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.

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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.

Chart 1: Per annum growth in real GDP per capita, 1977-78 to 2007-08

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.

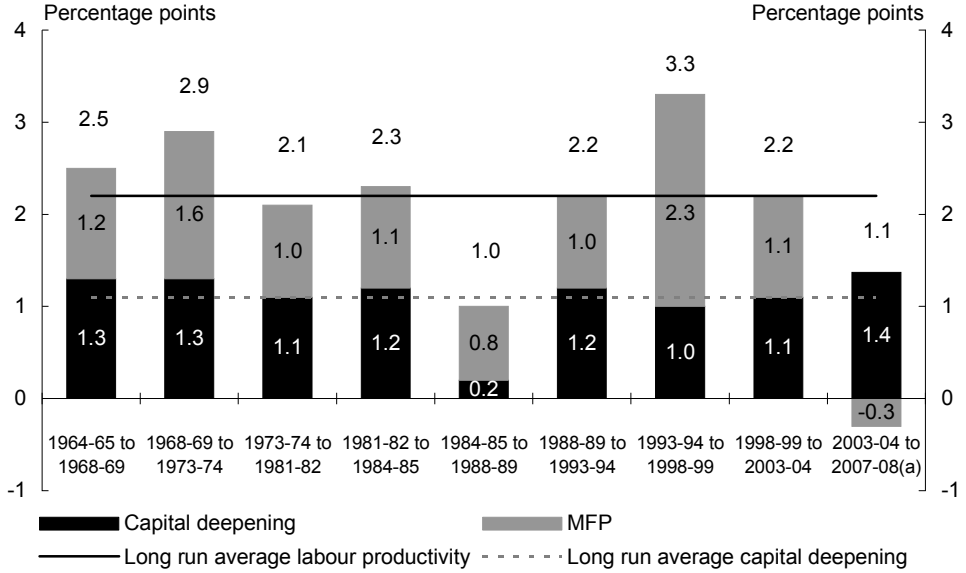
Productivity estimates also exhibit significant variation from year to year due to a combination of measurement error, real economic shocks, and the cyclical nature of productivity that arises from employment growth lagging output growth. This means it is hard to infer productivity trends from short 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

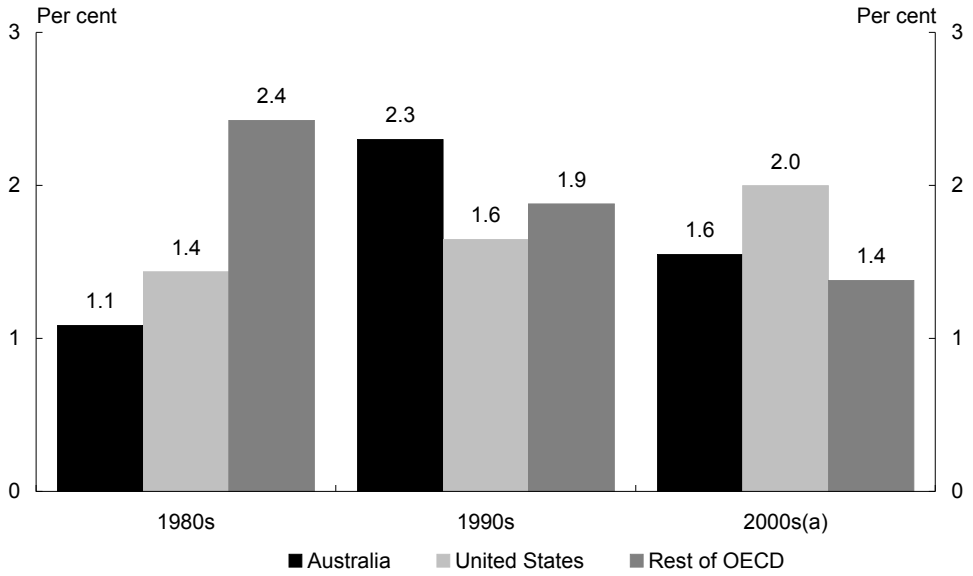
International productivity comparisons are useful in assessing Australia's relative productivity performance. Comparisons with the United States are common as it is the largest economy in the world, with among the highest GDP per capita.

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



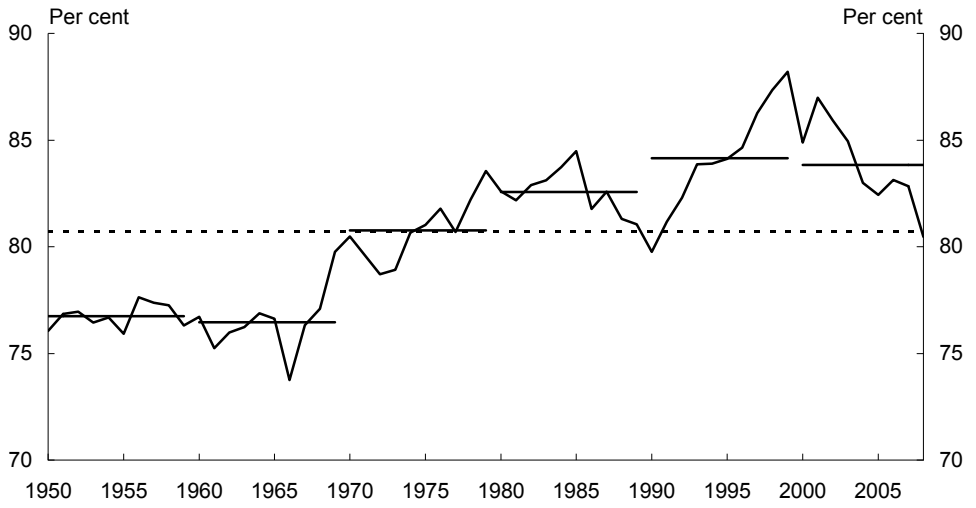
(a) Includes data up to 2008.
Note: Data are GDP per hour. Rest of the OECD are the 24 longest standing OECD member countries excluding Australia and the US. Data for other OECD countries do not extend to 1980.
Source: The Conference Board and Groningen Growth and Development Centre, *Total Economy Database*, 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

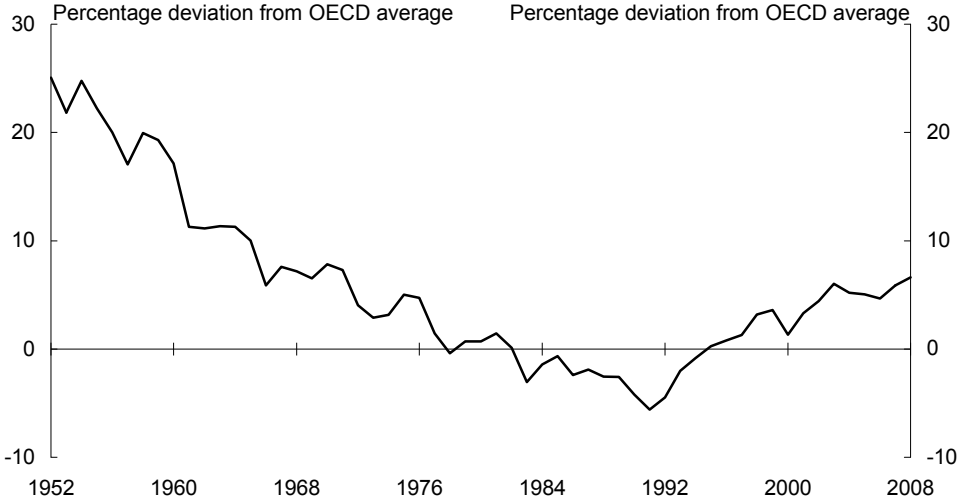
Empirical studies suggest that the microeconomic reforms of the 1980s and 1990s contributed to the surge in Australia's productivity growth in the mid to late 1990s. The primary objective of the microeconomic reforms introduced in Australia during this period was to improve economic efficiency by correcting 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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