



**Australian Workforce  
and Productivity Agency**

**Australian Council of Deans of ICT  
Annual Council Meeting**

***Compiling our Futures***

***Demand for Tertiary Qualification  
until 2025 – Four Scenarios***

**Robin Shreeve  
CEO, Skills Australia**

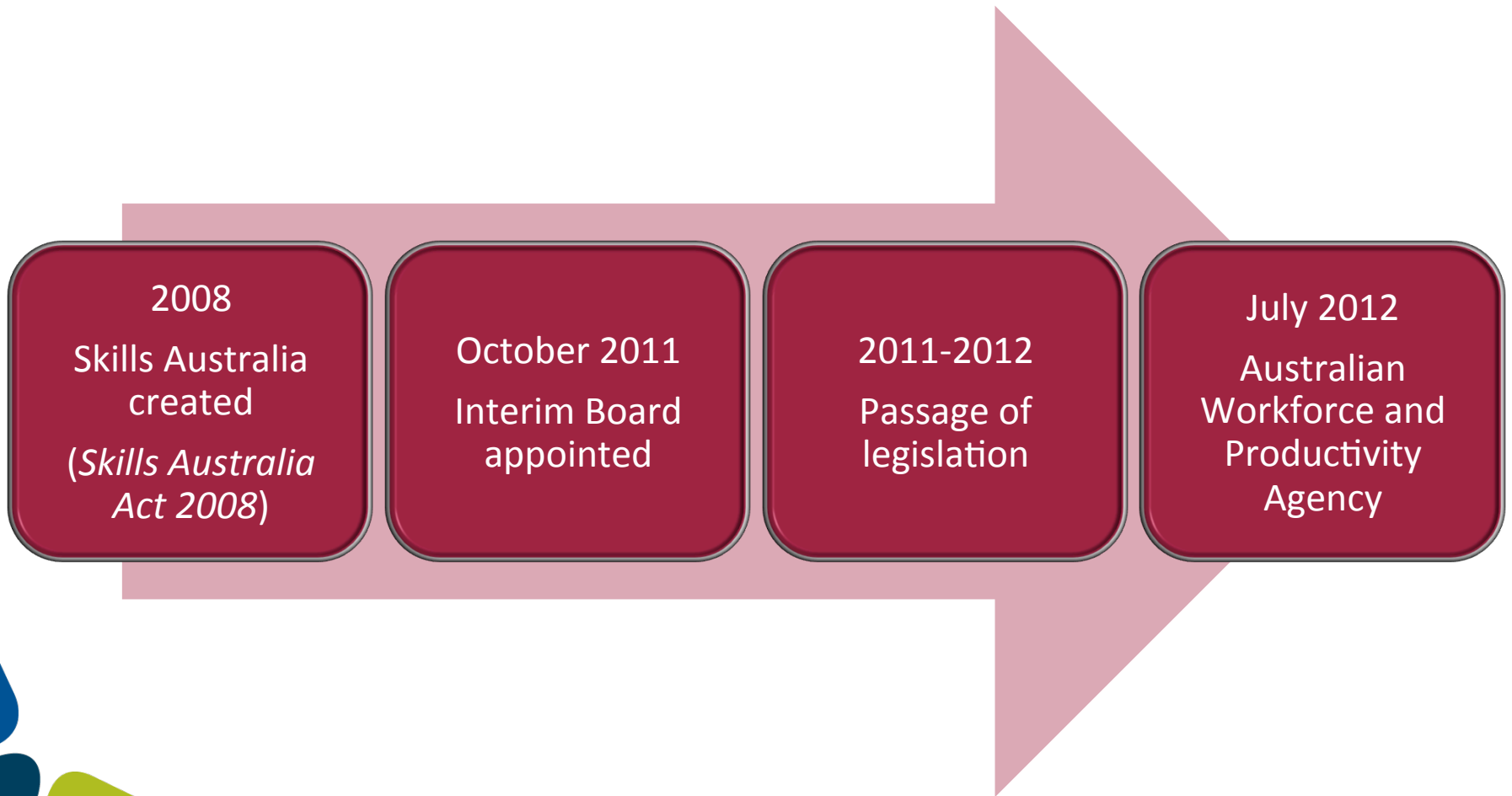
**2 July 2012**

# Advice Skills Australia has provided to Government



- [Foundations for the Future](#) – June 2009
- [Australian Workforce Futures](#): a national workforce development strategy – March 2010
- Advice to Department of Immigration on [Skilled Occupation List](#) for General Skilled Migration program – February 2011
- [Skills for prosperity: a road map for vocational education and training](#) – May 2011
- [Energy efficiency in commercial and residential buildings: Jobs and Skills Implications](#) – May 2011
- [2011 interim report on resources sector skill needs](#) – July 2011
- [Defence Industry Workforce Strategy](#) – January 2012
- [Better use of skills, better outcomes: A research report on skills utilisation in Australia](#) – April 2012
- Advice to Department of Immigration on [Skilled Occupation List](#) for General Skilled Migration program – June 2012
- [Scenario development](#) – phase II of *Australian Workforce Futures*

# The journey so far



# Some functions of the AWPA

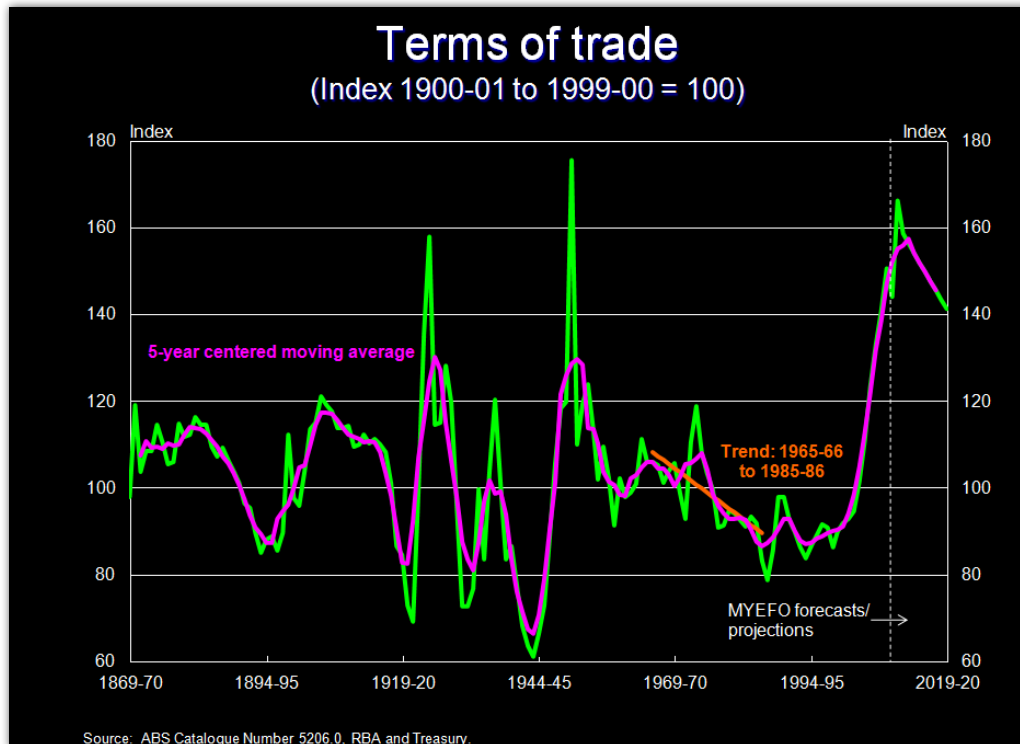
- Drive engagement between industry, training providers and government on workforce development, apprenticeships and VET reform
- Develop and monitor sectoral skills and workforce development plans in conjunction with Industry Skills Councils and industry
- Provide independent advice on sectoral and regional skills needs to support workforce planning and productivity, including in small business
- Promote workforce productivity by leading initiatives for the improvement of productivity, management innovation and skills utilisation in Australia
- Conduct skills and workforce research, including into the quality of jobs and future working life in Australia
- Administer the National Workforce Development Fund



# Australia – the challenge of prosperity

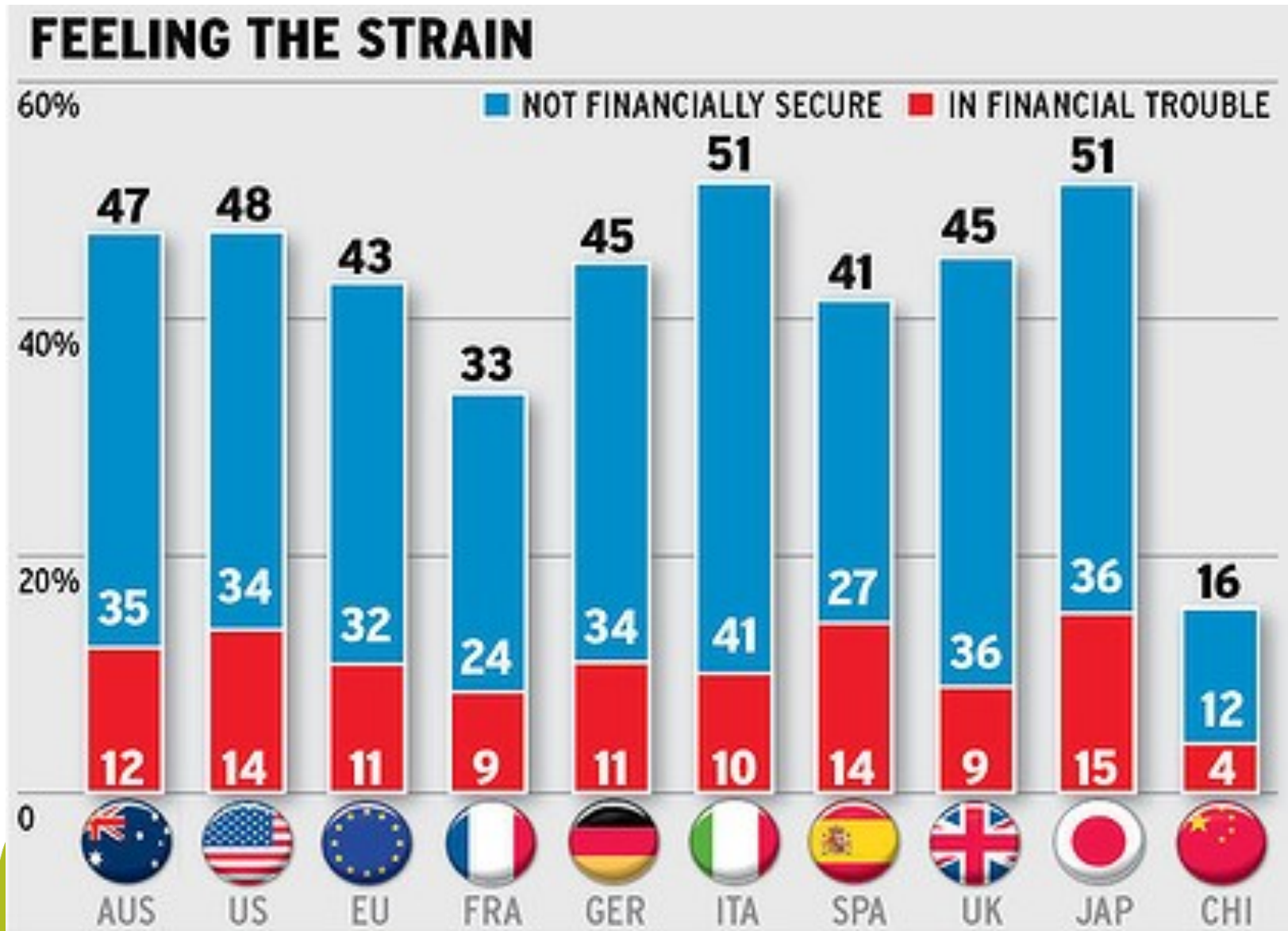


Glenn Stevens  
Governor,  
Reserve Bank  
of Australia



- Five years ago, a ship load of Australian iron ore was worth about the same as **2,200** flat-screen TVs
- Today it is worth about **22,000** flat-screen TVs
- Partly due to TV prices falling – but more to the price of iron ore rising by a factor of six

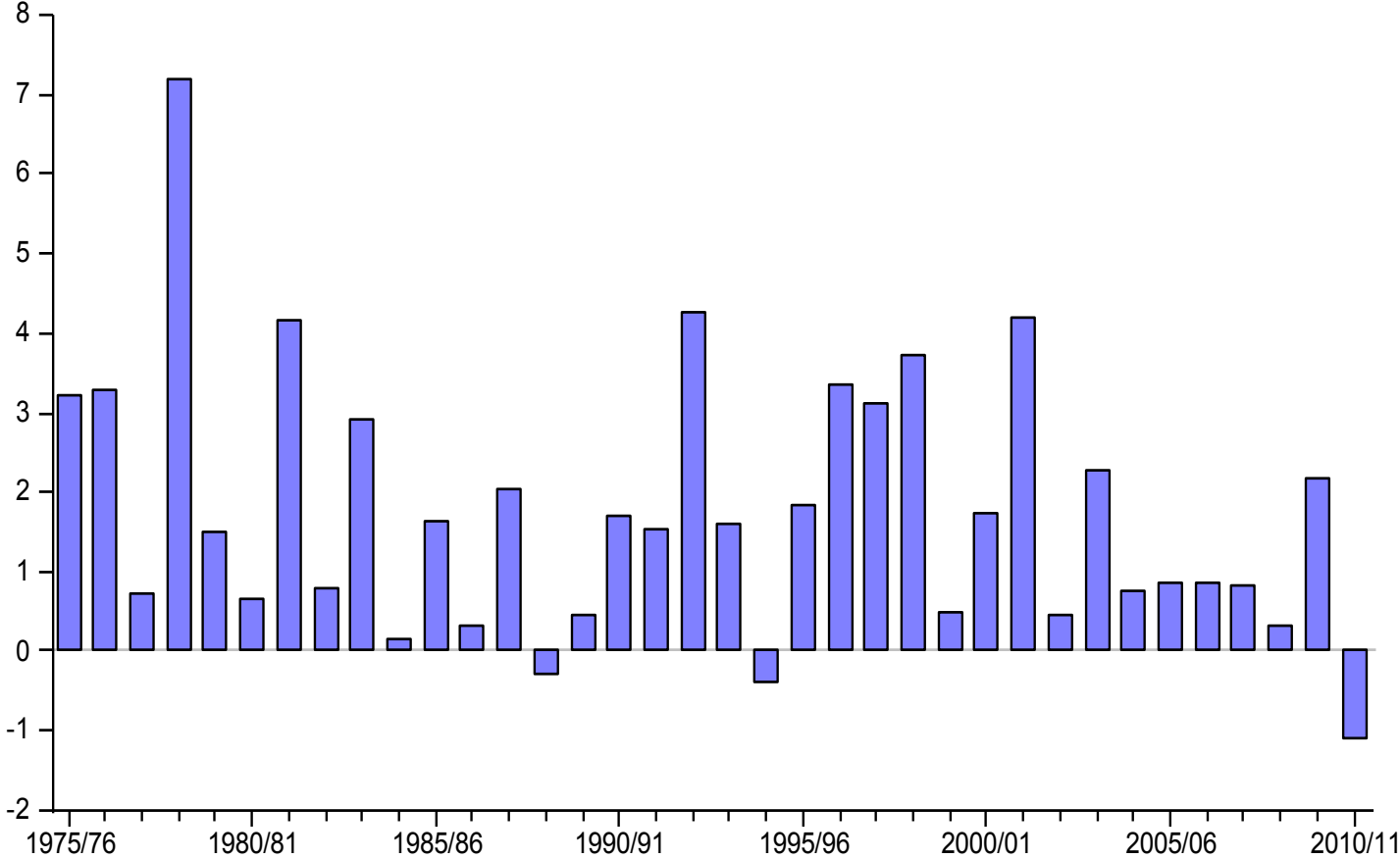
# Boston Consulting Group – Consumer Sentiment Survey 2012



# Productivity growth slowing

Labour productivity in Australia, % change, 1975-2011

- Below OECD and G7 average
- Below US and NZ



Source: ABS National Accounts 2010/11 (5204.0)

# Australia's variable participation

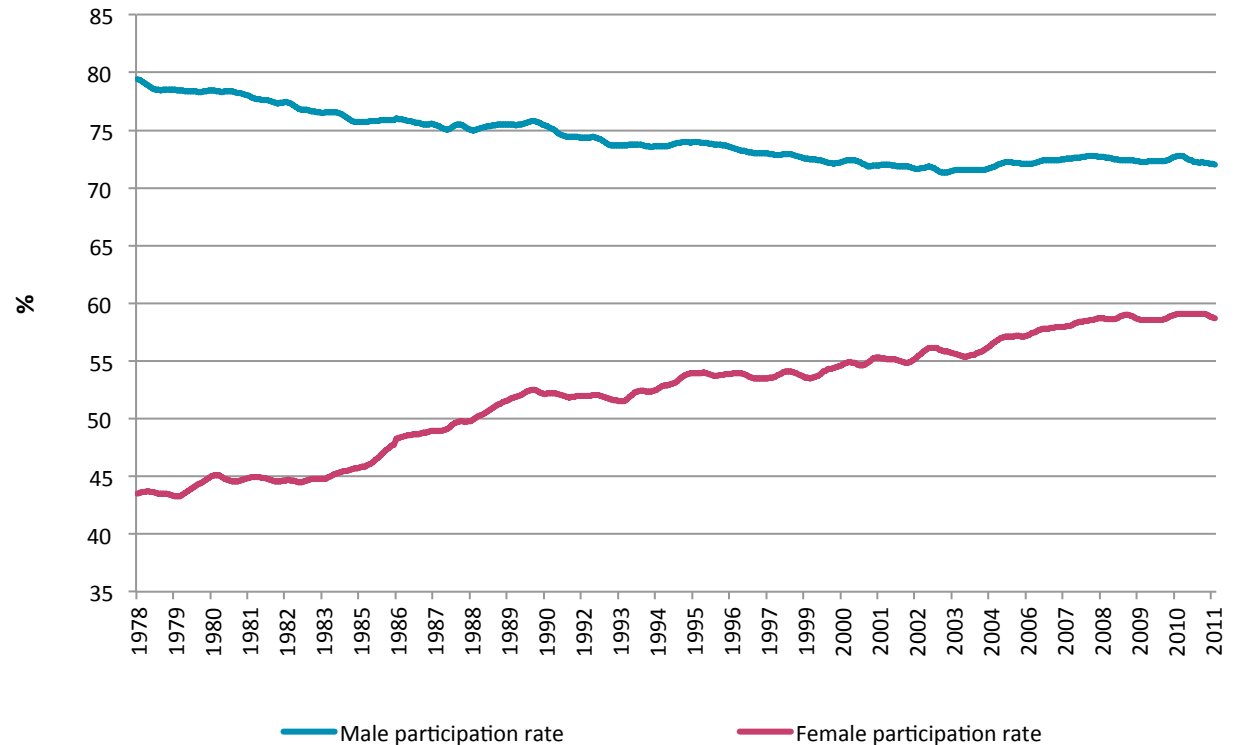
## Indigenous

- Participation in remote areas is 54.4%

## Disability

- In 2009, 54.3% of the population participated in the labour force compared to 82.8% of those without a disability.

*Women's participation increasing but men's decreasing*



Note: The participation rate includes both employed and unemployed people.

**Source:** Labour force, Australia, January 2012, ABS Cat no. 6202.0, Table 1. Trend series.  
Population: Male and female civilian population aged 15 years and over.



# Education matters to participation

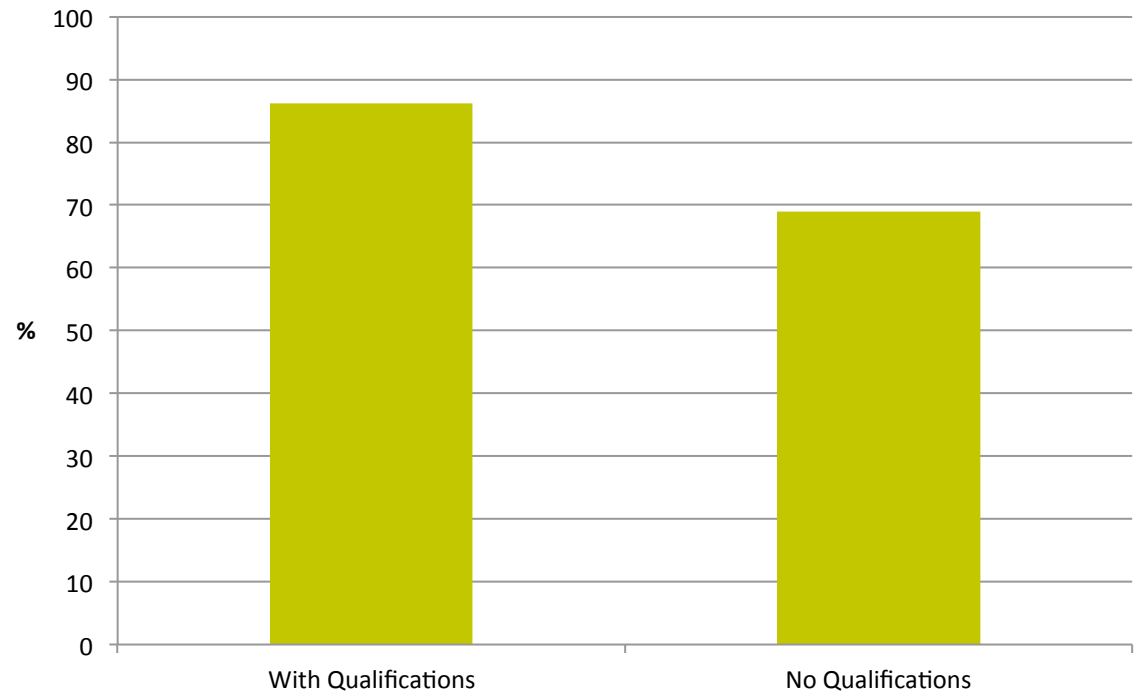
People with non-school qualifications are more likely to be in the labour force

## Older workers

- Increasingly, mature-aged people are participating in work, particularly in professional occupations.

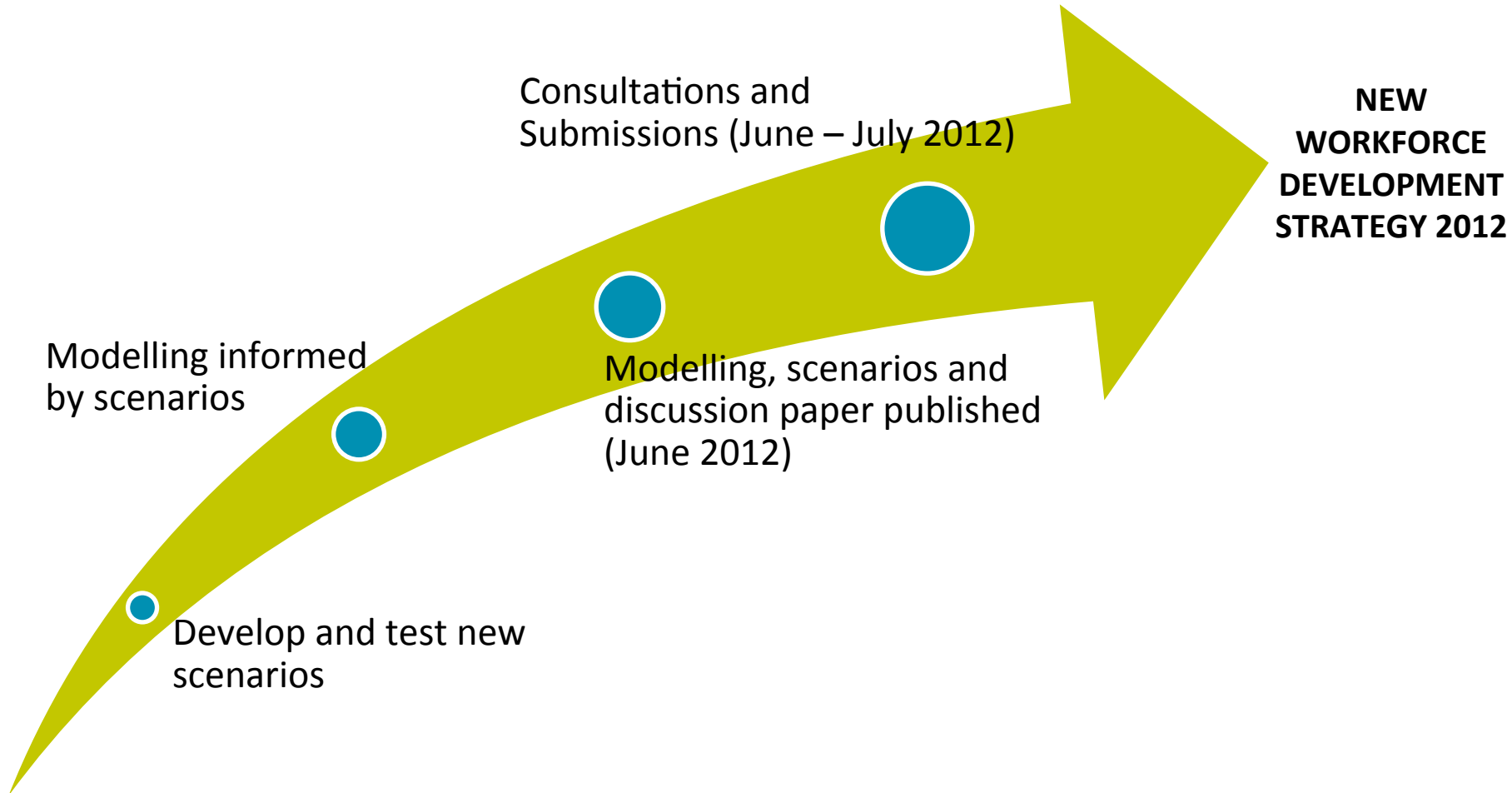
## Young workers

- In January 2012, 26.8% of teenagers of working age were neither working nor engaged in full-time learning



Source: ABS 6227.0 Education and Work, Australia, May 2011 (aged 15-64 years).

# Developing the strategy



# Approach to the 2012 strategy

**Scenarios** → **Modelling** → **Analysis** → **Strategy**

Plausible worlds  
(but not predicting the future!)

Projections of demand & supply side implications of the scenarios

Analysing the uncertainty, commonality, differences and risks of the scenarios

The policy recommendations balance aspirational goals and risks, after assessing key differences between the scenarios

Each process informs the next

# The Scenarios

- Sustained prosperity and a restructured economy

1. The Long Boom

- Uncertainty to 2015 with low growth and knowledge-based recovery

2. Smart Recovery

4. Ring of Fire

3. Terms of Trade Shock

- Risky world – multiple shocks

- Resource prices fall, a more balanced economy

# 1. The Long Boom

- There is a speedy recovery from the global financial uncertainty of 2011-12. Asia is becoming the world centre of gravity, and the rapidly urbanising populations of China and India provide a continuing market for Australian resources. Mining and construction thrive, bringing continued prosperity to Australia.
- But the high Australian dollar impacts tourism, manufacturing and international education sectors. Large employer and traditionally low-skilled industries, including retail, do it tough. Government introduces a sovereign wealth fund to share prosperity more equally.

## 2. Smart Recovery

- Australia experiences a low-growth economy to 2014-15. The European downturn is protracted and there is continuing instability in global financial markets. Growth in the Chinese and Indian economies slows, the demand for Australian resources drops, and the terms of trade and Australian dollar move lower.
- Global growth resumes from 2014-15, heralding better growth for Australia. Our companies and government are challenged to improve productivity and a knowledge-based recovery follows, although the impact of technology means that there are fewer opportunities for those with lower skills.

### 3. Terms of Trade Shock

- This scenario sees new global sources of mineral and energy resources come on stream, leading to an oversupply of commodities. Prices fall, Australia's terms of trade decline and the dollar loses value but resources export volumes are largely maintained.
- Australia seizes the crisis as an opportunity to move to a broad-based economy. We re-establish a viable manufacturing sector and build strong and internationally competitive businesses.

## 4. Ring of Fire

- Australia and the rest of the world lurch from one crisis to the next. Recovery from the European downturn is slow. Natural disasters and severe weather events occur on a regular basis, damaging industry and costing human lives.
- Political unrest destabilises parts of Asia. There are ongoing nuclear warfare threats and skirmishes over resources, especially water security.
- Increased protectionism reduces trade between countries and Australia too is protectionist
- In the midst of the doom and gloom, the lower Australian dollar substantially improves the position of trade-exposed industry sectors.



# Comparing the scenarios

## Commonalities

Ageing population

Importance of Asia

Technology  
(but speed of adaptation varies)

Sustainability challenges

## Key differences

Migration

Fiscal capacity

Labour force participation

Industry structure

# Modelling Parameters

## Summary assumptions by scenario

Variable (average 2011-2025 unless stated)	History (avg 2001-11)	Long Boom	Smart Recovery	ToT shock	Ring of fire
Terms of trade (level in 2025 for forecasts)	87.5	88.0	85.0	67.0	73.2
Net migration (persons)	176,000	235,000	191,000	187,000	128,000
Population growth (%)	1.54%	1.58%	1.32%	1.28%	0.99%
Labour force participation rate (level in 2025 for forecasts)	64.8%	69.2%	66.9%	67.3%	63.6%
Unemployment rate	5.3%	5.0%	5.3%	5.0%	6.6%
Employment growth	2.32%	1.99%	1.52%	1.59%	0.75%
Productivity growth	0.72%	1.86%	1.30%	1.61%	0.59%
Output growth	3.06%	3.89%	2.85%	3.23%	1.35%
Output per capita growth	1.50%	2.26%	1.51%	1.93%	0.39%
Nominal GNI per capita growth	5.34%	4.28%	3.54%	3.15%	2.06%
Real GNI per capita growth	2.46%	1.69%	0.93%	0.57%	-0.55%

# Projected employment growth

- Workforce size (2025) – 12.7M to 15.1M
- Job openings – 4.3M to 6.4M
- Highest growth occupations (all scenarios)
  - professionals
  - community & personal service workers
  - Managers
- Health care and social assistance strongest employment growth in all scenarios

Source: ABS, Deloitte Access Economics

# Qualifications demand

Annual change in employed persons by highest level qualification, 2011-2025 (%)

Qualification	Long Boom	Smart Recovery	Terms of Trade Shock	Ring of Fire
Postgraduate	5.2	4.1	4.6	2.1
Undergraduate	3.9	3.1	3.4	1.6
Adv diploma / Diploma	2.7	2.1	2.3	1.1
Certificate III / IV	4.3	2.9	3.5	1.4
Certificate I / II	-3.8	-2.4	-3.5	-1.1
<b>Total post school quals</b>	<b>3.8</b>	<b>2.8</b>	<b>3.2</b>	<b>1.4</b>
<b>Cert III and above</b>	<b>4.0</b>	<b>3.0</b>	<b>3.4</b>	<b>1.5</b>

**Source:**

Deloitte Access Economics (2012) 'Economic modelling of skills demand and supply' - derived from tables 5.6 -5.9

# Analysing the impact of demand-based funding in Higher Education on Australia's skill needs

- Skills Australia has commissioned the National Institute of Labour Studies (NILS) to undertake a research project to develop indicators of occupational supply/ demand balance
- The focus of the project is on Skills Australia's Specialised Occupations List (SpOL)
  - Where a specialised occupation is one in which specialised skills, learned in formal education and training are needed at entry level, and the impact of market failure is potentially significant

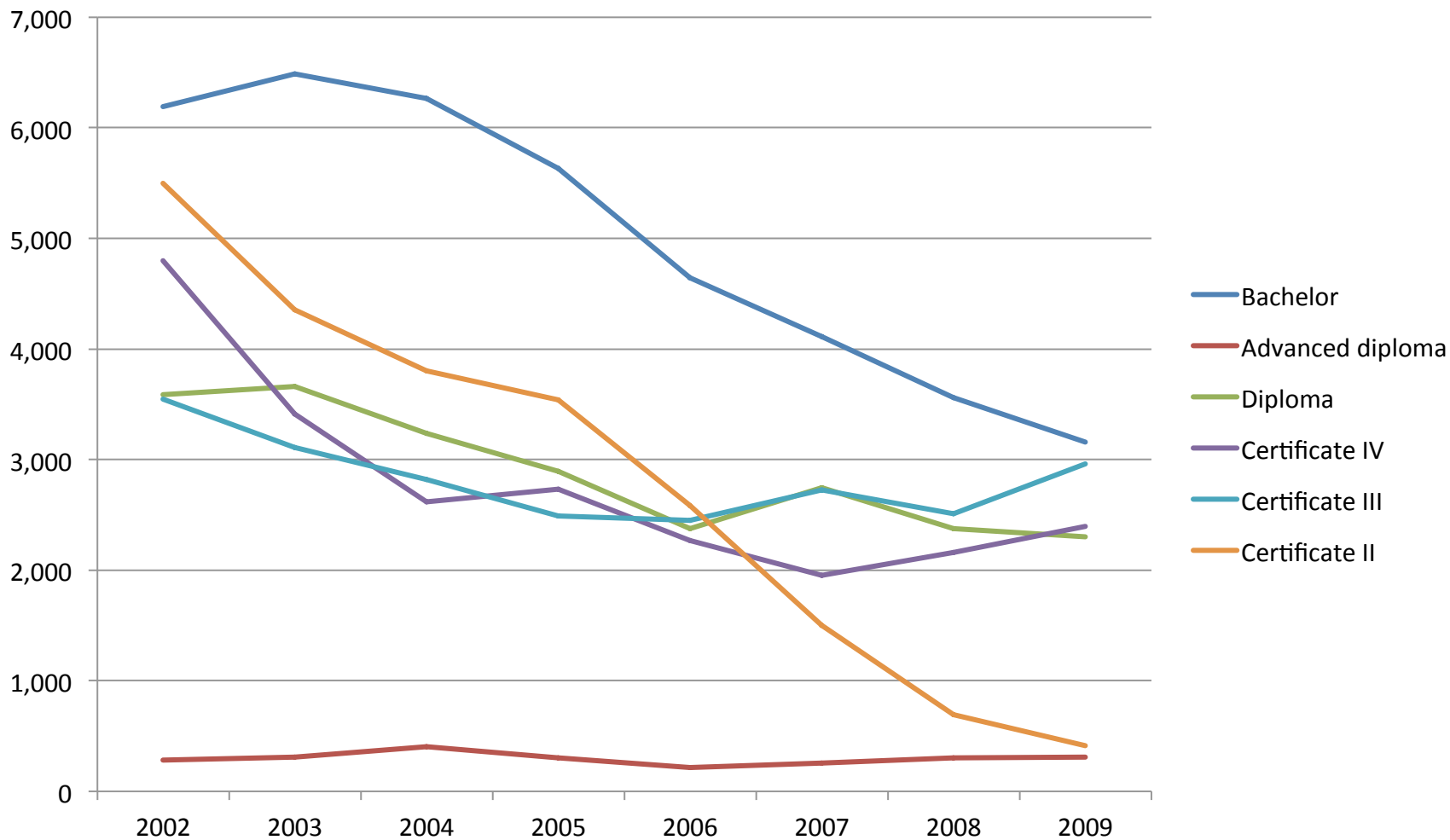
# Key deliverables of NILS research

- A tool to monitor the supply and demand for qualifications in a demand-based tertiary sector.
- A methodology to rate the supply/ demand (im)balance within an occupation or industry, and the degree to which it is likely to persist over time.
- A suite of indicators in a monitoring tool on supply/ demand imbalance in the medium to longer term to be replicated and published in a biannual report.
- Generic indicators for comparing supply/ demand imbalance across all industries and occupations, and specific indicators for selected industries and occupations.

# AQF Qualification Completions 2009 – NCVET Tertiary Education

Field	VET (000)	VET %	HE (000)	HE%	Total(000)	Total %
Natural and Physical Science	2.0	0.5	16.2	5.9	18.1	2.7
<b>Information Technology</b>	8.4	2.1	12	4.4	20.4	3.1
Engineering	62.2	15.8	14.1	5.2	76.3	11.5
Architecture and building	21.7	5.5	5.9	2.2	27.6	4.1
Agriculture	14.4	3.6	3.5	1.3	17.9	2.7
Health	17.1	4.3	35.3	13.0	52.5	7.9
Education	19.3	4.9	27.6	10.1	46.9	7.0
Management and commerce	110.8	28.1	91.6	33.6	202.3	30.4
Society and Culture	67.2	17.1	47.3	17.4	114.5	17.2
Creative Arts	11.8	3.00	18.3	6.7	30.1	4.5
Food and Hospitality	34.1	8.7	0.5	0.2	34.6	5.2
Mixed Field	24.9	6.3			24.9	3.7
<b>Total</b>	<b>393.9</b>	<b>100</b>	<b>272.2</b>	<b>100</b>	<b>666.1</b>	<b>100</b>

# Declining domestic completions in ICT qualifications



Source: Domestic completions in ICT Field of Education  
DEEWR Higher Education uCube  
NCVER Vocstate



# Historical and projected employment growth

Industry and largest specialised occupations within ICT	Historical Growth 2007-12	Projected growth 2012-17
Information, Media and Telecommunications Industry	-6.9	2.3
<b>Average all industries</b>	<b>9.2</b>	<b>7.2</b>
Software and Applications Programmers	17.1	9.3
ICT Business and Systems Analysts	12.9	13.2
Telecommunications Engineering Professionals	6.1	5.6
Telecommunications Trades Workers	-31.9	-1.0
Telecommunications Technical Specialists	42.0	6.2
<b>Average all occupations</b>	<b>9.2</b>	<b>7.2</b>

Source:  
DEEWR trend of ABS labour force survey data, May 2012

# ICT occupations on the skilled occupations list

- ICT Business Analyst
- Systems Analyst
- Analyst Programmer
- Developer Programmer
- Software Engineer
- Computer Network and Systems Engineer
- Telecommunications Engineer
- Telecommunications Network Engineer

# AWPA and Industry Skills Councils 2012 Annual Conference



For more information go to [www.awpa.gov.au](http://www.awpa.gov.au)

Enquiries relating to 2012 conference should be sent to:  
[conference@awpa.gov.au](mailto:conference@awpa.gov.au)

## Confirmed speakers:

**Tony Jones**

**Mark Bouris**

**Dr Ziggy Switkowski**

**Prof Hugh Lauder (UK)**

**Lynda Gratton (UK – via video)**



**Australian Workforce  
and Productivity Agency**

**THANK YOU**

**Questions?**