Policy reforms to strengthen the 'new economy'

2000 Chris Higgins Memorial Lecture

Address to Canberra Branch of the Economics Society of Australia
14 November 2000

By the Honourable Peter Costello, MP,
Treasurer of Australia

Paula Higgins, ladies and gentleman, it is an honour for me to be invited to present the Chris Higgins Memorial Lecture for 2000. May I also acknowledge Chris' two sons, David and Tim, both of whom, I'm pleased to say, are currently with the Commonwealth Treasury.

When I first entered Parliament in March 1990, Chris had been the Secretary to the Treasury for around six months. His untimely death in December 1990, meant that I did not have the chance to develop a personal association.

But his written legacy as a key contributor to Australian macroeconomic analysis, econometric modelling, and economic policy advice is clearly visible. He was enormously energetic and prolific, both as an academic and through his roles in the Bureau of Statistics from the mid-1960s and in Treasury from 1970.

Through parts of the sixties and seventies, Chris researched and published broadly as a PhD student and then as a Fullbright scholar in America, and as an Associate Professor at the University of British Columbia.

He continued to learn from the best of international policy practice in the early 1980s, in the most senior economist's position an Australian has ever filled in the OECD's Economics Department.

In his work at the OECD Secretariat in the early 1980s, Chris initiated the Organisation's switch away from mainly short-term analysis of macroeconomic cycles and policies towards more emphasis on structural reforms and on a medium-term, sustainable macro framework. He continued

to advance that line in the mid and late 1980s as Treasury Deputy Secretary and Australian representative on the OECD's Economic Policy Committee.

Chris demonstrated a commitment to public service.

A decade ago, the Commonwealth Treasury had far fewer challengers in economic forecasting and the giving of economic policy advice. It held pre-eminent place because its resources — in terms of personnel, research and access to information — were vastly superior to private sector analysts.

But increased transparency and more easily disseminated information, opened the door to many voices forecasting and advising the Government. Hardly a day seems to go by without some company or other observing that the economy is set for a boom, or possibly sliding into recession, or the budget is at a record surplus, or alternatively back in deficit. Of course, the more dramatic the pronouncement, the more likely it is to get on the news and — I am sure the public relations advisers have made this point — the more likely the company, its logo and its spokesmen will get exposure.

And whilst training at the Treasury or Reserve Bank is still the best training for economists, the private sector, able to pay much higher salaries than the Public Service, is able to recruit those economists after their training and build a capacity in forecasting and macroeconomics.

We can hardly complain about this recruiting activity. Young economists have families and children and naturally want to provide for them. And we who, by and large, support open markets cannot complain about those who are willing to pay market rates for highly sought after skills and services.

But I would like to say a word for public service. And as someone who has spent about half his working life in the private sector and half in Parliament, I do want to reiterate the importance of public service. For people with sought after skills, the remuneration may be less. But the quality of our government and the quality of our national life is quite directly influenced by our Public Service. And will be the better, for better people in it. People who are prepared to devote themselves to the national interest in advising government, in administering it and in carrying out decision–making, are people who should be recognised and admired, not constantly denigrated. There are some that do not do as well as they should, but there are an awful lot of decent and devoted people who feel very deeply about their country and where it can go.

And Chris was one of those. And a strong, professional Treasury is important to good policy. It will not keep its influence by reason of a monopoly any

longer — it is now challenged by multitudes of advisers — but only by reason of its professionalism.

The New Economy

Tonight I want to direct some comments to the issue of 'The New Economy'.

In the late 1990s there was a step up in growth in the US, that according to previous experience would have brought a step up in inflation. But it did not. Policy-makers who would normally have taken a pre-emptive strike with monetary policy began considering whether this was just a glitch in the data, a lag in inflation, or whether something structural had occurred - whether we were experiencing some kind of new economy.

A new growth in productivity seemed to have occurred. A great deal of academic work was commenced to identify which countries had experienced this productivity growth and what the common factors were that could explain it. The OECD began an investigation of these issues in the latter part of 1999.

A new chapter in the productivity story

As I suspect many of you would have heard me say already, the OECD's Growth Project identified in its initial report to the June 2000 OECD Ministerial Council Meeting that the US, Australia, the Netherlands, Denmark, Norway and Ireland had achieved a significant lift in trend GDP per capita growth in the 1990s. This lift in performance was relative to both their own earlier history, and the OECD average.

Moreover, this achievement was associated with high labour productivity growth, high total factor productivity growth, and good employment outcomes.[1]

Work published just last month by the US Federal Reserve Board also singled Australia out as one of the few economies to have lifted productivity growth in the second half of the 1990s, even outperforming the US in productivity growth.[2]

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1 *Is There a New Economy: First Report of the OECD Growth Project*, OECD, Paris, pp 4 — 12.

2 Christopher Gust and Jaime Marquez, *Productivity Developments Abroad*, Federal Reserve Bulletin, October 2000, pp 665 — 681.

The origin of the New Economy concept was the step up in productivity. But what produced the productivity growth? Why was it the US in particular that had experienced this development rather than continental Europe or Japan?

One of the measures on which the US consistently outstripped Europe and Japan, indeed the world, was the application of information and communication technology (ICT). And by this route the description 'New Economy' became increasingly applied to economies that have large ICT industries or apply ICT widely throughout their economies.

Productivity and growth performance: an historical analogy

Let us go back 30 years. From the early 1970s there was a marked productivity slowdown in the US economy. Robert Solow observed the paradox that 'we can see the computer age everywhere except in the productivity statistics'.

In 1997, Robert Gordon (still today a sceptic as to the real productivity contribution of computers) said, 'for more than a decade American corporations have been shovelling billions of dollars in computers down a black hole, with no response at all from the sluggish growth rate of American productivity.'[3]

Yet in late 1989, the Stanford economic historian Paul David warned against the pitfall of 'unrealistic impatience' in analysing and predicting the information age.

In a powerful analogy, he pointed to the slow diffusion of the electric motor through the industrial structure. It took from 1900 to 1920 before electric power had become the dominant industrial energy source over steam, even though central generating stations had been established in New York and London as early as 1881.

David's research suggests that the full advantages of the electric motor were not reaped until the entire factory system had been re-conceived and re-built.

David's key insight was that today's information and communications technologies, like the electric motor before them, are 'general purpose

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3 Robert Gordon (1997), 'Comment on Daniel Sichel, *The Computer Revolution*' cited in J. Bradford DeLong, 'What Went Right in the 1990s? Sources of American and Prospects for World Economic Growth' in Reserve Bank of Australia, *The Australian Economy in the 1990s*, edited by David Gruen and Sona Shrestha, July 2000.

technologies'. In both cases, the full extent of what could productively be done with them was not initially obvious. It required huge investments, much trial-and-error, and the forced diffusion by competitive pressures of the successful new business models and workplace skills.

If we learn from this 'electric age' analogy, we should beware of 'unrealistic impatience' in expecting the full payoffs from ICT: there is a very large economic restructuring required to achieve its full benefits. The early prizes will go to those who, under competitive pressure, are the quickest and most flexible to adapt.

And we should also guard against blind faith in assuming the ultimate benefits. Getting the most out of ICT requires that the entire suite of macroeconomic policies and structural policies should simultaneously be working well. In particular, it requires competitive pressures in a well-managed, flexible economy to deploy the new technologies productively.

As the OECD continues its Growth Project work, it seems likely to clarify that there is no one single explanation in all six of the highly performing economies for their productivity surges. All have drawn on ICT advances, but in their own ways in the context of their other relative strengths.

That should not surprise us, as wealth is created from trade (both domestic and international) based on comparative advantage: from harnessing **differences** for mutual benefit. It does not come from seeking to conform to an OECD statistical average, nor from seeking to emulate one leading economy in every detail.

ICT production and ICT use

Much as Paul David's historical analogy had predicted, Solow's computer productivity paradox has begun to be solved. For the US, productivity jumped in the second half of the 1990s, and it is now clear that ICT was the main factor in the US case.

The question of how much of the US 'new economy' productivity surge arises from that economy's **production** of ICT, and how much arises from the **use** of ICT throughout the economy has been the subject of detailed studies this year.

The most influential study (around which most other researchers' results cluster) is by Stephen Oliner and Daniel Sichel of the Federal Reserve Board.[4]

They find that of the US increase of about 1 percentage point in labour productivity growth in the second half of the 1990s, around one-third arose from productivity gains within the semiconductor and computer producing sectors themselves, while over forty percent arose from capital deepening from the accelerated investment in ICT elsewhere in the economy. [5]

Almost thirty percent of the productivity gain remained unexplained by changes in the volumes and qualities of labour and capital. This unexplained amount remains as the residual measure of total factor productivity growth in non-farm businesses outside the semiconductor and computer producing sectors. At least part of this gain is also likely to be ICT-driven efficiency gains.

It is irresistible to seek Australian comparisons to these US findings, as has been done recently by both the Federal Reserve Board and Goldman Sachs (Table 1).[6]

It is notable from these comparisons that first, Australian productivity began to lift in the early 1990s before the US but experienced a quantum jump in the later part of the 1990s. It has been even stronger than US productivity growth, and by an increasing margin over time.

Most analysts attribute the earlier start to Australian productivity growth and its stronger performance to include some element of 'catch up' on the US.

Second, since Australia has no semiconductor or computer production, productivity gains in those US sectors is absent from our performance. The strength of our performance is therefore all the more remarkable.

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4 Oliner, S.D. and D.E. Sichel, *The Resurgence of Growth in the Late 1990s: Is Information Technology the Story?*, May 2000, US Federal Reserve Board Staff Working Paper, available at http://www.bog.frb.fed.us/pubs/feds/2000/200020/200020pap.pdf .

5 One conflicting estimate on this point is in Robert Gordon's argument, in *Does the 'New Economy' Measure Up to the Great Inventions of the Past*, NBER, 2000. He attributes three-quarters of the post 1995 acceleration in US productivity growth to cyclical factors, and can then 'explain' the remaining quarter by the gain in productivity in producing computers. However it is not credible that much (if any) of the recent US productivity improvement is cyclical: see Figure 1, which shows that at comparably late points in earlier upswings, productivity had long ceased its cyclical increase, and was instead falling.

6 Christopher Gust and Jaime Marquez, *Productivity Developments Abroad*, op. cit.; and Wilson, D., *Australian Productivity: Catching a 'New Economy' Wave*, Goldman Sachs Global Economics Paper No. 50, July 2000

Third, Australian investment in ICT is very high and has accelerated through the late 1990s. The growth of investment in software continued at even higher rates than in the US, and growth of investment in hardware also showed a very large jump from an already high base in the second half of the 1990s, but not to US levels. Nor does the share of ICT investments in the total capital stock seem to have built up to US proportions yet.

The sense that Australian ICT investment is still building up to US levels contributes to the Goldman Sachs' judgement that Australia is ripe for a second wave of productivity improvements that would take over where the first wave of reform-based benefits left off.[7]

Fourth, Australia, like the US, is unlikely to have begun to see the productivity gains from E-commerce yet, as efficiencies from B2B, B2C and 'Government on line' or E-government were only burgeoning in the late 1990s.

Fifth, Australian E-commerce readiness is among the highest in the world and little behind the US's, whether it is measured by PCs per household, installed computers per thousand inhabitants, secure servers per thousand inhabitants, or internet connections and use. (Chart 2 illustrates two of these measures.)

In fairness to critics of the lack of Australian semiconductor and computer production, let me underscore again: the US did obtain about one-third of its late-1990s productivity gain from the extraordinary technical advances in its production of semiconductors and computers.

But without that production of semiconductors and computers, Australia's productivity performance over the 1990s still outstripped the US's. With the right policies to maximise our gains from the new technologies, I see no reason why that could not continue.

The 'new economy vs old economy' fallacy

The information and communication technologies (and their applications in E-commerce) are general purpose technologies that will redesign Australian industry. Their effects will be all-pervasive, because they lower information costs and transactions costs.

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7 Wilson, D, *Australian Productivity: Catching a 'New Economy' Wave*, ibid.

Australian business is in the process of redesigning itself to use the new ICT and E-commerce technologies.

The 'new economy' is mostly the productive use of ICT in the 'old economy'. This is the sense in which Alan Greenspan recently noted that

> '… in a meaningful sense, there is, with few exceptions, little of a truly old economy left. Virtually every part of our economic structure is, to a greater or lesser extent, affected by the newer innovations. No old-economy textile plant could exist in today's environment without technologies that Edmund Cartwright could never have imagined.'[8]

I believe this will become even clearer in the next phase of the ICT revolution, when E-commerce becomes more prominent.

Success at E-commerce will require (amongst other things) that we have:

A stable environment of low inflation and low interest rates, so that firms can finance necessary investments;

An open global trade and investment environment and an open national economy, so that we can make full use of others' markets, improvements and ideas;

A trustworthy electronic signature and legal framework, to enforce electronic commitments;

A competitive telecommunications sector, to keep down the cost of electronic transactions;

A competitive transport sector, to deliver electronic orders either to consumers, or to firms under 'just in time' inventory management in new B2B exchanges;

A developed equites market, to help provide venture capital;

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8 Alan Greenspan, *Challenges for Monetary Policymakers*, address to the 18th Annual Monetary Conference: Monetary Policy in the New Economy, Cato Institute, Washington, D.C., October 19, 2000. Available at http://www.federalreserve.gov/BoardDocs/Speeches/2000/200010192.htm. Edmund Cartwright was the inventor in the 18th century of the power loom and the wool-combing machine. He built a weaving mill in 1787.

A solid financial sector — with competitive credit card charges, to mention a topical example particularly relevant to E-commerce;

A flexible business sector, to experiment with competing models of E-commerce, with their widely different implications for the redesign of modern corporations;

An effective competition authority to monitor the generally pro-competitive impact of the new technologies, and prevent the occasional anti-competitive exceptions;

An effective consumer protection process to give citizens the confidence to try the new modes of commerce;

An education system that prepares people for the scientific future in which facts count, rather than destroying interest in science through postmodernist and deconstructionist relativism;

A R&D system in which government contributes towards the tasks with largest external benefits, and business identifies and finances the tasks with most immediate market application;

Cultural values that applaud success, forgive failure, and encourage all to 'have a go';

An income tax system that does not act as a disincentive for mobile people with high skills;

Good corporate governance and insolvency law, to minimise the costs of the inevitable but unpredictable failed experiments; and last but far from least,

Flexible labour markets.

The path forward

This is a very long list. Achieving it requires the substance of coherent, pro-competitive policy reform across a broad front, not the simplistic and wrong-headed response of higher government taxing and spending.

No country fully delivers all these requirements — yet.

But perform a thought experiment.

How much does this shopping list sound like the US? How much does it sound like the Euro zone? How much does it sound like Australia?

Let me conclude with a few comments on labour market flexibility.

Alan Greenspan recently offered some provocative observations in attempting to explain the lower level of high-tech investment (not production) in continental Europe and Japan, relative to that in the US. I quote him at length to convey the full flavour of his analysis:

> 'Arguably, this outcome has resulted to an important degree from the particular legal structures and customs that govern labor relations in much of Europe and Asia. By choice over the decades, Europe, for example, has endeavored to protect its workers from some of the presumed harsher aspects of free-market competition. To discourage layoffs, discharging employees was made a difficult and costly process in comparison with that in the US. By law and by custom, American employers have faced many fewer impediments in recent years to releasing employees.
>
> This difference is important in our new high-tech world because much, if not most, of the rate of return from the newer technologies results from cost reduction, which on a consolidated basis largely means the reduction of labor costs. Consequently, legal restraints on the ability of firms to readily implement such cost reductions lower the prospective rates of return on the newer technologies and, thus, the incentives to apply them. As a result, even though these technologies are available to all, the intensity of their application and the accompanying elevation in the growth of productivity are more clearly evident in the US and other countries with fewer impediments to implementation.'

I emphasise that last phrase, 'other countries with fewer impediments to implementation', because I put Australia in that category. Dr Greenspan continued:

> 'Parenthetically and counter-intuitively, … reducing the risks of hiring by American employers, has contributed to a higher rate of employment in the US compared with the vast majority of our major trading partners.
>
> A particular irony in all this is that Europeans have been finding investments in the US increasingly attractive and have accounted for an

> increasing share of the expanding total of foreign investment in U.S. direct and portfolio assets.'[9]

Labour market reform is important for creating more jobs and securing employment.

I think we now realise that it was the lack of competition and flexibility in Australian markets that caused our gradual relative economic decline, and it is by heightening competition and flexibility that we are reversing it.

An open competitive economy is the economy that is going to capture and utilise new improvements, new capacities, new productivity developments.

Thank you.

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9 Alan Greenspan, *Global Economic Integration: Opportunities and Challenges*, address to a symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming
August 25, 2000. Available at
http://www.bog.frb.fed.us/boarddocs/speeches/2000/20000825.htm

The following charts and table (pages 70-72) relate to the discussion in the 2000 Chris Higgins Memorial Lecture.

Chart 1: US business sector productivity growth

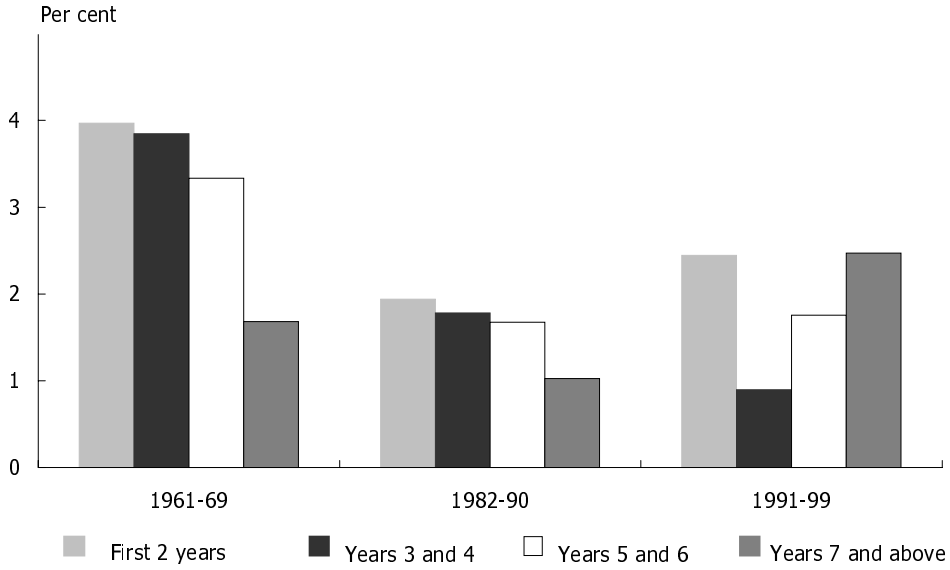


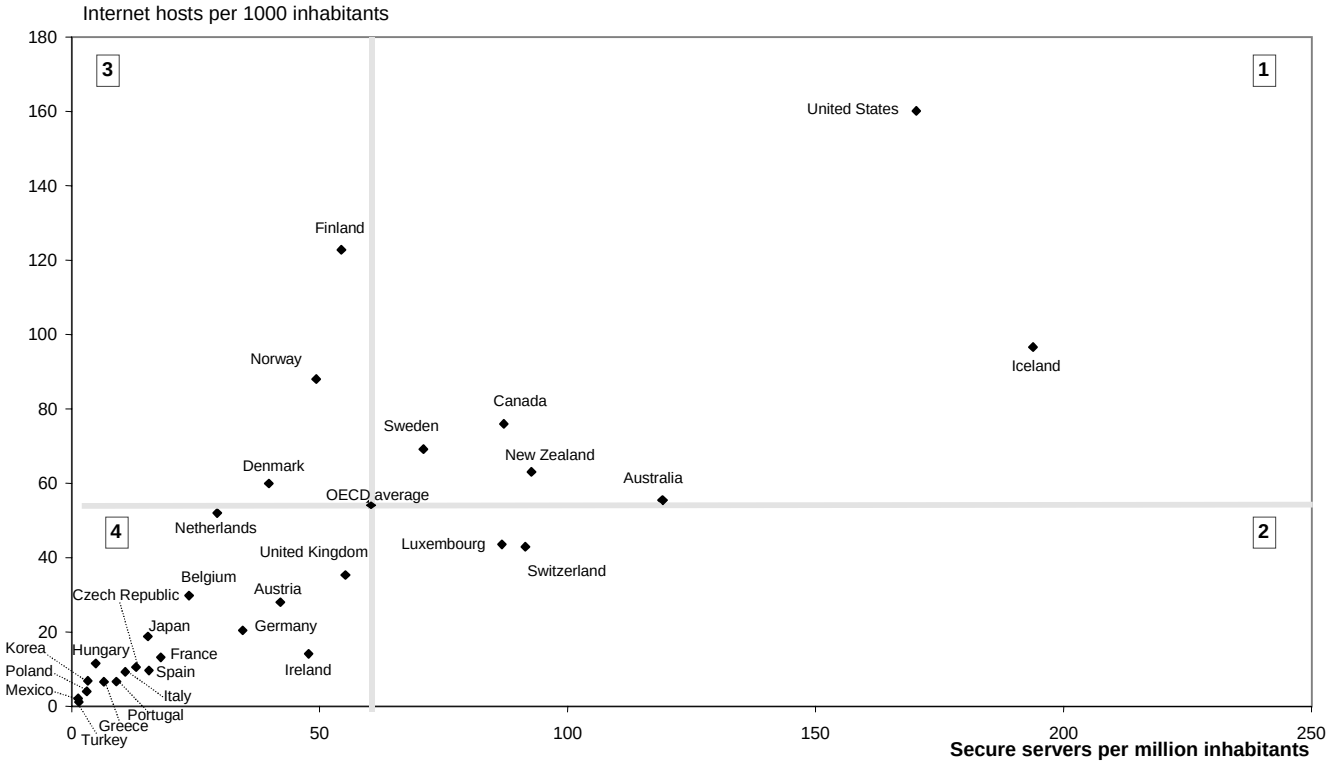
Table 1: Contributions to Australian and US productivity growth in the 1990s

	Australia		United States	
	91-95	**96-99**	**91-95**	**96-99**
1. Labour productivity growth (1 = 2 + 7)	2.05	3.80	1.61	2.66
Contributions from:				
2. Capital deepening (2 = 3 + 6)	1.41	1.60	0.60	1.10
3. IT capital (3 = 4 + 5)	0.49	0.69	0.43	0.84
4. Software	0.22	0.28	0.21	0.26
5. Hardware	0.27	0.41	0.22	0.58
6. Other capital	0.91	0.91	0.17	0.26
7. MFP growth (7 = 1 — 2)	0.64	2.19	0.57	1.25
Growth rates of IT capital stock				
Software	19.56	18.94	12.80	13.10
Hardware	20.96	29.33	17.50	36.00
Income shares				
Software share	1.17	1.47	1.90	2.40
Hardware share	1.28	1.44	1.40	1.80

Source: Wilson, D., 'Australian Productivity: Catching a 'New Economy' Wave', *Goldman Sachs Global Economics Paper No. 50*, July 2000, Table 4.

Note: Wilson uses unpublished ABS data to replicate for Australia the format of the Oliner and Sichel analysis of US productivity. He uses the Oliner and Sichel data for the US. However his presentation is not identical to Oliner and Sichel's, as Australian data does not permit the same treatment of the communication equipment sector as in the US.

Chart 2: Australia: One of six OECD members with above average diffusion of both internet hosts and secure servers



Source: OECD: *Internet and Electronic Commerce Update*, Chart 3; http://www.oecd.org/dsti/sti/it/cm/stats/newindicators.htm#chart3

Notes: Internet hosts are computers with Internet Protocol addresses (ie, connectable to the Internet). They are an underestimate of Internet access, as they do not identify computers behind a corporate firewall, able to access the Internet through a single corporate server with an IP address.
Secure servers provide a useful measure of readiness for E-commerce, as they are able to handle encrypted credit card transactions.