reflect selection effects. This is followed by an examination of labour force participation rates for people with different levels of educational attainment over the period 1981 to 2006. The paper concludes with a brief discussion of some key implications of the data.

Human capital and labour supply — theory and evidence

Human capital theory suggests that people acquire the education level that maximises the present value of their expected lifetime earnings (Borjas, 2005).² That is, people choose (voluntarily) the level of educational attainment that is consistent with their natural abilities and their discount rate. The discount rate reflects the extent to which people are prepared to trade-off future outcomes against today's outcomes.

Given an acquired level of human capital, the neoclassical labour-leisure model assumes that the labour supply decision is based on the wage offered in the labour market relative to the reservation wage (the wage at which the individual is indifferent to the choice between working and not working). The hours of work supplied by the individual will be determined by the trade-off between leisure and consumption (out of labour income).

One channel by which educational attainment enters the labour supply decision is through its influence on the offered wage. If higher levels of educational attainment are associated with higher levels of productivity, individuals with higher levels of educational attainment should be offered higher wage rates in the labour market.³ A recent Australian study (Leigh and Ryan, 2005) found that there was a positive association between educational attainment and earnings, in line with the conclusions of international literature on this issue (see, for example, Ashenfelter and Rouse (1998), Isacsson (1999) or Harmon and Walker (1995)).

Another channel by which educational attainment influences participation is through its influence on the ability of people to respond to job loss. Prolonged periods of unemployment can lead to skill atrophy and to people becoming discouraged from seeking employment and dropping out of the labour force. Structural change in the economy, and/or economic downturns can displace large numbers of individuals from employment, and are often associated with persistent unemployment or what economists like to call hysteresis.

More highly educated individuals may be less likely to experience long-term unemployment or withdraw from the labour market as a result of a period of unemployment. Further, they may be more able to adapt to new employment

2 Formally, a person will invest in education up to the point where the marginal rate of return to schooling (MRRS) is equal to their discount rate. Simply formulated, the MRRS is equal to the percentage increase in annual earnings over the lifetime associated with an additional year of schooling.

3 The standard 'schooling' model suggests a causal relationship between education and productivity. An alternative 'signalling' model suggests that higher levels of educational attainment may act primarily as a signal to employers that a particular worker is more productive, rather than being the cause of higher productivity.

opportunities, reskill and upskill, to adapt to a changing labour market. They may also be more geographically mobile and more able to respond to regional shifts in labour demand. It is also likely that more skilled people are able to shift into less skilled employment for short periods following job loss, opportunities that are then not available to the less skilled. Farber (2003) showed for the United States that those with lower levels of educational attainment experienced greater volatility in employment rates over the business cycle and were less likely to find work once unemployed.

The data and analysis presented in this paper support these contentions, in finding a strong positive correlation between educational attainment and participation. However, there is a need for caution in interpreting these correlations. As discussed by Lattimore (2007), low educational attainment and poor labour market outcomes may also be a consequence of other unobserved factors. For example, there may be a selection bias in the observed data, insofar as people with a high probability of participating in the labour force due to natural abilities or personal preferences 'select' into higher levels of educational attainment. Some proportion of the observed differences in participation between groups with different levels of educational attainment is likely to be explained by such a selection bias – in other words, there are likely to be differences between the marginal and average impacts of higher attainment on participation.

This issue was examined by Laplagne, Glover and Shomos (2007). Using data from the Household Income Labour Dynamics Australia (HILDA) Panel survey for 2001-2004, they estimated econometric models of labour force participation correcting for selection bias. The results indicated that while there may be some selection bias in the correlation between educational attainment and participation for women, there was no strong evidence to support this conclusion for men.

This provides some support for the proposition that there is a causal link between educational attainment and labour force participation. It would also seem to imply that policy makers seeking to increase participation rates should consider promoting higher educational attainment as a means of accomplishing this outcome.

However, policies designed to increase labour force participation need to be considered in a broader context of wellbeing and social welfare. That is, rather than higher participation being a policy objective in and of itself, the key objective is to eliminate barriers to participation. Higher participation should be seen as playing a role in achieving improved social and economic outcomes and enhancing individual wellbeing.

Participation rates — time series data

Over recent decades, women's participation has tended to rise while, until recently, men's participation has tended to fall (see Charts 1 and 2).

Around 2003, men's participation began to rise. While some of the rise has been unwound during the current global economic downturn, men's participation is still well above its low point and above the level reached in 2006 when the last census data was collected. Women's participation initially continued to rise during the current economic downturn, although it has declined in the last three months.

Chart 1: Male participation rates

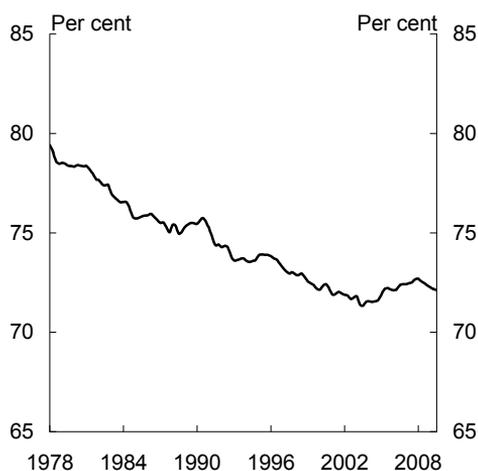
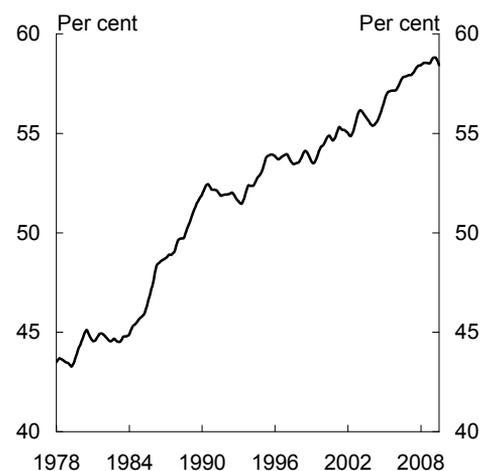


Chart 2: Female participation rates



Source: Labour Force Survey (quarterly trend).

Census data can be used to analyse trends in male and female participation rates by level of educational attainment. The participation rates of prime-working-age men and women by level of educational attainment over the period 1981 to 2006 are shown in Charts 3 and 4 below. We show the participation rates of prime-working-age individuals (ages 25 to 54) in order to limit the influence on the data of changing retirement patterns and compositional effects arising from the ageing of the population. The education levels used are those with no post-school qualification, those with a non-degree post-school qualification, and those with a degree, or higher qualification.⁴

The data show a steady decline in participation rates for prime-age men at all levels of education over the twenty years to 2001, although this decline was greatest for men

⁴ See Appendix B for further details. This choice of educational groups and issues relating to data quality are discussed further in Kennedy and Hedley (2003).

with no post-school qualifications (Kennedy and Hedley 2003). Higher skilled males experienced much less substantial declines in participation over the period.

The most recent Census shows that between 2001 and 2006 all educational groups of prime-age men increased their participation, with the increase being strongest for unskilled men. There was an increase of 5.8 percentage points in the participation rate for prime-age men with no post-school qualifications, whereas those males with post-school qualifications, or degrees, increased their participation rates by just 1.1 and 0.3 percentage points respectively – see Chart 3 below.

Chart 3: Prime age males (25 to 54) participation rates

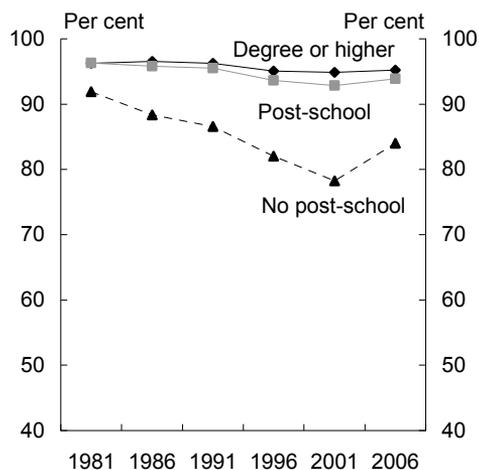
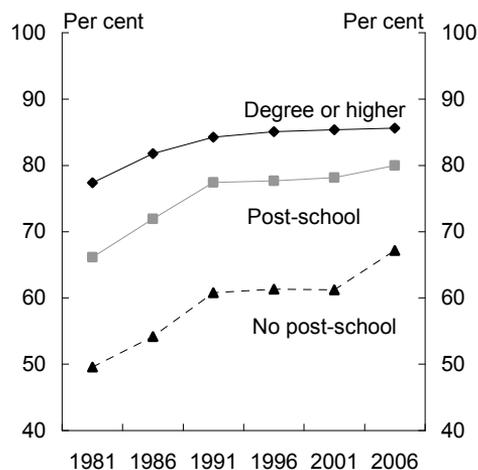


Chart 4: Prime age females (25 to 54) participation rates



Source: Census data.

The data show a rise in participation rates across all educational groups of prime-working-age women over the period 1981 to 2006. The upward trend in women’s participation flattened out somewhat between 1991 and 2001, before resuming over the period from 2001 to 2006, particularly for the low skilled.

The rise in the participation rates of prime-working-age women over the period 2001 to 2006 was much greater for lower skilled women, consistent with the observed trend for prime-working-age men. Specifically, women aged 25 to 54 with no post-school qualifications experienced a sharp 6.0 percentage point rise in participation between 2001 and 2006. Those with a post-school qualification increased their participation rates by a relatively small 1.8 percentage points, and those with a degree or higher increased their participation by just 0.2 percentage points – see Chart 4.

The Labour Force Survey data shown in Charts 1 and 2 indicate that participation rates for men also improved during other periods of relatively tight labour market conditions, such as in the late 1980s. This observation, and the concurrent above-trend

growth in participation for low-skilled women between 2001 and 2006, tend to support the conclusion that cyclical factors played some part in the recent increase. There is evidence that low levels of participation by unskilled males in the late 1990s was a form of hidden unemployment (Kennedy and da Costa, 2006); in this context, strong demand for labour may have resulted in an 'encouraged worker' effect, with low-skilled men drawn back into the labour force by strong wages growth and greater availability of vacancies.

Examining the participation rates of unskilled males and females in more detail

The substantial differences between the participation rates of people with no post-school qualifications and those with higher-level qualifications suggest a closer examination of the no post-school qualifications group is warranted. In this section, we therefore disaggregate the group of people with no post-school qualifications into those with Year 9 or less, those with Year 10, and those with Year 11 or Year 12 level attainment (see Charts 5 and 6).

People with year 9 or less have much lower rates of labour force participation over most of the life-cycle compared to those with higher levels of educational attainment. The participation gap between those with Years 10 to 12 and those with degree or non-degree post-school qualifications is smaller, although still material. There is a considerable narrowing of the differences in participation levels between different educational groups of men once they pass age 50.

The participation gap between prime-working-age women with year 9 or less compared with women with degree or higher qualifications is 37 percentage points, while for men the gap is 24 percentage points. Further, women aged under 40 with year 10 have particularly low participation rates compared with those with year 11 or 12; however, this difference largely disappears by the time they reach 45. These observations may partly reflect differences in the age of child rearing for women with different levels of educational attainment; however, it was not uncommon for women in these age cohorts to leave school with Year 10 and gain employment with specific 'on the job' training. It may be that the participation rates for these groups are similar because labour market experience is more important than educational attainment for them.

Chart 5: Male participation rates by educational attainment and age in 2006

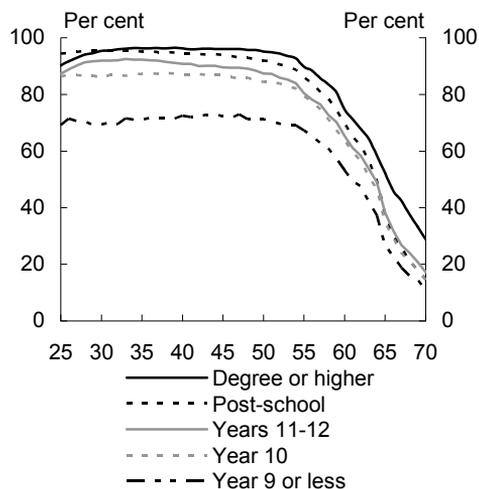


Chart 6: Female participation rates by educational attainment and age in 2006

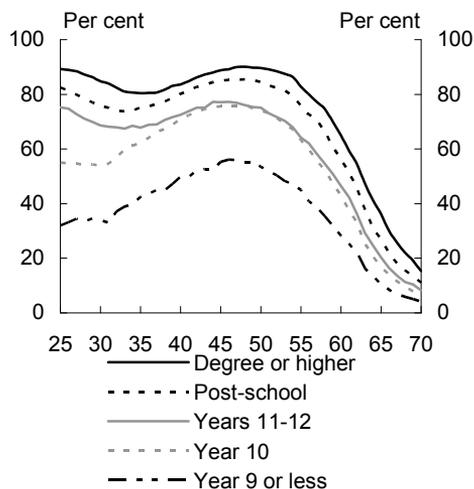


Chart 7: Educational attainment and age — 2006 — males

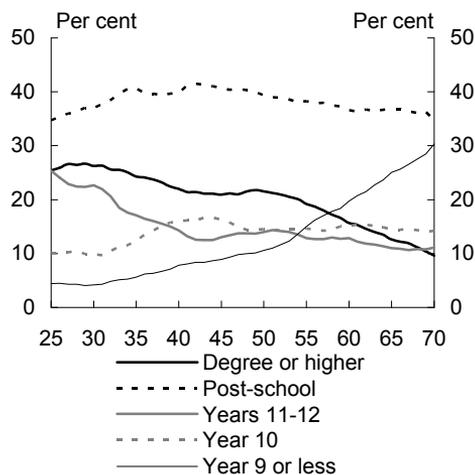
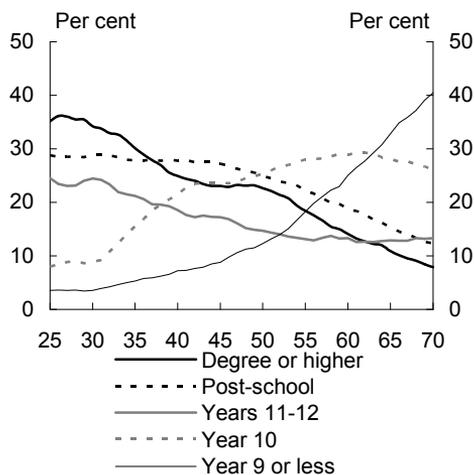


Chart 8: Educational attainment and age — 2006 — females



Source: Census data.

The differences in participation rates between educational groups, particularly for those with very low levels of schooling, suggest that rising educational attainment levels in recent years may have a positive influence on participation in the future. According to the Census data, around four per cent of the population aged 25 had only Year 9 or less in 2006; this included around 4,000 females and 5,000 males (see Charts 7

and 8 below).⁵ This is a significantly lower share of early school leavers than in earlier cohorts.

Even four per cent of population with year 9 or less educational attainment seems high and it appears likely there is potential to lift participation by improving educational outcomes for this group. Furthermore, an additional eight per cent of 25-year-olds had only Year 10 in 2006, and improving attainment for this group may also have benefits.

Research from the United States and United Kingdom undertaken by Oreopoulos (2003, 2006, 2007) indicates that an additional year of schooling can have significant benefits for disadvantaged youth in terms of earnings, health and wellbeing, consistent with earlier United States research by Angrist and Krueger (1991).

In Australia, the Australian Government and the States have recently entered into a National Partnership agreement to achieve a national Year 12 or equivalent attainment rate of 90 per cent by 2015 (bringing forward the earlier commitment in the National Education Agreement to achieve this target by 2020). Complementary to this, the participation requirements associated with certain income support payments have been strengthened to encourage continued participation in education. Moreover, since 2003 most States have raised the minimum school leaving age to at least 16 and require students to remain in some form of education, training or employment until they turn 17.

It is also worth noting there are a range of pathways for individuals to achieve higher educational attainment, including apprenticeships and vocational education and training. The proportion of young people not completing Year 12 but going on to complete an apprenticeship or other vocational qualification has risen over the past decade.

While levels of educational attainment are important, the benefits of additional schooling may not be fully realised unless the quality of the educational experience is high. Indeed, as Tunny (2006) and Hanushek and Woessman (2007) outline, differences in learning achievements matter more in explaining cross country differences in productivity and productivity growth than differences in the average years of schooling or enrolment rates. It is the knowledge acquired while engaged in schooling that counts; time in the classroom can be of little value if students are not gaining learning and skills from the experience. That said, human capital acquisition can occur through other channels, such as on-the-job training.

5 Access Economics (2005) notes that 2003-04 Australian retention rates from Year 7/8 to Year 12 were around 75.4 per cent.

Participation rates — life cycle patterns

The trends in participation rates over recent decades have also exhibited different patterns between different age groups, as well as across genders and education levels (see Table A1, Appendix A). Changes in patterns of participation over the life cycle between 2001 and 2006 are discussed in more detail in the next section.

Males

Kennedy and Hedley (2003) reported broad declines in participation by men across educational attainment levels between 1981 and 2001. The 2006 Census shows that there have been some noteworthy changes since 2001, principally the rise in participation by prime-working-age men with no post-school qualification, which was discussed above. However, the data also show that the participation rates of older men with lower skill levels have risen sharply since 2001, almost offsetting a significant reduction over the period to 2001. This group experienced an increase in participation between 2001 and 2006 even greater than that observed for prime-working-age men with the same educational attainment.

Men with no post-school qualifications aged 55 to 70 experienced an increase of 8.5 percentage points in their participation rate between 2001 and 2006, effectively reversing the decline in participation by this group in the period 1981 to 2001 (see Table A1).⁶

On a related note, Kennedy and Hedley (2003) described a decline in participation rates for men aged 55 to 59 in all educational groups between 1981 and 2001. This group have increased their participation between 2001 and 2006 (see Table 1), but it remains below the 1981 level. This may be indicative of changing retirement patterns; where the 1981 data show steep declines in participation at ages 60 and 65 the 2006 data show a more gradual decline from age 55 onwards. As a result, participation rates are lower in 2006 relative to 1981 for men aged between 55 and 59, but higher for those aged over 60.

The data suggest that mature-age men with no post-school qualifications appear to be staying in the workforce much longer than they did 25 years ago, which may reflect improvements in health, or may instead be a temporary outcome resulting from exceptionally strong economic conditions. More generally, Australian men may be taking a more flexible approach to their retirement age, with expanded opportunities for part-time work likely to have played a part in this development.

⁶ This recent increase in participation by mature aged males was discussed by Kennedy and Da Costa (2006) using Labour Force Survey data.

Table 1: Mature aged — changes in participation rates from 2001 to 2006 (percentage points)

Educational attainment	Age 55 to 59 years	Age 60 to 64 years	Age 65 to 70 years
Males			
Degree or higher	2.0	3.4	4.6
Non-degree post-school	3.5	7.7	6.0
No post-school	6.5	10.0	6.0
Females			
Degree or higher	3.5	7.7	4.7
Non-degree post-school	7.2	10.2	4.5
No post-school	8.7	9.4	2.7

Source: Census data.

Females

Female participation rates have risen significantly since 1981 across most age groups and all levels of educational attainment.⁷ The increases were greatest for those with lower skill levels but, despite this, women with degree or higher qualifications continued to have substantially higher participation rates in 2006 than women with lower levels of educational attainment. The data suggest that educational attainment and participation rates are more strongly correlated for women than for men.

⁷ However, as noted by Lattimore and Abhayaratna (2007), Australia still has relatively low participation rates of child-bearing age women (25-44 years old), and is ranked 23rd out of 30 in OECD data (although Australia rises to 20th in Lattimore and Abhayaratna's adjusted data).

Chart 9: Male participation by age and education, 1981

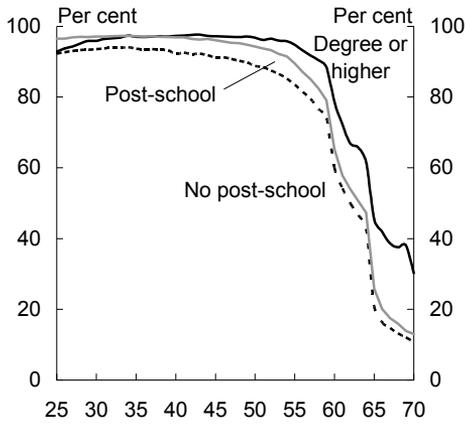


Chart 10: Male participation by age and education, 2006

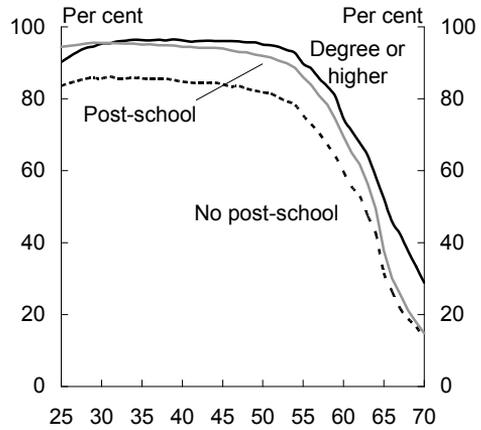


Chart 11: Female participation by age and education, 1981

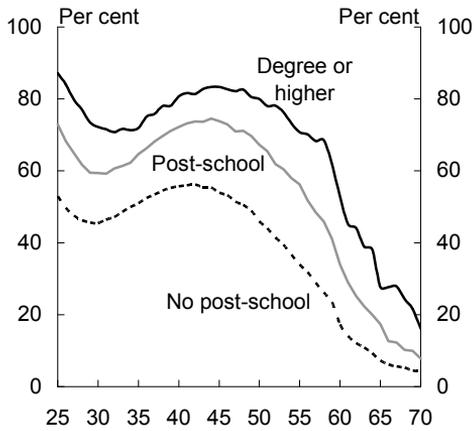


Chart 12: Female participation by age and education, 2006

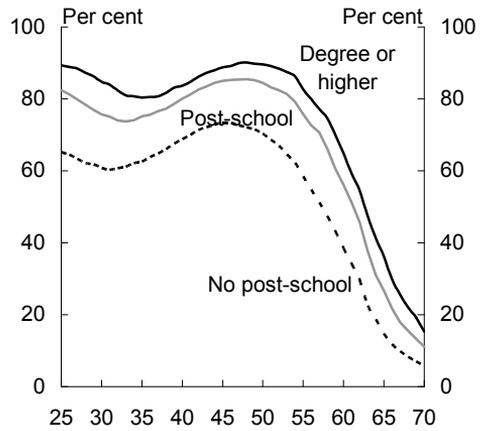


Chart 13: Changes in male participation, 1981 to 2006

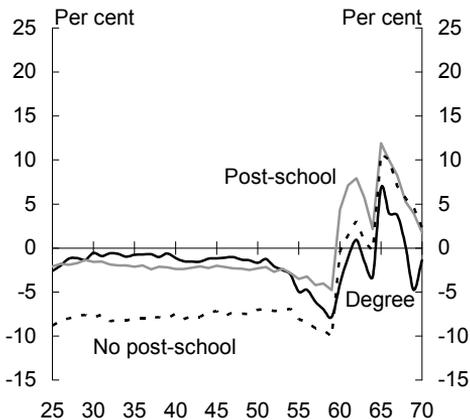
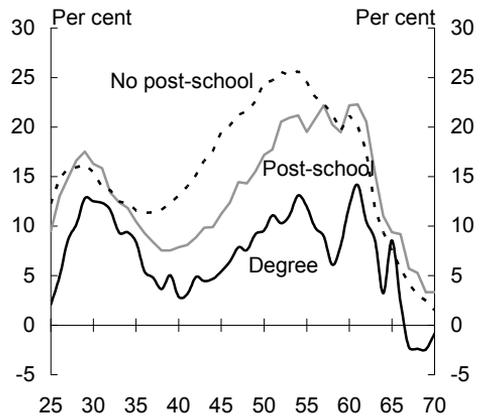


Chart 14: Changes in female participation, 1981 to 2006



Source: Census data.

The pattern of women's participation during childbearing years varies across levels of education, with the dip in participation at childbearing age occurring later in life for more highly educated women (Kennedy, 2007). In addition, the decline in participation also appears to be happening later in life for each educational group in the 2006 data than in 1981.

In particular, the trough in participation at childbearing age is around age 31 (30 in 1981) for those with no post-school qualifications, age 33 (31 in 1981) for those with post-school qualifications and age 35 (32 in 1981) for those with a degree or higher qualification (see Chart 12). This suggests that the participation decisions of childbearing age women with degrees or higher may be diverging from those with lower levels of educational attainment over time (see A2, A4 and A6 in Appendix 1).

The 2006 data also appear to indicate that the magnitude of the reduction in participation associated with childbirth has declined since 1981 (see Charts 11 and 12). The peak to trough decline in participation rates for women of childbearing age has gone from 16.4 percentage points to 8.9 percentage points for women with a degree or higher qualification; from 13.7 percentage points to 7.7 percentage points for women with post-school qualifications; and from 7.6 percentage points to 4.9 percentage points for women with no post-school qualifications.⁸

Concluding comments

In this paper, we updated previous analysis undertaken by Kennedy and Hedley (2003) to include data from the 2006 Census and identified some changes in participation trends. Following a long period of declining participation, men with no post-school qualifications (particularly low-skilled mature age men) have experienced substantial increases in labour force participation in recent years. Participation has continued to rise for all educational attainment groups of women. However, it is worth noting that Australia's participation rates of 25- to 44-year-old women remain relatively low compared with other OECD countries.

We have also examined in some detail the participation outcomes of those with no post-school qualifications, disaggregating this group by the level of secondary education attained. The labour force outcomes of those who have completed year 9 or less are especially poor compared with more highly educated groups, and a significant proportion of people continue to report year 9 or Year 10 as their highest level of educational attainment (12 per cent of 25 year olds in 2006). It seems highly likely that reforms aimed at improving the educational attainment of this group would translate into significantly improved labour market outcomes.

8 As age 25 is the first data point we have available, this is defined as the 'peak'.

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Appendix A

Table A1: Changes in participation rates from 1981 to 2006 (percentage points)

Educational attainment	Age 25 to 70 years	Age 25 to 54 years	Age 55 to 70 years
Males			
Degree or higher	-3.0	-1.0	-1.7
Non-degree post-school	-4.3	-2.4	-0.1
No post-school	-6.7	-7.9	-0.2
Females			
Degree or higher	6.8	8.3	10.0
Non-degree post-school	13.6	13.8	19.4
No post-school	15.1	17.6	14.8

Source: Census data

Participation rates by educational attainment — 1981 to 2006 — Census

Chart A1: Males — degree or higher

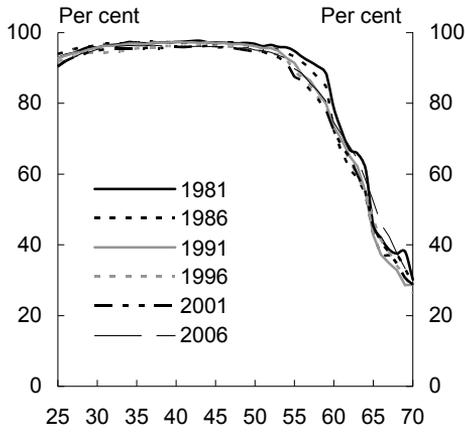


Chart A2: Females — degree or higher

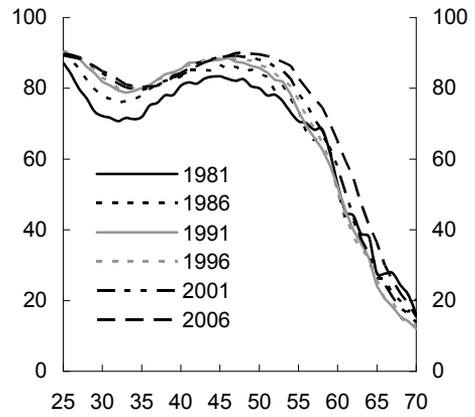


Chart A3: Males — post school

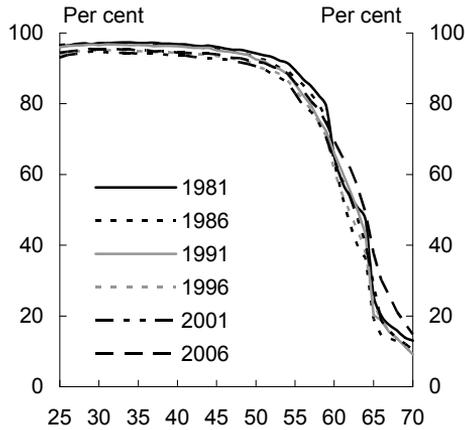


Chart A4: Females — post school

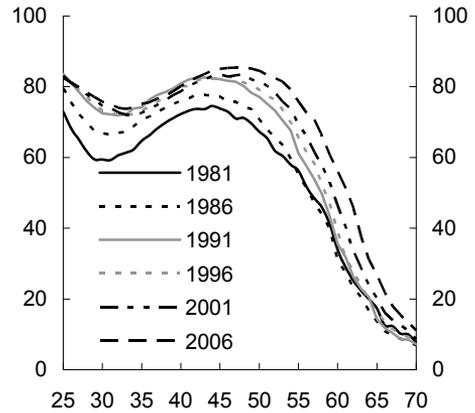


Chart A5: Males — no post school

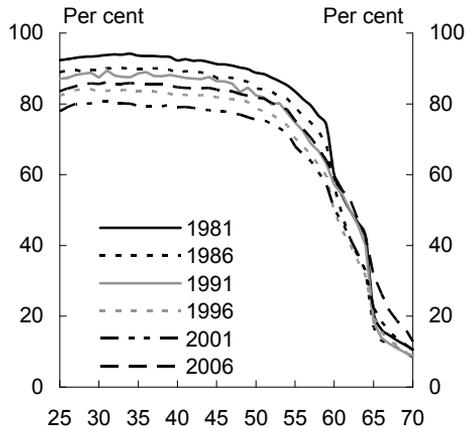
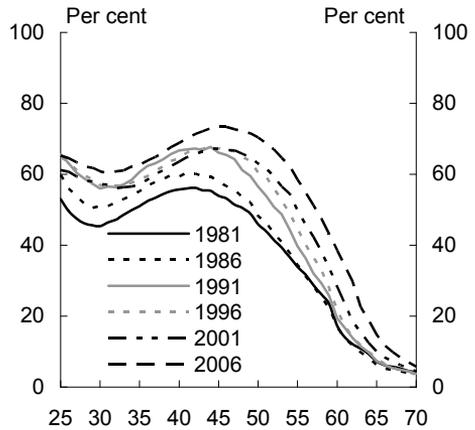


Chart A6: Females — no post school



Source: Census data.

Appendix B

Educational attainment as measured in Australian censuses

For census data, the measure of educational attainment is highest post-school educational qualifications. In this paper we follow Wei's (2001) construction of consistent educational attainment categories for censuses though we reduce Wei's four categories of educational attainment to three – essentially collapsing degree and post degree qualifications into one category.

Table A2: Correspondence of educational attainment categories

Collapsed Educational Attainment Categories	1981 Census	1986 Census	1991 and 1996 Censuses	2001 Census
Degree plus qualifications	Graduate Diploma, Bachelor Degree, Higher Degree	Graduate Diploma, Bachelor Degree, Higher Degree	Postgraduate Diploma, Bachelor Degree, Higher Degree	Graduate Diploma and Graduate Certificate Level, Bachelor Degree Level, Postgraduate Degree Level
Non-degree post-school qualifications	Diploma, Certificate-Trade Level; Certificate-Other Level	Diploma, Certificate-Trade Level; Certificate-Other Level	Undergraduate Diploma, Associate Diploma, Skilled Vocational Qualifications, Basic Vocational Qualifications	Advanced Diploma and Diploma Level, Certificate Level
No post- school qualifications	Not Classifiable, Other, Not applicable	Level of Attainment Inadequately Described, Not Classifiable, Level of Attainment Not Stated, No qualifications, Not Applicable	Level of Attainment Inadequately Described, Level of Attainment Not Stated, Not Applicable	Level of Education Inadequately Described, Level of Education Not Stated, Not Applicable

The Australian Treasury's fiscal aggregate projection model

David Woods, Mary Farrugia and Mitchell Pirie¹

This article describes the Treasury's fiscal aggregate projection model (FAPmod) that underpinned the medium-term fiscal projections published in the 2009-10 Budget. FAPmod will also form the basis of future medium-term fiscal projections and the fiscal projections in the third Intergenerational Report.

1 The authors are from Budget Policy Division, the Australian Treasury. The authors acknowledge the role of Karen Incher in developing the model that is described in the article. This article has benefited from the contributions and comments of Nigel Ray, Luise McCulloch, David Lowe, Tony McDonald and Damien White. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

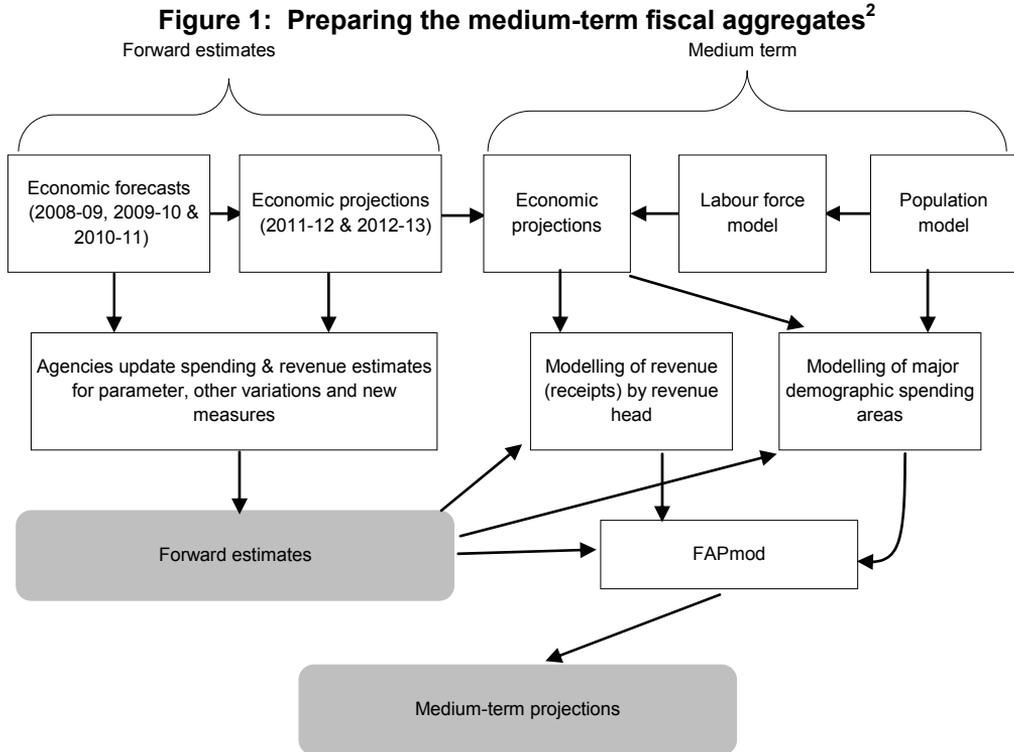
Well developed medium-term fiscal projections help to guide policy development by the government and frame public debate about the sustainability of budget settings. With this in mind the Treasury has developed FAPmod that produces detailed projections of the government's fiscal position over a period of up to 40 years consistent with the requirements set out in the *Charter of Budget Honesty Act 1998*.

FAPmod builds on the work previously undertaken for the first two Intergenerational Reports (IGRs). It significantly adds to that capacity by modelling all the key indicators of fiscal sustainability. FAPmod is based on the three financial statements that are published at each budget and mid-year economic and fiscal outlook. By capturing the dynamics between flow concepts such as the budget balance and stock concepts such as debt, it provides more robust projections. In addition, FAPmod now offers the capacity to model the underlying cash and fiscal balances as well as balance sheet aggregates including net financial worth and net worth over the medium and long term. This capacity allows for a more detailed assessment of the fiscal outlook.

FAPmod was used to produce the medium-term fiscal projections for the period to 2019-20 that were presented in the 2009-10 Budget. FAPmod will form the basis of future medium-term projections and the projections of the fiscal aggregates in the third IGR.

Framework for the Treasury's medium-term fiscal projections

The focus of this paper is the capacity of FAPmod to generate projections of the fiscal outlook. However the FAPmod builds on the analytical framework developed through the first two IGRs. It draws together the outputs of a wide range of separate but internally consistent models in order to generate the fiscal aggregates (Figure 1).



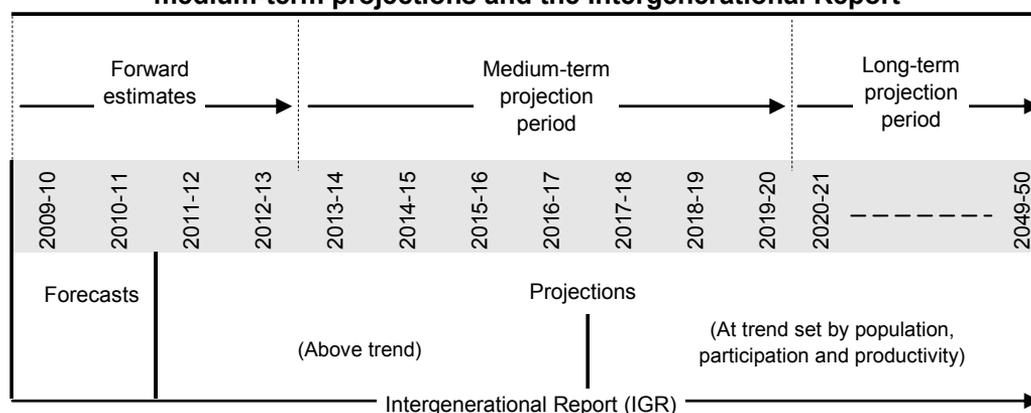
FAPmod takes the fiscal and economic forward estimates published in the budget as its starting point. Beyond the forward estimates, the fiscal projections draw together the population and economic projections developed explicitly within the '3Ps' (population, participation, productivity) framework that underlies the IGR. These projections, in turn, underpin the separate but related models of revenue, health, income support payments, education and training, aged care and unfunded government employee superannuation. As per the previous IGRs, this involves up to eight models that produce projections under the guidance of a senior Treasury steering committee designed to ensure internal consistency and legitimacy of assumptions.

² This diagram shows how the 2009-10 Budget medium-term fiscal projections were developed. The preparation of the IGR projections is broadly comparable.

The medium-term fiscal projections published in the 2009-10 Budget allow for economic recovery. GDP was forecast to grow below trend in the forecast years of 2009-10 and 2010-11, and projected to grow above trend in the projection years of 2011-12 and 2012-13.

The medium-term projections extended this methodology by projecting GDP to grow above trend for a further four years, having the effect of bringing the unemployment rate down by half a percentage point each year until it reached the assumed non-accelerating inflation rate of unemployment (NAIRU) in 2016-17 (Figure 2). Once the NAIRU was reached, GDP was assumed to grow in accordance with changes in population, participation and productivity.³

Figure 2: Projections methodology in the forward estimates, medium-term projections and the Intergenerational Report



The nominal and real GDP growth rates generated through this methodology were an important driver of the projections of receipts and spending that are key inputs into FAPmod.

Medium-term tax receipts were projected by revenue head using income and employment parameters linked to GDP growth – similar to the revenue projections for the forward estimates period.

While the economy is recovering, this approach is more appropriate than adopting a constant tax-to-GDP ratio (the methodology used in the first two IGRs for long-term tax projections) as it allows for the natural recovery of receipts as the economy recovers consistent with the Government's medium-term fiscal strategy and the

3 For additional information about the medium-term projection methodology used for the 2009-10 Budget see 2009-10 Budget, BP1, Statement 3, pg 3-23 and Henry, K, 2009-10 post Budget speech.

commitment that taxation as a share of GDP will remain below the 2007-08 level on average.

Spending was projected to grow at 2 per cent in real terms in years of above-trend growth until the budget was projected to return to surplus. This is consistent with the Government's fiscal strategy.

Once surplus was reached in 2015-16, spending was projected in accordance with the IGR methodology, with health, education, payments to individuals, aged care and superannuation costs modelled to reflect the impact of demographic and other economic parameters. 'Other' payments are projected to remain constant as a proportion of GDP.

Modelling the financial statements in the medium-term fiscal model

FAPmod is designed to replicate an internally consistent cash and accrual accounting system so that all fiscal aggregates can be produced. This means the operating statement, the cash flow statement and the balance sheet are interconnected with changes in one statement affecting the other statements.

The modelled general government sector (GGS) financial statements are:

- the cash flow statement, which identifies how cash is generated and applied in a single accounting period⁴ (to yield the underlying cash and headline cash balances);
- the operating statement, which presents details of transactions in revenues, expenses, the net acquisition of non-financial assets (net capital investment) and other economic flows for an accounting period (to yield the fiscal balance); and
- the balance sheet, which shows stocks of assets, liabilities, and the aggregates of net worth, net financial worth and net debt.

Cash flow statement

Table 1 sets out the modelled and non-modelled components of the cash flow and operating statements.

⁴ Cash transactions are specifically identified in the budget financial statements because cash management is considered an essential function of accrual budgeting.

The *underlying cash balance* (UCB) is the Government's key fiscal aggregate specified in its medium-term fiscal strategy. It is derived from projections of cash inflows and outflows in the cash flow statement.

- The UCB is total receipts (excluding Future Fund earnings) less total operating payments, investments in non-financial assets for policy purposes and finance leases.

Table 1: Cash flow and operating statements

	Receipts (revenue)	Payments (expenses)
Modelled	Tax receipts	Health
	GST	Education
	Other	Payments to individuals
	Future Fund earnings	Pensions
	Interest receipts	Disability Support Pension
	Dividends	Parenting payments
	Interest receipts	Unemployment allowances
	HELP	Austudy
	Term deposits	Youth allowance
	AOFM investments	Family tax benefits
	Other Funds	Child care benefits
		Child care rebates
		Maternity payment (baby bonus)
		Carer's allowance
		Paid parental leave
		Civilian and military superannuation
		Defence ^a
		GST
		CGS interest payments
Non-modelled	Other non-tax receipts	Other payments
	Sale of non-financial assets	Purchases of non-financial assets
	other Interest receipts	other interest payments

(a) Defence payments were not modelled in the 2009-10 Budget and were part of non-modelled payments. For future medium-term and IGR projections defence payments will be modelled.

Total receipts comprise tax receipts and non-tax receipts. Tax receipts are modelled separately and then fed into FAPmod as described above. Interest receipts are modelled endogenously as a function of the assumed rate of return on term deposits and other assets.

Non-modelled receipts (such as other non-tax receipts) are held constant as a proportion of GDP from the end of the forward estimates.

Total payments comprise modelled and non-modelled payments. Modelled payments reflect:

- primarily the modelled spending pressures fed into FAPmod as exogenous inputs after being formulated in the IGR framework described above; and
- interest payments on Commonwealth Government Securities (CGS) that are modelled endogenously as a function of the projected level of CGS in the balance sheet.

Non-modelled payments ('other payments') are held constant as a share of GDP except when the fiscal strategy of holding real growth in overall spending at 2 per cent is in force. For those years the non-modelled payments line becomes a residual item, with the overall spending constraint met by compressing growth in non-modelled spending.

Purchases of non-financial assets are held constant as a proportion of GDP from the end of the forward estimates.

The *headline cash balance* (HCB) is equal to the UCB plus future fund earnings plus net cash flow from investments in public non-financial corporations for policy purposes. It reports on the government's net cash position and is essential for cash management purposes.

- Future Fund earnings are modelled endogenously as a function of the assumed rate of return on the Future fund.

Modelling the operating statement

The operating statement is an accrual statement that is prepared using the same methodology as for the cash flow statement. The majority of modelled expenses are assumed to equal the modelled cash payments, but with the following extra items:

- the concessional loan treatment of student loans (HELP), which has a different impact on the operating statement from the cash flow statement; and
- unfunded superannuation and superannuation interest expenses.

In addition, depreciation is subtracted from net purchases of non-financial assets (derived from the cash flow statement) to provide an approximate measure of net capital investment. The level of depreciation is based on the average rate of depreciation across the forward estimates and is applied to the opening stock of non-financial assets held on the government's balance sheet.

Modelling the balance sheet

The addition of the balance sheet, along with the inclusion of the operating statement, now allows for projections of net financial worth and net worth in addition to net debt. The balance sheet includes both modelled and non-modelled items (Table 2).

The assumptions made on the balance sheet items affect the underlying cash balance and operating statement by allowing for a more sophisticated treatment of:

- the earnings (interest and dividends) on assets such as term deposits and the Nation-building Funds; and
- the cost of servicing liabilities, most notably CGS.

Net debt is, in turn, affected by changes to the cash flow statement (for example an increase in the size of the deficit to be financed), as well as by balance sheet changes that are unrelated to the cash flow statement. For example, the assumed portfolio allocation of the Future Fund assets affects the projections of net debt which, by definition, includes assets such as cash and deposits but excludes other financial assets such as equity.

The balance sheet projections are also sensitive to assumptions about the role of cash reserves held in the Nation-building Funds.

Projections of unfunded superannuation liabilities are sourced from the Long Term Cost Reports (LTCRs) prepared by the Australian Government Actuary.

Table 2: The balance sheet

	Liabilities	Assets
Modelled	CGS Superannuation Other provisions and payables	HELP loans Term deposits Other AOFM investments Future Fund Nation-building Funds Non-financial assets Other receivables
Non-modelled	Other interest bearing liabilities	Other advances paid Other investments, loans and placements Other equities and other receivables

Debt dynamics: CGS and term deposits

Changes in the stock of CGS are typically the major contributor to changes in the government's balance sheet position. For this reason, it is treated in detail in FAPmod.

The stock of CGS across the forward estimates reflects the opening balance, the CGS that matures and needs to be refinanced and the additional issuance required to finance headline cash deficits. Across the forward estimates:

- the interest paid on existing CGS reflects their maturity structure and the interest rate that the CGS were issued at; and
- the interest paid on new issuance reflects the maturity structure of the CGS that are issued and the prevailing yield curve.

Beyond the forward estimates, any further CGS that are issued to finance a headline cash deficit or to refinance maturing debt pays an interest rate of 6 per cent. This interest rate is a simplifying assumption that is consistent with the LTCRs prepared by the Australian Government Actuary, and is also applied to the government's term deposits. When the budget returns to surplus, the FAPmod assumes that surpluses will be used to retire any outstanding CGS and thereafter will accumulate in term deposits.

Beyond the forward estimates, the FAPmod includes the interest payments on CGS in the headline cash balance for any given year and therefore the government's financing task. CGS that are issued within a financial year are assumed on average to make one coupon payment, with two coupon payments assumed to be made on the opening stock of CGS. These payments will affect the size of the headline cash balance in that year. For example, a larger headline cash deficit entails a larger level of CGS which in turn entails a larger public debt interest cost that increases the size of the headline cash deficit. This relationship between the balance sheet and the cash flow statement is iterated until the additional interest payments have negligible effect on the headline cash balance. The same treatment applies to the government's term deposits when CGS is eliminated. This treatment ensures that the dynamics associated with accumulating CGS and term deposits are fully reflected in FAPmod.

Conclusion

FAPmod builds on the work previously undertaken for the first two Intergenerational Reports. It incorporates projections based on long-term economic and demographic trends into the financial framework that underpins the key fiscal aggregates published at each budget. This has two key benefits.

The first benefit is that FAPmod can now provide long-term projections on the full suite of fiscal aggregates that inform policy development and frame the public debate about the sustainability of budget settings. The operating statement and the balance sheet can now be modelled for up to 40 years which allows the preparation of aggregates such as the underlying cash and fiscal balances, net financial worth and net

The Australian Treasury's fiscal aggregate projection model

worth. FAPmod also offers the capacity to continue to model the primary balance and net debt as in the first two Intergenerational Reports.

The second benefit is that the projections of the fiscal aggregates are more robust because FAPmod captures the dynamics between the cash flow statement and the balance sheet that is consistent with the fiscal estimates published at each budget. This means that the impact of the budget balance on the level of government debt and the feedback impact of changes to the level of public debt interest are fully captured by FAPmod.

FAPmod is therefore an important tool that will form the basis of future medium-term projections of the fiscal estimates as well as the fiscal aggregate projections in the third Intergenerational Report.

Raising the level of productivity growth in the Australian economy

Australian Treasury

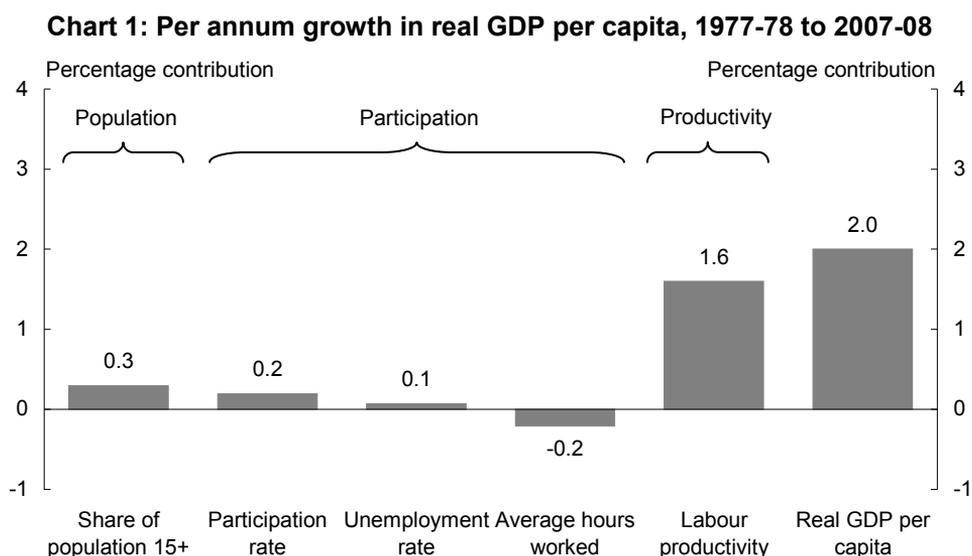
Treasury submission to the House of Representatives Standing Committee on Economics Inquiry into raising the level of productivity growth in the Australian economy.

August 2009

Introduction

Productivity is a measure of the rate at which inputs, such as labour, capital and raw materials, are transformed into outputs. The level of productivity can be measured for firms, industries and economies. Productivity growth implies fewer inputs are used to produce a given output or, for a given set of inputs, more output is produced.

Productivity growth is important for economic growth and higher living standards. Looking at the contributions of population, participation and productivity to growth in real GDP per capita over the past three decades in Australia, it is clear that productivity has accounted for most of the increase in real incomes (Chart 1). Productivity will continue to be the key determinant of living standards in the decades ahead. Given this, effective policies to lift productivity are important. Productivity improvements will also be important in helping Australia adapt to the challenges of an ageing population and climate change.



Source: ABS cat. no. 5206.0, 3201.0, 3105.0.65.001 and 6202.0 and Treasury.

Productivity growth stems from a myriad of sources. It can come from scientific and technological advances that provide new products and processes, the adaptation and diffusion of new products and processes, or new management practices, organisational structures and work arrangements. In recent decades, information and communications technology (ICT) has been a key source of new developments leading to improvements in productivity as firms adopted ICT and then adapted their production processes. Productivity improvements can come from advances made within Australia or from the adoption of advances made overseas.

Public policy settings also play a vital role in achieving productivity growth as they affect the environment in which firms operate. Policy is important for improving the efficiency of resource use in the economy as it can support well-functioning markets, remove distortions and enhance flexibility, responsiveness and dynamism at the level of the firm and the individual. Policy can also promote an operating environment in which workers and firms have the incentives and the capacity to continually adapt to take advantage of opportunities, which in turn improves productivity. Addressing market failures in the areas of infrastructure, innovation and human capital also provides an important avenue for productivity gains.

Productivity measures

Productivity is difficult to measure directly because it comes from a variety of sources. As a result, it is calculated as a residual – the amount of output growth that remains after allowance is made for the contribution of growth in inputs (IC 1997). At its simplest, the level of productivity is measured as the ratio of output to one or more inputs; for example, the number of vehicles produced per worker or the number of tonnes of grain produced per hectare.

There are two main measures of productivity: labour productivity and multifactor productivity.

Labour productivity is calculated as real GDP per hour worked. It is the most commonly used measure of productivity and the most straightforward to calculate. Labour productivity is not purely a measure of the efficiency of labour as it is affected by changes in the amount of capital available per worker per hour worked (increases in capital per worker are known as capital deepening) as well as changes in the efficiency with which labour and capital are combined in the production process.

Multifactor productivity (MFP) is measured in terms of real GDP per unit of labour and capital. MFP is a better reflection of overall efficiency than labour productivity as it controls for changes in both labour and capital inputs. It is also helpful in disentangling contributions of different inputs to growth and can provide important insights into past growth patterns and future growth potential.

In practice, MFP reflects technological changes, as well as a range of non-technological factors such as industry and firm level adjustment, economies of scale and cyclical effects (OECD 2001a). MFP can also be affected by differences in the treatment of labour and capital input. Labour input is only included where labour is utilised, that is, where hours are actually worked. Capital input, however, reflects the capital stock available to be used, whether or not it is actually employed.

Productivity measures have a number of limitations (ABS 2005a).¹

Productivity is only measured well for the market sector. The market sector is where prices provide an indicator of quality that can be used to compare the value of new goods and services to the old versions that they replace. The market sector comprises two-thirds of the economy. In the non market sector – health, education, defence, government administration, property and business services, and personal and other services – it is difficult to separate price changes from changes in the quality and quantity of services. This means care needs to be taken when using estimates of non-market sector productivity.

Care is also required when assessing the impact of changes in the quality of capital and labour on productivity. For example, rising education qualifications can improve problem solving skills, which improve the productivity of labour. However, input quality changes can be difficult to measure and productivity estimates may not fully reflect these changes.

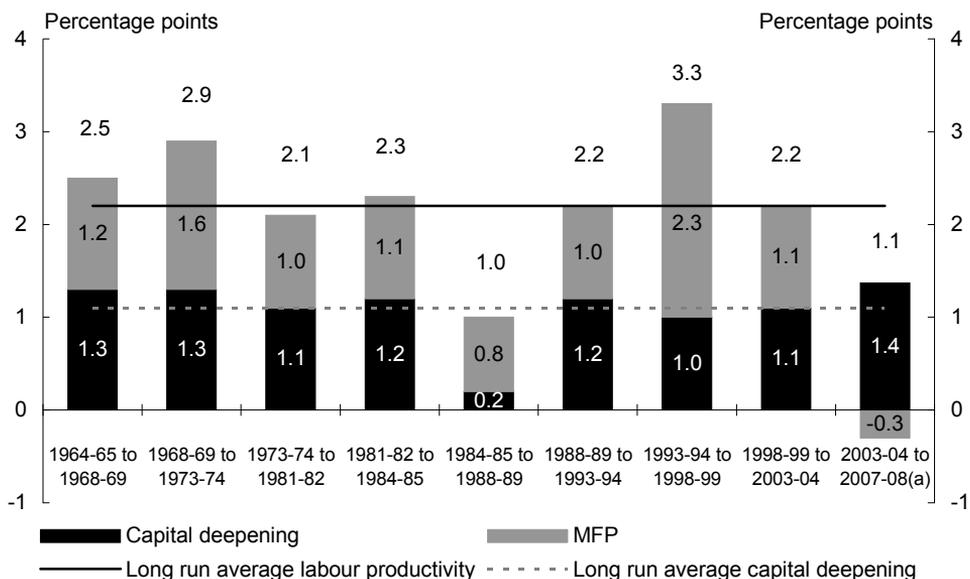
Productivity estimates also exhibit significant variation from year to year due to a combination of measurement error, real economic shocks, and the cyclical nature of productivity that arises from employment growth lagging output growth. This means it is hard to infer productivity trends from short term movements. As a result, average productivity growth over a number of years, whether for Australia or other countries, provides a better indication of trend productivity growth.

Trends in Australia's productivity

Australia's productivity growth – measured in terms of both labour productivity and multifactor productivity – has slowed in recent years. In the latest (incomplete) cycle, growth in labour productivity in the market sector has averaged 1.1 per cent per year, which is half its long-run average (Chart 2). Falling multifactor productivity has driven this decline. In contrast, the rate of capital deepening has averaged 1.4 per cent a year, reflecting strong business investment as a result of Australia's recent terms of trade boom.

1 A broad limitation with productivity measures flows from the use of GDP in their calculation. The limitations in GDP measurement automatically apply to productivity measures. In addition to the difficulties in measuring variations in quality and new goods, GDP only counts market transactions which excludes a wide range of activities such as leisure as well as those with harmful side effects.

Chart 2: Productivity growth in the market sector



(a) Productivity estimates for an incomplete cycle may be affected by different capacity utilisation rates.
 Note: Average annual growth rates for long term averages include data from 1964-65 to 2007-08.
 Source: ABS cat. no. 5204.0.

An examination of market sector MFP by industry contribution indicates that the mining, agriculture and electricity, gas and water industries have played a significant role in the recent slowing in Australia’s productivity growth.

It is not surprising that productivity in the mining sector has fallen as a result of Australia’s recent terms of trade boom (Henry 2006). This rapid shift in relative prices in the Australian economy has seen strong increases in mining investment and employment in the mining and construction industries. In the seven years to 2007-08, real annual mining investment increased five-fold and mining and construction employment rose by around 50 per cent.

The growth in inputs in the mining sector has not yet been fully reflected in increased output volumes. In part, this is likely to reflect lags between the time when investments are made and when capital comes on stream. Comparisons of the current mining boom with the previous boom in the late 1970s and early 1980s indicate that it took around five years for the increase in mining investment to translate into higher growth in output (Gruen and Kennedy 2006, Ewing et al 2007).

Resource depletion has also had a significant adverse effect on long-term mining MFP in recent years. Higher prices for mineral resources have made mining resources with lower mineral yields economically viable. While this boosts income and profitability, it reduces measured productivity as productivity estimates do not recognise lower ore

quality. The combined effects of the commodity price boom and depletion of oil and gas reserves on mining productivity have subtracted around 0.3 percentage points per year from market sector MFP over the past five years (Topp et al 2008).

The agricultural sector has also detracted from Australia's overall productivity performance as a result of drought. So far this decade, agricultural MFP has fallen at an average annual rate of around 1 per cent. This compares with average annual rises of over 3 per cent in the 1990s. The Productivity Commission (2008) estimates that the combination of drought on agricultural output and the terms of trade related slowdown in mining productivity explains more than half of the fall this decade in Australia's multifactor productivity growth from its long-term average.

Electricity, gas and water supply has also detracted from measured productivity growth. Following rapid productivity growth in the 1990s, associated with a range of microeconomic reforms, this sector has detracted around 0.7 percentage points from market sector MFP growth so far this decade (or about 0.1 percentage points per year). The reasons for the significant declines in productivity in this sector are unclear. Moreover, the Productivity Commission (2008) notes that official estimates are not easily reconcilable with those from other studies of electricity and gas suppliers.

Nevertheless, even allowing for the special factors in these sectors, it is clear that the pace of productivity growth in Australia has slowed since the rapid surge, particularly in MFP, in the productivity cycle of 1993-94 to 1998-99.

International comparisons of Australia's productivity

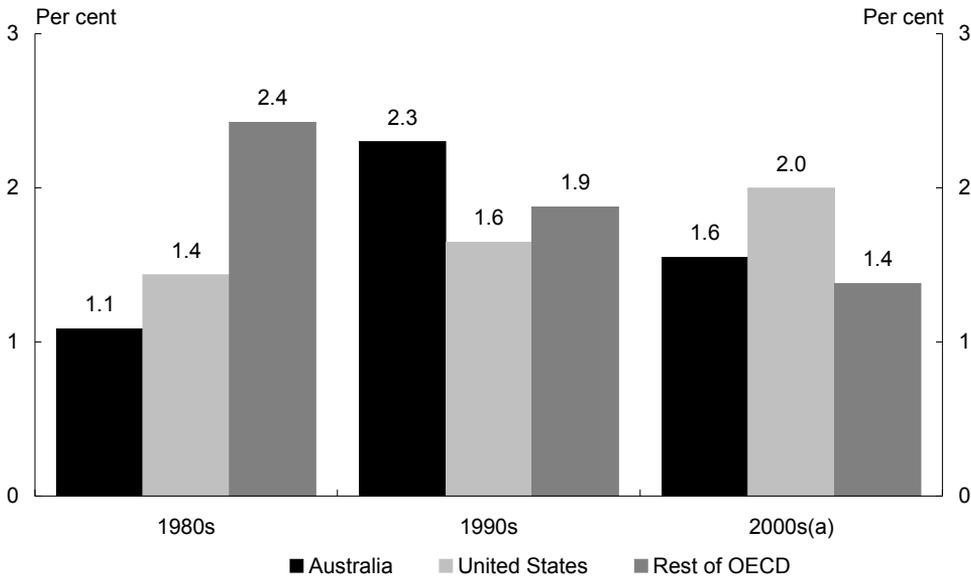
International productivity comparisons are useful in assessing Australia's relative productivity performance. Comparisons with the United States are common as it is the largest economy in the world, with among the highest GDP per capita.

Australia's productivity performance has steadily declined since 2000 relative to the United States. However, productivity growth has kept pace with that experienced in the rest of the OECD (Chart 3). Average annual labour productivity growth in Australia has been 1.6 per cent in the current decade, higher than the 1.4 per cent in OECD countries (excluding Australia and the US).

International comparisons should be used with some caution as differences across countries reflect more than differences in the factors typically driving productivity performance. Other factors that affect comparisons include the stage of development,

geography, policy settings, comparative advantage and measurement issues.² The different set of circumstances that each country faces may mean that matching the productivity performance of other countries is infeasible and that the potential for catch-up is limited.

Chart 3: Annual average labour productivity growth for Australia, US and the OECD



(a) Includes data up to 2008.

Note: Data are GDP per hour. Rest of the OECD are the 24 longest standing OECD member countries excluding Australia and the US. Data for other OECD countries do not extend to 1980.

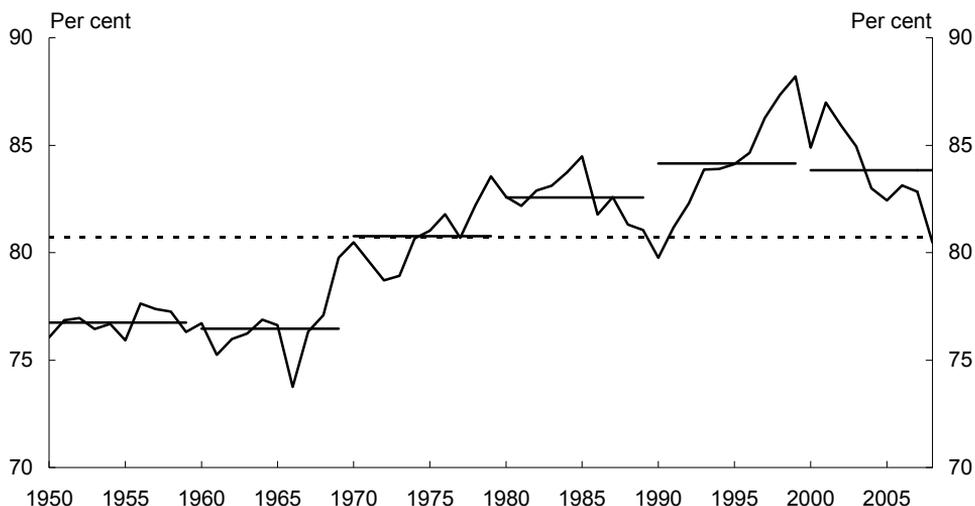
Source: The Conference Board and Groningen Growth and Development Centre, *Total Economy Database*, June 2009.

For example, Australia’s ability to close the productivity gap with the United States is limited by geography. Australia is located further away from world markets and has a smaller population that is more sparsely settled across the continent. This means Australia is not able to benefit from scale, specialisation and trade to the same extent as the United States. Several empirical studies have attempted to quantify the impact of geography on productivity (Battersby 2006, Boulhol and de Serres 2008, Dolman, Parham and Zheng 2007, Wilkie and McDonald 2008).

2 International comparisons of productivity are affected by a number of measurement issues, including differences in underlying assumptions about sector coverage and the pricing of outputs and inputs. Problems can also occur when countries’ business cycles are not synchronised, as cross-country comparisons would be based on different points in the productivity cycle.

In assessing Australia's potential productivity level relative to the United States, the data show that Australia's relative position has fallen from its highs of the 1990s, but remains around its long run average (Chart 4). Australia's productivity level rose to 88 per cent of the US level in 1999, but has since declined to around 80 per cent of the US level in 2008.

Chart 4: Australia's productivity level relative to the United States



Source: The Conference Board and Groningen Growth and Development Centre, *Total Economy Database*, June 2009.

Microeconomic reform and productivity

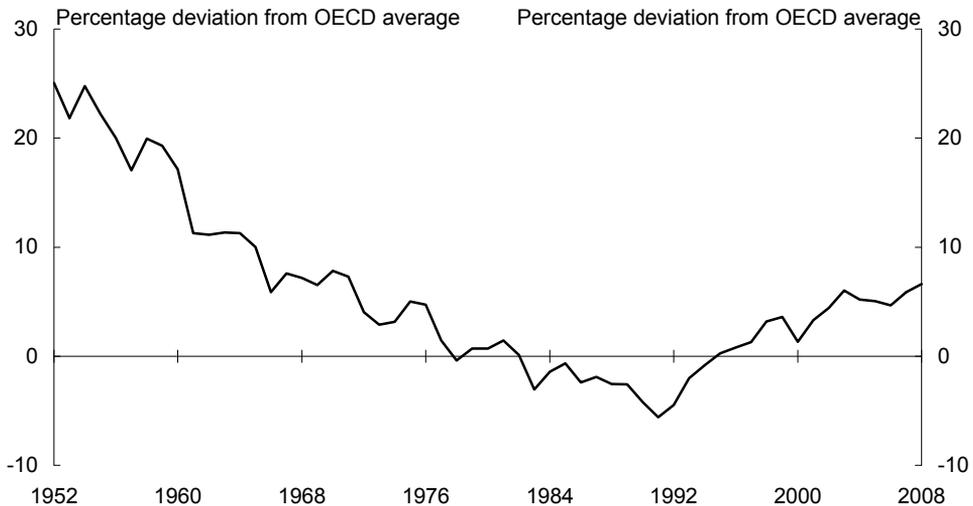
Empirical studies suggest that the microeconomic reforms of the 1980s and 1990s contributed to the surge in Australia's productivity growth in the mid to late 1990s. The primary objective of the microeconomic reforms introduced in Australia during this period was to improve economic efficiency by correcting externalities and other market failures, establishing and protecting property rights and supporting a competitive market environment. Improvements in economic efficiency result in increased living standards and can also lead to productivity gains.

Economic reform in Australia

Economic reform in Australia during the 1980s and 1990s resulted from a recognition that longstanding government policies and institutions, including highly regulated product and labour markets, high levels of industry protection, centralised wage determination and government ownership of large sections of economic infrastructure, were major contributors to the sustained decline in Australia's relative living standards in the 1960s, 1970s and 1980s (Chart 5).

Australia's economic reforms removed a number of government interventions and placed a greater emphasis on markets to allocate resources, provide greater choice to consumers, and sharpen incentives to be more productive. The reforms began with unilateral reductions in import protection which included the abolition of import quotas and phased reductions in tariff assistance as well as liberalisation of financial markets, relaxation of capital market controls and the floating of the exchange rate in 1983.

Chart 5: Difference between Australian and OECD average GDP per capita



Note: OECD includes the 24 longest-standing member countries, which includes Australia.

Source: The Conference Board and Groningen Growth and Development Centre, *Total Economy Database*, June 2009.

The heightened competitive pressure from these changes in turn prompted the introduction of labour market reforms, and various institutional and regulatory reforms to promote more efficient delivery of infrastructure services. Medium-term frameworks for monetary and fiscal policy were also developed to promote macroeconomic stability.

In addition, the financial services sector and taxation have been subject to more or less continual reform since the early to mid-1980s, including the introduction of the goods and services tax in 2000 and a new prudential regulation system.

Significant product market and competition reforms were also introduced, culminating in the introduction of National Competition Policy (NCP) in the 1990s. The purpose of NCP was to forge a national market by using a more coordinated approach of promoting competition across different jurisdictions. NCP was just the beginning of ongoing competition reforms, with reforms in infrastructure markets still being implemented today.

Reforms in the late 1980s and 1990s brought greater product market competition, labour market flexibility, macroeconomic stability and financial market efficiency (PC 2005). These changes played an important role in bringing about the reorganisation of production and work practices to enable firms to reduce costs and take advantage of developments in technology, thereby enhancing productivity growth in the 1990s. Better regulation of infrastructure industries also yielded large cost savings.

The impact of economic reform

A number of studies have found evidence of the positive impact of reforms on Australia's economic and productivity performance in the 1990s. The Productivity Commission (2005) found that NCP and related reforms directly contributed to productivity and price changes in infrastructure sectors during the 1990s, increasing Australia's GDP by 2.5 per cent or \$20 billion (in 2005-06 dollars).

A study by the IMF found that trade liberalisation, labour market reform and increased competition lifted Australia's trend MFP growth in the 1990s by between 0.5 and 0.9 of a percentage point (Salgado 2000). Another IMF study also provides evidence that intensified competition through the reforms have driven the more efficient use of resources through new work practices and encouraged the more rapid uptake of new technologies (Tressel 2008).

Not only did the economic reforms contribute to the productivity surge of the 1990s, they also benefited individuals and businesses in a number of other ways (PC 2005). Reforms significantly reduced the prices of goods and services such as milk, electricity and telecommunications. Households also benefited indirectly from lower prices for other goods and services, which were made possible by cheaper infrastructure inputs from businesses. The competitive environment fostered by NCP and other reforms has also helped to improve service quality and reliability, and led to an expansion in the range of products and services available to consumers (Banks 2004). NCP reforms also stimulated employment and wages, which further benefited individuals.

Importantly, the benefits of NCP and related reforms have been spread across the community, including rural and regional Australia (PC 2005). Modelling of productivity and price changes in key infrastructure sectors during the 1990s suggests a consequent increase in regional output (and thus income) in all but one of the 57 regions across Australia (PC 2005).

The reforms Australia has implemented also generate ongoing benefits. In particular, greater market competition and microeconomic flexibility have permanently improved firms' operating environment, promoting the ongoing search for and diffusion of more productive processes and better products (PC 2008). This highlights the benefits for

productivity and economic performance more broadly from a continual process of economic reform.

Public policy and productivity

A country's public policy framework plays a number of important roles in improving productivity. These roles can be broadly classified as promoting macroeconomic stability, providing appropriate microeconomic frameworks, and intervening to undertake direct investment where it is warranted.

A stable macroeconomic environment increases the level of certainty that firms and individuals have in making decisions in the economy. By ensuring macroeconomic stability, public policy frameworks can promote economic growth and support price stability. This improves the efficiency of the price mechanism in allocating resources to their most productive use, which is positive for productivity.

Policy, institutional and regulatory frameworks can also have a positive influence on productivity. These factors can promote an open and competitive market, where resources are allocated to their most productive use, there are incentives to develop and adopt new products and processes, and firms have the flexibility to adjust to changing circumstances. Appropriate price signals and incentives improve the decision making of firms.

The Government also has a role in investing directly in infrastructure, innovation and human capital. Such direct investment may be necessary where markets for a good or service are incomplete, goods have public good characteristics, or there are positive spillovers associated with the production of a good or service. In each of these cases the provision of the good or service by the private sector is likely to be below the socially optimal level and additional public provision may be needed to ensure optimal outcomes.

The Government outlined its view of the adequacy of investments in infrastructure and human capital in Statement 4 of the 2008-09 Budget. This Statement also provided guidelines for optimal decision making in these areas.

The Statement identified areas where reform of Government policy can help to expand Australia's productive capacity over time. The objective is to build a more efficient and equitable economy, with high levels of productivity and participation, that is able to deliver a higher level of overall wellbeing. The Statement focused on some of the broad elements that could contribute to an improved policy and institutional framework for better utilising Australia's existing infrastructure stock and skill base, and for improved investment decisions in these areas in future years.

Infrastructure

Infrastructure is the physical capital that underpins economic and social interactions. It includes: transport infrastructure, such as roads, railways and ports; telecommunications infrastructure, such as phone lines and internet connections; energy infrastructure, such as electricity generators and power lines; water infrastructure, such as dams and pipes; and social infrastructure, such as schools, hospitals and libraries.

Infrastructure investment is important for productivity. In addition to increasing the volume and quality of Australia's physical capital stock, which in itself is an element of productivity growth, it contributes to productivity by facilitating private sector production and distribution. Infrastructure can facilitate trade and the division of labour, improve market competition, promote a more efficient allocation of activity across regions and countries, encourage the diffusion of technology and the adoption of new organisational practices, and provide access to new resources. Public infrastructure investment can also contribute to more productive public sector service delivery.

There are a number of studies showing that infrastructure investment can lead to an improvement in output. The IMF estimates that, on average across 22 OECD countries, increasing the public infrastructure stock by one per cent leads to an increase in output by around 0.2 per cent (Kamps 2006). The results for Australia are around the OECD average.

Recent OECD research suggests that investment in physical infrastructure can boost long-term economic output by more than other types of investment (OECD 2009). The OECD research highlights that infrastructure investment needs to be effectively targeted to maximise overall economic benefits. In addition to making sound decisions on projects, this also depends on having appropriate regulations and price signals in infrastructure markets.

To improve processes around the assessment of infrastructure investment decisions, the Government established Infrastructure Australia to drive the development of a long term, coordinated approach to national infrastructure planning and investment and to identify projects with high overall benefits.

Following its audit of the nation's transport, energy, communications and water infrastructure, Infrastructure Australia developed a list of priority infrastructure projects to help inform governments, investors and infrastructure owners in planning and coordinating long term infrastructure investment priorities on a national basis. The prioritisation methodology employed provides an integrated framework that combines a wide range of considerations with an emphasis on cost-benefit analysis.

The advice of Infrastructure Australia was reflected in the \$22 billion nation building infrastructure program announced by the Government in the 2009-10 Budget.

Australia has also made substantial progress in reforming its infrastructure markets, most notably through the adoption of National Competition Policy in 1995. These reforms have improved efficiency across a range of areas of public infrastructure and the resulting increases in the productivity of Australia's stock of infrastructure have helped to raise Australia's potential output.

However, the Productivity Commission (2005) has identified a number of remaining impediments to the operation of competitive infrastructure markets. These impediments inhibit efficient infrastructure development and use. They also highlight the need to adopt further measures that facilitate the efficient allocation of resources and minimise waste. Such measures include pricing and regulatory reforms that encourage private sector participation, and the promotion of efficient outcomes in public investment through the development of methodologies for making efficient and transparent investment decisions. The Productivity Commission (2006) has estimated that improving productivity and efficiency in energy, transport, infrastructure and other activities could, after a period of adjustment, increase GDP by nearly 2 per cent.

In summary, provision of infrastructure services can boost productivity both directly and indirectly. To achieve maximum benefits from public investments in infrastructure, it is necessary to pursue microeconomic and institutional reforms that create conditions where new and existing infrastructure is fully utilised and efficiently priced. Where governments invest in infrastructure assets, it is essential that they seek to maximise economic and social benefits, consistent with best practice for public infrastructure investment.

Innovation and R&D

Innovation is another key driver of productivity. Innovation refers to the introduction of new or improved goods and services and the implementation of better processes. It can include the development of new technology, an adaptation of existing technology to a new use or may be non-technological – for example through organisational and managerial change (ABS 2006). A major input into innovation is research and development (R&D), which increases the stock of knowledge in the economy.

Innovation by its nature is not easily measured. Various measures of R&D spending are commonly used as proxies for the level of innovation in an economy. While R&D spending and innovation are likely to be correlated, the limits on the use of expenditure on R&D to measure innovation are sometimes forgotten in analysis. This results in the underestimation of the actual level of innovation being undertaken within an economy.

Innovation is affected by knowledge spillovers (PC 2007). Spillovers arise because researchers cannot appropriate the full returns from any new knowledge and generating new knowledge may have high upfront fixed costs relative to the incremental benefits of diffusion of the knowledge. A good example of this is high-risk, experimental research (referred to as basic research), where the high upfront cost generally outweighs the often uncertain returns. As a result, it may be beneficial for Government to correct underinvestment by the market through policy intervention.

In this context, the Government recently announced its response to the Cutler review on innovation. This included a simplified and better targeted tax credit for business expenditure on R&D.

A competitive and stable economy is important for encouraging innovation. Competition improves the incentives to innovate and encourages the flow of information between firms and across economies. The Productivity Commission (2008) has noted that market competition is the main driver of innovation and its diffusion throughout the economy.

Macroeconomic stability is also important for innovation because it provides a more certain operating environment for firms. Several OECD studies have demonstrated that stable macroeconomic policies have a critical role to play in enabling innovations that lead to higher economic growth and productivity (OECD 2001b and Box 2009).

On the other hand, increased funding or tax concessions for specific R&D will not necessarily have a significant impact on productivity (PC 2007). Specific R&D will only increase productivity up to the point at which the cost of encouraging additional innovation exceeds the benefits to the economy of that innovation.

As the Productivity Commission (2008) notes, consideration of the net benefit of any intervention should not only assess whether the benefits exceed the costs but assess the distributional effects of distorting the resource allocation. An appropriate policy intervention will be well-targeted to maximise those activities that have public benefits and to minimise adverse behavioural consequences and unintended effects. Policies should have appropriate eligibility criteria and their effectiveness should be assessed on an ongoing basis.

Determining whether Australia is achieving an optimal level of innovation is difficult. Simple international comparisons of overall expenditure can be particularly misleading. The appropriate level of public support for any individual country will be influenced by a combination of factors, such as industry structure, country size, firm size and wage rates, which is unique to that country. Some attempts have been made to examine this. Once these factors are accounted for, there is little difference between

Australia's public support for R&D and countries with which Australia is often compared (PC 2007, Davis and Tunny 2005).

Human capital

Human capital accumulation refers to the growth in the stock of human capital and captures the skills, abilities and knowledge acquired by workers through education and experience. It affects productivity growth both directly and indirectly. A worker's personal productivity is largely determined by their educational attainment, skills and experience. Human capital also interacts with other aspects of the production process by influencing the rate of innovation, the adoption and adaptation of technology and the accumulation of physical capital.

Education and training can contribute to improvements in both productivity and participation in the workforce. The basic skills acquired in early childhood and school years, particularly literacy and numeracy, are the necessary foundation for developing higher-order skills that contribute to a more productive workforce. In addition, increases in educational attainment may translate into increases in aggregate productivity that exceeds changes in the productivity of individual workers reflected in wage changes (PC 2006).

Microeconomic evidence suggests that, on average, higher levels of education increase productivity and earnings for individuals. Studies on private returns to education and training for Australia and OECD countries generally indicate high positive private rates of return to education. For example, in Australia the latest available ABS data indicate that average weekly full time earnings for people with Certificate III level qualifications and above are at least 10 per cent above, and up to double, those without these qualifications (ABS 2005b).³

Evidence based on macro data is more difficult to interpret. Aggregate data shows no clear link between (upper secondary) educational attainment and labour productivity across OECD countries (OECD 2008). However, this may reflect that measures of upper secondary school attainment are an imperfect measure of quality. This highlights the importance of focusing on the quality of education outcomes, as well as the years of education.

There is a role for Government in supporting the development in skills and human capital through formal education and training. Ensuring that the economy is flexible is

3 In part, these positive outcomes for individuals with higher educational attainment are likely to reflect unmeasured effects of individual traits that also shape labour force activity, such as motivation and ability (PC 2008). Nevertheless, studies that take into account these factors point to high private rates of return to education and training (Leigh and Ryan 2008).

also important. Much of the skill acquisition and human capital development that occurs in the economy takes place on the job through 'learning by doing' (Mincer 1962). This component of human capital development depends on the flexibility and speed with which firms and individuals respond to market signals. These factors are affected by broader microeconomic reforms to product and factor markets.

There are a number of policy challenges in ensuring Australia's education and training systems are effective and responsive. Demand-driven education and training systems are more likely to improve productivity outcomes over time. An important challenge for policy is to ensure that expected private rates of return (both pecuniary and non-pecuniary) play as large a role as possible in guiding decisions by individuals as to whether to undertake training and in which areas.

A focus on flexibility is also important. Flexible and responsive education and training systems allow educational institutions to alter the quantity and mix of services provided as individual preferences and needs change through time, responding to relative wage signals in the market place. Regulatory and policy structures that allow the labour market to better match existing skilled labour to demand provide some safeguards against skill shortages arising and assist in ameliorating any that do arise.

Flexibility can ensure that resource allocation in the education sector can shift through time in response to the changing economic environment. If the education system is too rigid there is a risk it may create supply bottlenecks in the future. In a well functioning labour market, wages increase for scarce skills that are in demand, which in turn provides an incentive for people to obtain these skills.

Conclusion

Productivity growth is a key determinant of living standards in the long run and it has contributed significantly to Australia's GDP per capita growth over the past three decades. Ongoing improvements in productivity performance are crucial for Australia's future economic prosperity.

Ultimately, improvements in productivity come from the decisions of thousands of firms in many industries in developing and adopting new products and processes and changing management, organisation and work arrangements. Thus, the Government can best promote productivity growth by ensuring that the environment in which firms operate facilitates sound decision making.

Policies that support a stable macroeconomy and a competitive market will ensure that firms are subject to external pressures and market discipline, which provide incentives to perform well and continually search for new products and processes. The

Government will also need to ensure that firms have the flexibility to adjust to changes in their operating environment as they pursue productivity improvements. Policy also needs to build the capabilities that firms need – human and knowledge capital and infrastructure – to make changes to improve their productivity. Carefully designed and targeted investments in infrastructure, R&D and innovation, and human capital can provide an important avenue for productivity gains where they address market failures.

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Key themes from Treasury's Business Liaison Program

As part of Treasury's Business Liaison Program, staff met with over 30 organisations in Sydney, Melbourne, Brisbane and Perth during August 2009.¹ Treasury greatly appreciates the commitment of time and effort by the organisations that participate in the program.²

Conditions in the June quarter had surpassed expectations formed earlier in the year, although the improvement in many sectors was off a low base. Businesses remained cautious but noticeably more confident. The retail and mining sectors had experienced the strongest conditions which had in turn supported employment to a greater extent than in other sectors. Private non-residential building activity was identified as an area of continued weakness, with very little new work feeding into the pipeline.

1 A detailed explanation of the Treasury Business Liaison Program is provided in the Treasury *Economic Roundup*, Spring 2001.

2 This summary reflects the views and opinions of participants in the liaison program, which are not necessarily shared by Treasury. While Treasury's evaluation of the economic outlook is informed by findings from business liaison, a much wider range of information and data are utilised to ensure a rigorous assessment of the Australian economy. Treasury aims to meet with a broad cross-section of the business community over time. Companies are invited to register their interest in participating.

Trading conditions

The retail sector had enjoyed a robust June quarter, benefiting from the significant monetary and fiscal stimulus. Grocery retailers, department stores and hardware stores reported sustained growth in sales, with recently reported annual results supporting the view that lower interest rates and stimulus payments had underpinned activity and confidence in the sector.

The growth in sales evident in the March and June quarters had been reversed to a small degree early in the September quarter. However, with the rebound in confidence since earlier in the year, most retailers were relatively optimistic about the second half of 2009. However, the impacts from winding back of fiscal stimulus were noted as generating some uncertainty in the near term.

Business to business suppliers reported that production activity had probably bottomed in the June quarter, with stronger sales recorded in July and August. There was also a noticeable surge in sales in the month of June relating to the temporary taxation measures encouraging investment in items of plant and equipment. Looking through the associated 'bring forward' in activity, contacts were relatively optimistic about a broadly based recovery in business demand being underway, albeit off a low base.

In aggregate, private construction activity had largely held its ground, although there were considerable sectoral and regional differences. Engineering construction and public works were the clear sources of strength with major projects, fiscal stimulus and state capital works combining to support activity. House building activity had also picked up, particularly at the lower priced end of the market, and apparently more so in Victoria than elsewhere. However, higher density dwelling construction and commercial property generally were experiencing the weakest conditions. Contacts reported expectations of continued declines in private construction work, with the mining and public sectors welcome sources of ongoing support.

The manufacturing sector was not yet exhibiting clear signs that the inventory cycle had turned, with production remaining well down from last year's levels. Contacts suggested that the retail supply chain had largely avoided significant de-stocking due to robust demand, and that weaker business spending might be responsible for the run down in inventories and weaker production and imports. Manufacturing activity levels had bottomed following steep falls, with several contacts believing that although the outlook was not particularly positive, the worst was now behind them.

Despite the fall in commodity prices, producers of Australia's key mineral and energy export commodities – coal, iron ore and LNG – reported sustained high levels of production and exports. Elsewhere in the mining sector, indications were that activity

remained well below the peaks of mid 2008, though recent commodity price movements were seen as indicative that the one to two year outlook might be more positive than expected earlier in the year.

Domestic and international tourism had declined significantly, and key tourism regions such as Far North Queensland and South East Queensland were experiencing a more pronounced impact on activity and employment.

Business credit and investment

Access to finance had stabilised although tighter lending practices remain a key concern for many businesses, particularly those exposed to the commercial property and medium- to high-density residential property sectors. Contacts suggested that the major banks' property exposures may be approaching their upper limits, although there appeared to be regional variations in this theme. In contrast, mining and energy contacts generally reported a degree of comfort in terms of access to finance due to the financial strength of large foreign partners and ability to access international capital markets.

Contacts noted the cost of business credit remained high and this was supporting heightened activity in capital markets as firms pursued alternative sources of finance, together with internal capital management (e.g. delaying discretionary expenditure, lowering distributions, issuing new equity, underwriting dividend reinvestment plans).

Outside the mining sector, businesses were anticipating modest, if any, growth in capital expenditure in 2009-10, pending a clearer view of economic and financial conditions. Finance had also been a constraint in the rural sector – affecting both spending and asset values – and a return to better conditions was viewed as likely.

Capacity issues

The extent to which the Government's stimulus packages were offsetting weaker private sector demand in the building construction sector was explored in some detail during this liaison round. A number of major construction firms indicated that stimulus projects were helping to fill gaps in their planned work schedules; but activity remained down on last year's levels. Most expected further weakness in private non-residential building activity with an associated easing in input costs.

In some areas the prevailing strength in engineering construction activity and signs of large scale mining-related investment resuming were identified as potentially leading

to local labour and accommodation shortages down the track. This observation particularly related to labour supply in Perth, and accommodation in mining centres.

Employment and skills

In general, labour market conditions had continued to settle with most firms indicating a degree of comfort with current staff numbers and looking for further signs of growth in demand before re-hiring.

A number of retailers reported slight increases in staff numbers. There was evidence that retail employers had pursued flexibility in work hours, meaning that the total number of workers on their payrolls had remained steady across the past year, with savings being made through reducing the number of shifts per employee.

However, the general result was that companies had reduced their workforces since 2008. Some firms have seen the slowdown as a chance to undertake restructuring and recruit talented or skilled workers that had recently become available on the labour market.

Weaker economic conditions were thought to be leading to higher training completion rates. Contacts reported that trade apprenticeship cancellations had declined during the downturn.

Prices and wages

Input price inflation and wages growth had moderated further during the June quarter.

Many contacts had instituted a freeze on executive wages, most since the beginning of 2009. Indications were that this freeze would continue until a sustained recovery in sales. Wage bill savings were also taking place through agreements with employees, for example by running down accrued leave.

At the non-executive levels, there were mixed messages, though most companies were seeing a decline in the growth of input costs, including wage costs. Some of the harder-hit companies had also frozen non-executive staff pay.

SM Bruce: the businessman as Treasurer

John Hawkins¹

Stanley Melbourne Bruce, a wealthy businessman with an aristocratic air, served as Treasurer in 1922, bringing down one budget, during his meteoric rise to the prime ministership. He stressed the need to bring 'businesslike' practices into government and promote development under his slogan 'men, money and markets'. A number of commissions and inquiries were set up to inform policymaking, and Bruce looked favourably on establishing independent boards to manage some government operations. Bruce established a sinking fund to retire the debt accumulated during the First World War. He also tried to rationalise industrial relations arrangements.



Source: National Library of Australia.

1 The first draft of this article was prepared when the author was in the Domestic Economy Division, the Australian Treasury. He thanks Anthony Goldbloom for assistance in tracking down references from *The Economist*, and for helpful comments. The views in this article are those of the author and not necessarily those of the Australian Treasury.

Introduction

Stanley Melbourne Bruce PC CH MC, later Viscount Bruce of Melbourne, preferred to be known as 'SM' than 'Stanley'. (He was never called 'Stan'.) His wealth and interests set him apart from the average Australian.² Even at the time, he seemed like he had stepped out of a Wodehouse novel. He was the only Prime Minister to come to the job already with a valet, a butler and a chauffeur-driven Rolls Royce. His sports were riding, rowing, golf and royal tennis. He was always immaculately attired, and had impeccable manners and what some regarded as matinee idol looks. The Bruces always dressed for dinner, even when dining alone.³ He was seen as an Englishman in Australia but an Australian in England.

Bruce prided himself on bringing businesslike processes to politics.⁴ He had 'a knowledge of business rare among politicians and a political sense rare among business men'.⁵ While a clear speaker, he was not famed for his oratory.⁶ He was praised for his 'inexhaustible vitality' and 'sense of balance and proportion'.⁷

Bruce was one of the youngest treasurers, and did not serve the usual apprenticeship in a junior ministry or as an opposition frontbencher.⁸

2 'There were very few Australians who could see themselves writ large in the aloof, wealthy man in spats and plus-fours leaning nonchalantly against the door of the latest model motor car'; Brett 2003, page 84.

3 *Melbourne Herald*, 30 November 1976.

4 Stirling (1974, page 487) cites a former Treasury Secretary as calling Bruce 'the business prime minister, the only one we have ever had' and recalling his 'clean desk' policy.

5 *The Forum*, 21 June 1922, page 3.

6 Bruce himself said 'I haven't even a touch of oratory'; Edwards 1965, page 457. Menzies (1967, page 114) recalled 'his vocabulary was, I thought, somewhat limited. I got the impression he was not a wide reader', although Menzies (1970, page 59) did opine that Bruce had 'an uncommonly thoughtful mind'. Casey recalled Bruce having a 'distaste for paper' and recalled that while 'very intelligent', he 'was not by inclination a man who read many serious books'; *The Age*, 10 January 1973, page 8. Lloyd (1984, page 16) refers to Bruce as having a 'vigorous intellect'. Early in his career it was said 'on matters of finance, he is held to be brilliantly clever'; Ainge-Johnson 1922, page 684.

7 *The Economist*, 1 January 1927, page 15.

8 Watson, Howard, Keating and Costello are the only others to become treasurer before 40. Bruce had only been in parliament for three years when he became treasurer. There were other treasurers in the early decades that reached the position within a similar time, but unlike Bruce, they mostly had extensive experience in state parliaments. While attending the Imperial Conference in 1926 Bruce was hailed as the youngest prime minister since Pitt the Younger. This claim was still being made five decades later — see Holt's obituary speech in *Hansard* 29 August 1967, page 495 — but was incorrect as Watson had served as Australian prime minister at an even younger age. Bruce is the only treasurer never to have been on the opposition benches.

Early career and entry into politics

Bruce was born on 15 April 1883 in Melbourne, the youngest child of John Bruce, a Scottish immigrant who had worked his way up to become a prosperous partner in the softgoods importing firm of Paterson, Laing and Bruce (PLB); and Mary, nee Henderson.⁹ John Bruce founded Australia's first golf club (later the exclusive Royal Melbourne Golf Club). Although PLB struggled during the 1890s depression, the young Bruce still led a comfortable lifestyle. He spent some of his early childhood in England, then attended Melbourne Grammar School, where he was school captain and also captained the football, cricket and rowing teams.¹⁰ Bruce worked in PLB's Melbourne warehouse briefly before going up to Trinity Hall, Cambridge, where he graduated with a BA in Law. He rowed in the winning Cambridge crew of 1904, and later successfully coached it. But he did not distinguish himself academically.¹¹

Bruce worked for a legal firm and successfully read for the bar at Middle Temple, but apparently without any great enthusiasm for the law. In 1908, he was appointed chairman of PLB. Bruce's reports to shareholders included detailed analyses of Australian political developments. The company prospered under Bruce's chairmanship. He introduced profit-sharing into it.

Bruce married Ethel Dunlop Anderson, from an established Melbourne family, in July 1913 and she remained his closest confidante. They had no children and Bruce said 'she made my career her hobby'.

Bruce enlisted in the British army when the First World War broke out and served as an officer at Gallipoli. Twice wounded (severely enough to still be using crutches two years later), he was the recipient of the Military Cross and the Croix de Guerre avec Palme. In 1917, Bruce returned to Australia to take over as general manager of PLB.

9 There was a family legend of descent from Robert the Bruce: Murray 1978, page 118.

10 He also led one of the parties in the school's parliamentary debating society in 1901, perhaps indicating an earlier interest in politics than he later claimed.

11 Bruce achieved a second class in the first part of his degree and third class in the second part. The Cambridge Archivist comments that Bruce enrolled for a 'special degree' rather than the tripos, suggesting his interests in the University were not primarily academic; private communication with Mr J Wells, 2008. Buchanan (1940, p 6) refers to Bruce having 'made a post-graduate study of business economics'. Of his student days, Bruce agreed he was 'competent rather than distinguished' and recalled 'in so far as I did any work at Cambridge I read Law'; Edwards Papers, MS 4637, National Library of Australia.

As a gallant wounded returned soldier, Captain Bruce became involved in recruitment speeches and this became his entrée into politics. In 1918, he was approached to run for the Nationalist Party for the by-election in the federal seat of Flinders, which he won easily, stressing in his campaign the need for business methods in government.

He joined a group of backbenchers known as 'economy corner' opposed to prime minister Billy Hughes' expansionism.¹² He was already showing the support for inquiries for which he would later be noted, describing a British commission on income tax as a 'mine of information' and calling for a similar inquiry in Australia.¹³

In July 1920 William Watt resigned as treasurer. There are reports that Bruce was offered the post, which would have been an extraordinarily rapid rise, but he declined. Instead the post passed to a reluctant Joseph Cook.

In 1921 Bruce served as Australia's representative at the League of Nations (he was the only Australian MP in Europe, being on a golfing holiday in France while attending to his British business interests), where he spoke movingly of the horrors of war.

Treasurer

When Cook resigned as treasurer in late 1921, Hughes initially offered Bruce the customs ministry. Bruce pointed out the potential conflict of interest in a large importer being offered that job. But he said it would be hard to turn down the treasuryship. To Bruce's surprise, Hughes upped his offer, perhaps influenced by a need to appease business donors.¹⁴ Bruce took over as treasurer (the fourth in four years) in December 1921, resigning as managing director of PLB.¹⁵

Bruce was initially shocked by the manner in which Hughes conducted cabinet meetings, which Bruce described as 'strange and mysterious affairs, where really nothing was seriously discussed'. Bruce's response was that he 'ceased to put Treasury items on the agenda, and simply went ahead and did whatever I thought was

12 Lloyd 1984, page 15.

13 *Hansard*, 30 September 1920, page 5184.

14 Bruce's account is given in Edwards (1965, pages 56-8). On the possible influence of business donors, see Edwards 1965, pages 59-60, C Hughes 1976, page 68 and Lloyd 1984, page 29). Another possibility is that Hughes thought the inexperienced Bruce would be easier to control than Massy-Greene, who was generally expected to be given the post; Murray 1978, page 40).

15 One journalist reporting this opined that 'Mr Bruce will actually hold the most important position, not even excepting Mr Hughes, in the ministry'; *The Age*, 22 December 1921, page 6. An account in a biographer's papers has Bruce recalling at the time, 'I didn't know very much about budgets ... I don't think I had much interest in past budgets'; Edwards papers, MS 4637/12.

necessary'.¹⁶ But on one occasion Hughes himself brought to cabinet a large spending proposal and coerced his colleagues into supporting it. Bruce said he would resign. Hughes just replied 'Oh! Anyway, it's getting late and we had better catch our trains', and the meeting broke up. No more was ever heard of the proposal.¹⁷

Bruce's only budget, in 1922, was brought down on what was then regarded as the very early date of 17 August. Bruce cut a range of taxes, which some viewed as reflecting electoral rather than economic considerations.¹⁸ He was fortunate in coming to the Treasury at the turning point of the post-war recession, which enabled him to cut tax rates and still show a surplus.¹⁹

He started his budget speech by praising his Treasury officers. Their preliminary estimates of revenue and expenditure for the previous financial year were within 0.1 per cent of the final outcome, and Bruce exclaimed 'I have never seen a comparable feat of accounting'.²⁰ Bruce then turned to giving a clear exposition of how he saw the nature of fiscal policy.²¹ Unlike some conservatives, Bruce was willing to countenance an increase in national debt.²² He established a sinking fund to redeem the domestic war debt within 50 years, but in a precursor to the *Intergenerational Report* eight decades later, also gave examples of the implications for the long-run debt position of alternative repayment schedules, and argued his preferred schedule was a 'fair and equitable arrangement as between the present generation of tax payers and those generations which will succeed'.²³ Other features of his budget speech were a comparison of the increase in government spending since the pre-war budget of 1913-14 with the increases in prices and public service wages over the same period;

16 Cited in Edwards 1965, page 64.

17 Bruce's account of this episode is given in Edwards (1965, page 65).

18 Edwards 1965, page 67. In particular, this was the claim of the Country Party leader Page.

19 As he put it in his speech, the 'recuperative powers of Australia are greater than we realised a year ago'; *Hansard*, 17 August 1922, page 1460.

20 The preliminary figures had been presented within five days of the end of the financial year. *Hansard*, 17 August 1922, page 1460.

21 'In framing the Budget, the Treasurer's first duty is to ascertain the expenditure necessary to secure the peace, order and good government of the country. He has also to consider what moneys need to be expended for development and other national purposes. He has then to look at his total expenditure and determine how much is of ordinary character which must be met out of revenue and how much, being of an exceptional and non-recurring character, may be met out of loan'; *Hansard*, 17 August 1922, page 1461.

22 He argued, 'Australia is a great underdeveloped country and has unrivalled possibilities for the creation of new wealth'; *Hansard*, 17 August 1922, page 1463. In Bruce (1927) he expanded on his view, distinguishing between 'dead-weight debt' incurred to pay for the war and that borrowed to buy assets for railway and postal services, for which further borrowing was justified. See also his speech reported in *The Argus*, 7 September 1922, page 9.

23 *Hansard*, 17 August 1922, page 1466.

and a comparison of the budget with benchmarks laid down at the International Finance Conference of 1920.

An innovation was the idea of borrowing for public works by the post office and appointing a board of businessmen to run it. He foreshadowed changes to the maternity allowance which he argued was failing to lower infant mortality.

Country Party leader Page congratulated Bruce on his 'lucidity and clearness' but regretted he had not been firmer in halting what Page regarded as a 'rake's progress' of extravagant government expenditure.²⁴ Labor leader Scullin also called for a greater reduction in government debt.²⁵ One of his conservative predecessors as treasurer, Watt, publicly attacked Bruce's budget as involving 'prodigal spending' and 'Micawber finance' and worried that concessions to business was creating a 'mendicant race'.²⁶

Bruce 'brought about many alterations in the Treasury itself, particularly in the manner of presenting financial statements to parliament'.²⁷ Some of his contemporaries called Bruce 'one of the best Treasurers the Commonwealth has ever had'.²⁸

He presented his ideas clearly. In a lecture he set out his five principles of taxation:

1. subjects should contribute in proportion to ability, the revenue they enjoy under the protection of the state;
2. tax should take out of the pocket as little as possible above what it brings to Treasury;
3. tax should fall on revenue not capital;
4. tax should not touch what is necessary for the existence of the contributor; and
5. tax should not put wealth to flight.

On these criteria he opposed land tax and thought income tax was the 'most just and equitable', but felt that Australia's income tax regime 'tried to be too just and too

²⁴ *Hansard*, 12 October 1922, pages 3792-3.

²⁵ *Hansard*, 12 October 1922, page 3807.

²⁶ *The Age*, 21 November 1922, page 9.

²⁷ Pearce 1951, page 172.

²⁸ This was the view of long-serving minister George Pearce (1951, page 156). Treasury officials reportedly rated Bruce and Theodore as the best treasurers of their age; Edwards 1965, page 59.

equitable' and so was 'more complicated and difficult than any income tax system in the world'.²⁹

His concern about reducing costs of production led him to take to cabinet a proposal to reduce parliamentary allowances 'to set an example'.³⁰ Such a suggestion from the independently wealthy Bruce would doubtless have not been well received, and the suggestion was not adopted.

Prime minister: coaching a cabinet

Hughes failed to win a majority for his Nationalist Party at the 1922 election. The Country Party refused to join a coalition under Hughes and so Hughes ceded the Nationalist leadership to Bruce.³¹ The Country Party leader Earle Page became deputy prime minister and treasurer. It was the first federal cabinet in which all members were Australian-born and at 39, Bruce was its youngest member.

Bruce's views on managing a cabinet seemed to reflect the lessons he learned as a rowing coach.³² Among these were that 'many good crews have been spoilt by pandering to men who once rowed well but also require and resent being coached', and 'never row a man in a crew ... whom you feel you cannot trust'; lessons that could be applied especially to Hughes.³³ He also seemed to draw from his coaching the need for careful management and stability in his team.³⁴

Bruce had as a goal to increase the population of Australia and the size of its economy, largely on security grounds, an early version of the 'populate or perish' credo, but also on economic grounds.³⁵ He saw development as requiring, in his trademark phrase, 'men, money and markets'. And he looked to Britain for all three. He was keen to attract British capital and strengthen trade links, but made little headway in

29 *The Argus*, 19 September 1922.

30 Cabinet submission, 8 August 1922, National Archives of Australia: A1494.

31 Hughes' deputy, Walter Massy-Greene, who might have become leader, had been defeated by a Country Party candidate at the election.

32 He certainly regarded himself as more than 'first among equals'. He is quoted as having said in an address to an employers' group in 1929 that 'on our side in politics, there is nobody at the present time who can possibly take my place'; Carboch 1958, page 240, citing *Bulletin*, 2 October 1929. Some justification for Bruce's view is that his successor as conservative prime minister three years later was a Labor renegade rather than a member of his ministry.

33 Bruce 1919, pages 17 and 23.

34 Other tips in his coaching manual were that one should have 'a programme of the definite sequence ... and should never depart from it ... putting the most essential thing first'. He warned the coach 'will undoubtedly receive much advice from outside critics. Such advice must be totally ignored ... the thing to be avoided ... is chopping and changing a crew'; Bruce 1919.

35 Richmond 1983, page 239.

strengthening imperial preference.³⁶ Despite his urban background, Bruce shared the common Australian view that rural development was of major importance, although by this time the best farming land had probably all been developed.³⁷

Bruce consistently favoured making decisions based on good information and expert advice. He appointed many commissions and inquiries. At the Imperial Conference of 1926 Bruce arranged a visit by a British Economic Mission. Bruce established the Council for Scientific and Industrial Research, for which he took a personal interest in finding top British scientists, and the Development and Migration Commission. Another indicator of his interest in basing decisions on information was placing Frank McDougall and future treasurer Richard Casey in London to act as his 'eyes and ears' there.³⁸ He also devolved some responsibilities from parliament to boards of experts, mostly drawn from the business community.

Unlike many politicians, Bruce saw value in the work of economists, declaring 'economic research is not less important than scientific research'.³⁹ In 1929, he produced a Bill to establish a Bureau of Economic Research.⁴⁰ He welcomed the promise of economics expertise by commissioning economists to inquire into the optimal level of protection. The Brigden Report on the Australian tariff was the first time economists advised upon a major policy issue in Australia and was well regarded overseas.⁴¹ Internationally, a proposal by Bruce at the 1923 Imperial Conference to establish an advisory Imperial Economic Committee was adopted at the meeting but later rejected by the British government.

However, he became less impressed with Australian economists towards the end of his time as prime minister, perhaps because he felt they had not succeeded in raising Australian prosperity to the extent to which he aspired. He commented, 'If one is completely a master of a subject it is never necessary to be completely unintelligible. Practically every economic writer, however, is.'⁴²

36 In Bruce (1924), his only published article on economics, probably drafted by McDougall, he used trade statistics to argue a protectionist line but favoured imperial preference.

37 Richmond 1983, pages 238-40.

38 Their reports to him have been published as Casey, 1980 and McDougall, 1986.

39 Bruce 1926, page 6).

40 Edwards 1965, page 156; Castles 1997. The Bureau's establishment was supported by the British Economic Mission to Australia and the Brigden Report economists, but Bruce's government was defeated before it could be established.

41 The committee included Brigden, Copland, Dyason, Giblin and Wickens. Keynes described its report as 'one of the highest interest and a very brilliant effort' in a letter to Giblin; cited by Harper 1989, page 23.

42 Bruce to Casey, 30 April 1928; cited in Richmond 1983, page 256.

As described in the essay on Page in the next *Economic Roundup*, other economic initiatives of the Bruce–Page government included establishment of the Loan Council, abolition of the 25 shillings per head payment to the States, introduction of tied grants, and creation of an independent board for the Commonwealth Bank. How much of the economic reforms of the Bruce–Page government were due to Bruce is not clear, although some writers claim Page took excessive credit.⁴³ It has been suggested that Treasury had prime carriage of much policy work when Bruce was prime minister.⁴⁴

Bruce wanted to remove the overlap between federal and state responsibilities for arbitration. When a referendum to centralise power with the federal government in September 1926 failed, he tried to give responsibility exclusively to the States.⁴⁵ When a parliamentary vote was narrowly lost, Bruce requested dissolution of parliament. At the subsequent election, in October 1929, not only was the government defeated, but Bruce lost his own seat to a trade unionist, the first sitting prime minister to do so.⁴⁶

By late 1928 Bruce believed 'a very serious financial and economic crisis on an almost unprecedented scale was looming' around the world.⁴⁷ But he 'didn't deliberately commit political suicide to avoid being in power during the Depression'.⁴⁸

Bruce's subsequent career

Bruce won back his seat of Flinders in December 1931, despite having spent the entire election campaign in England. In the interim he helped guide PLB through the

43 Radi 2004, page 325. Conversely, Buchanan (1940, page 15) says 'as far as the finances of the country were concerned, major decisions, as well as most of the details were left to the Treasurer'.

44 Jack Lang (1962, pages 42-3) recalled Bruce boasting at premiers' conferences of his clean desk, and suggests 'the Prime Minister's office did little work in those days apart from attending to the social engagements. All the heavy work was loaded on to the Treasury'.

45 See Carboch, 1958 for a good account of this volte face and the subsequent election.

46 At the time, he was the only sitting prime minister in the British Empire to have lost his seat. Similar fates later befell Jan Smuts in South Africa in 1948 and John Howard in Australia in 2007. Bruce declined an offer of another Nationalist seat; Sawyer 1963, page 5).

47 Cited by Edwards (1965, page 166). Pearce (1951, page 175) says a May 1929 speech made Bruce 'one of the first public men in Australia to sound a note of warning of the coming depression'.

48 In a letter to Pearce (27 May 1930) he said 'we did our best while in office to educate the people to the need to get down the costs of production ... last year the slump in wheat and wool prices forced us to take action before public opinion was sufficiently educated'; Pearce papers MS 1927/1927/3. He continued, 'I gather, however, that our successors are having a fairly troublesome time, and, as far as I am concerned, they are welcome to the job'.

Depression, but made few public comments on economic issues.⁴⁹ Joseph Lyons formed the United Australia Party from the Nationalists and Labor defectors and led it to a decisive victory. Lyons took the Treasury himself but appointed Bruce as assistant treasurer from January to June 1932. One suggestion was that as the election had 'centred on finance and honesty ... Lyons determined to take personal responsibility for its implementation'.⁵⁰ Another view was that Lyons took the title to reassure the public as Bruce was 'having to live down his reputation for reckless expansion'.⁵¹ While 'assistant treasurer' sounds a lowly title for a former prime minister, Jack Lang thought that 'Bruce was the Prime Minister, but allowed Lyons to adopt the title', and Bruce said he had to 'hold Lyons' hand'.⁵²

In September 1932 Bruce became resident minister in London. He resigned from parliament in October 1933, staying in London as High Commissioner, a post he held until 1945. He used his links to the British establishment to good effect, helping attract support for Australian borrowing in the London markets.⁵³

He also represented Australia at the League of Nations from 1932 to 1939 (serving as its first Australian-born president in 1936 and in 1939 chairing the League's special committee on the development of international cooperation in economic affairs), at the World Economic Conference in 1933 and in the British War Cabinet.

There was talk on a number of occasions of a political comeback but nothing eventuated.⁵⁴ In 1947 he became Viscount Bruce of Melbourne. He spoke rarely in the Lords, usually on Australian affairs or on doing more for the third world. He joined a number of company boards in London, chaired the World Food Council from 1947 to

49 In 1931, Bruce said he 'deliberately refrained from public utterances and criticisms of the government, because I felt that having no responsibility it was unfair that I should make more difficult the task they were facing'. He broke his vow of silence to attack what he saw as the 'inflationary' fiduciary notes proposal and to argue for a balanced budget; Edwards papers.

50 Lyons 2008, page 163.

51 This was the view of Giblin cited by Millmow (2004, pages 131, 135).

52 Edwards 1965, page 208. Bruce ranked third in cabinet seniority.

53 Buchanan 1940, pages 24-5). On one occasion he had to warn Lyons that controversy about the Bodyline tactics in cricket threatened the conversion of a loan; Latham 1962, page 80.

54 In 1934, Page wanted to stand aside for Bruce in his own electorate but the Country Party would not agree. In 1935, Casey, at Lyons' urging, asked him to come back and offered to step aside as treasurer. According to Bruce, shortly before his death Lyons asked him to take over as prime minister; but withdrew the invitation the following day. Following Lyons' death in 1939, Page and then treasurer Casey invited him to come back as leader but Bruce judged he did not have sufficient support. There were again rumours in 1945 and 1946, but by then Bruce thought he would be too old by the time of the 1949 election.

1951 and achieved various honours.⁵⁵ In 1959 he was best man when fellow septuagenarian and former treasurer Earle Page remarried. In 1951 Bruce became the inaugural chancellor of the Australian National University, serving until 1961. While as a London resident, his involvement with university affairs was limited, when he died in London on 26 August 1967, shortly after Ethel, his will provided a generous endowment for the University and his ashes were scattered over Canberra.⁵⁶

55 He described his Rowing Blue at Cambridge, captaincy of the Royal and Ancient and honorary fellowship of the Royal Society as the things which pleased him most in his life; Edwards 1965, page 452. It was perhaps typical of him that being prime minister and treasurer of Australia paled in comparison.

56 A perhaps apocryphal story has it that drinkers in the beer garden at the Ainslie Hotel (now Ollims) covered their beer glasses while an RAAF plane scattered his ashes during the memorial service; Connor 2003, page 114.

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<http://www.tofa.treasury.gov.au/content/consultation.asp>.

The Treasury has released draft legislation and explanatory material regarding Pay as you go instalments and taxation of financial arrangements interactions on the Taxation of Financial Arrangements website.

Consultations

<http://www.treasury.gov.au/content/consultations.asp?ContentID=1013&titl=Reviews,%20Inquiries%20%26%20Consultations>

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- Consultation Paper: The New Research and Development Tax Incentive
- Exposure Draft - Taxation of Employee Share Schemes (Application and Transitional Provisions)
- Reporting Requirements for Dealing with Unauthorised Foreign Insurers and in Atypical Risks - Draft Regulations
- Government response to the Board of Taxation Review of the legal framework for the administration of the GST - Second Discussion Paper
- Company Losses: Exposure draft legislation and explanatory material
- Exposure Draft - Lost members' Superannuation Accounts
- Exposure Draft - Abolishing the capital gains tax trust cloning exception and providing a roll-over for fixed trusts
- Corporations Amendment Regulations 2009 - Draft regulations and Explanatory Material
- Review of Australia's superannuation system
- Australia's Future Tax System

Sources of economic data

The following table provides sources for key economic data. Australian Bureau of Statistics (ABS) data can be obtained over the internet at <http://www.abs.gov.au>. The Reserve Bank of Australia information is available at <http://www.rba.gov.au>. Similarly, OECD information is available at <http://www.oecd.org>. Information on individual economies is also available via the IMF at <http://www.imf.org>.

International economy	
Output, current account balance, interest rates and consumer price inflation	OECD Main Economic Indicators
National accounts	
Components of GDP, contributions to change in GDP	ABS cat. no. 5206.0
Incomes, costs and prices	
Real household income	ABS cat. nos. 5204.0 and 5206.0
Wages, labour costs and company income	ABS cat. nos. 5204.0, 5206.0, 5676.0 and 6345.0
Prices	ABS cat. nos. 6401.0 and 5206.0
Labour market	ABS cat. no. 6202.0
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