

Implications of Australian Economic Growth for Social Equity

Francisco Perez-Arce and Nishtha Mishra

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Abstract

For much of the past century, Australia has enjoyed both economic growth and increasing economic equality. In recent decades, however, while economic growth has continued, economic inequality—whether measured by consumption, income, or wealth, or for households or individuals—has increased. To better understand the causes of this growing inequality, and possible means to address it, we review research on inequality in Australia and elsewhere, including how technology, educational attainment, and natural resources may affect inequality. We also consider the conditions under which inequality may reduce growth. We find specific ways that Australia can address inequality, including more-progressive fiscal policies and increased educational attainment.

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1. Introduction

Australia has enjoyed substantial economic growth over the past century. For much of this time, this growth was accompanied by reduced economic inequality. Since the 1980s, however, economic growth has continued, but economic inequality, measured by both income and wealth, has increased.

The recent rise of inequality, even in the face of continuing growth, can pose challenges to Australian policymakers who seek both to continue growth and to ensure that all sectors of society benefit from it. The Australian Council of Learned Academies (ACOLA), as part of its project Australia's Comparative Advantage, asked the RAND Corporation to examine the implications of future Australian economic growth on inequality. This is part of a broader effort by ACOLA to identify Australia's unique strengths and comparative advantages; establish which contexts and policy settings encourage creativity, adaptability, and innovation; and explore the natural, social, geographical, economic, cultural, and scientific attributes and capabilities needed to thrive as a nation.

This report presents evidence regarding the relationship between growth and economic inequality, as well as what affects that relationship. We begin, in Chapter Two, by reviewing the historical relationship between growth and inequality in Australia, including how growth helped reduce inequality through the 1970s but has had seemingly no effect on inequality, or even contributed to it, since the 1980s. The rapid rise in inequality since the 1980s highlights the concern that growth in the coming decades may come accompanied with further increases in inequality.

In Chapter Three, we analyze research on Australia and other nations to investigate the association between different patterns of growth and inequality. In particular, we review how technological change can improve economic output but broaden income distribution, how education can contribute to growth and equality, the cyclical effects of employment on equality, and how commodity prices in resource-rich countries can affect equality. We also consider whether inequality can jeopardize growth.

In Chapter Four, we discuss what may be done to counter inequality. We provide an overview of the impact of Australia's fiscal policy on redistribution and how it compares with that of other nations.

We conclude with the finding that some sources of Australia's future economic growth may tend to increase inequality. Nevertheless, we also find that Australia could counter increases in inequality through fiscal policy and also foster increases in educational attainment and quality to equalize the benefits of growth.

2. Growth and Inequality in Australia: Long-Term Trends and International Comparison

Since the beginning of the 20th century, Australia has experienced robust and sustained economic growth. Such growth was accompanied, until the 1980s, by reductions in inequality. Since then, growth has continued at a fast pace, but inequality—whether measured by income or wealth, or by individual or household—has increased substantially. Much of the increase in inequality since the 1980s is the result of greater discrepancies in wages.

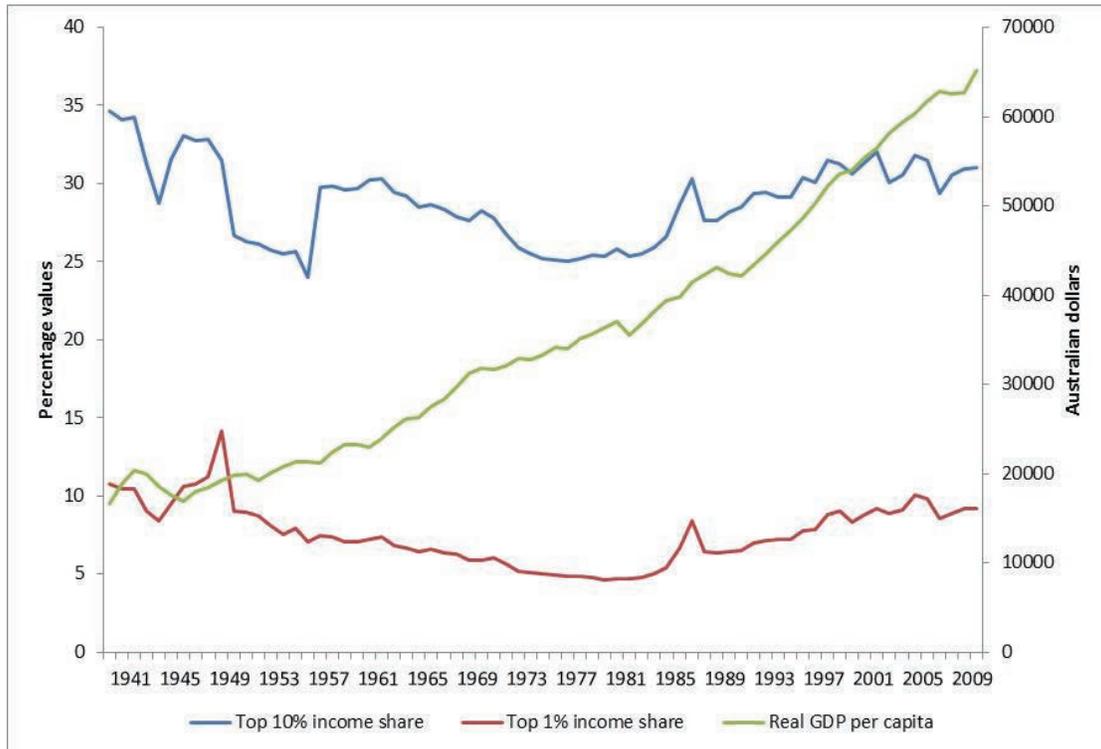
2.1. Inequality in Australia over the Long Term

Figure 2.1 shows Australian gross domestic product (GDP) per capita and the share of income accruing to the top 1 percent and top 10 percent in recent decades. While per capita GDP, in constant Australian dollars, has increased threefold since the early 1940s, the shares of income accruing to those at the top of the income distribution followed a *U*-shaped pattern, decreasing between 1940 and 1981 and rising since. At the end of the first decade of the 20th century, the income share of the top 1 percent returned to a level close to that observed in the early 21st century.

By some long-term measures, inequality in Australia has not changed greatly over time. For example, to assess intergenerational mobility, Leigh (2007) measured the elasticity of sons' to fathers' incomes for Australia at different points between 1965 and 2004; Leigh found little change and a substantially lower level of elasticity than that in the United States, suggesting that more intergenerational mobility exists in Australia. Similarly, Katic and Leigh (2015) found that wealth-to-income ratios, which indicate the relative importance of income derived from capital in the overall economy,¹ had a relatively modest increase, from 3.7 in the 1930s to 4.5 in 2010.

¹ This is the total amount of wealth divided by the total amount of annual income. It is a measure of how important accumulated wealth (capital) is in the economy. Since wealth is distributed less evenly than labor income, higher wealth-income ratios are associated with a higher share of total income deriving from wealth and, thus, with higher total income inequality (Piketty, 2014).

Figure 2.1. Long-Term Trends of Per Capita GDP and Inequality in Australia



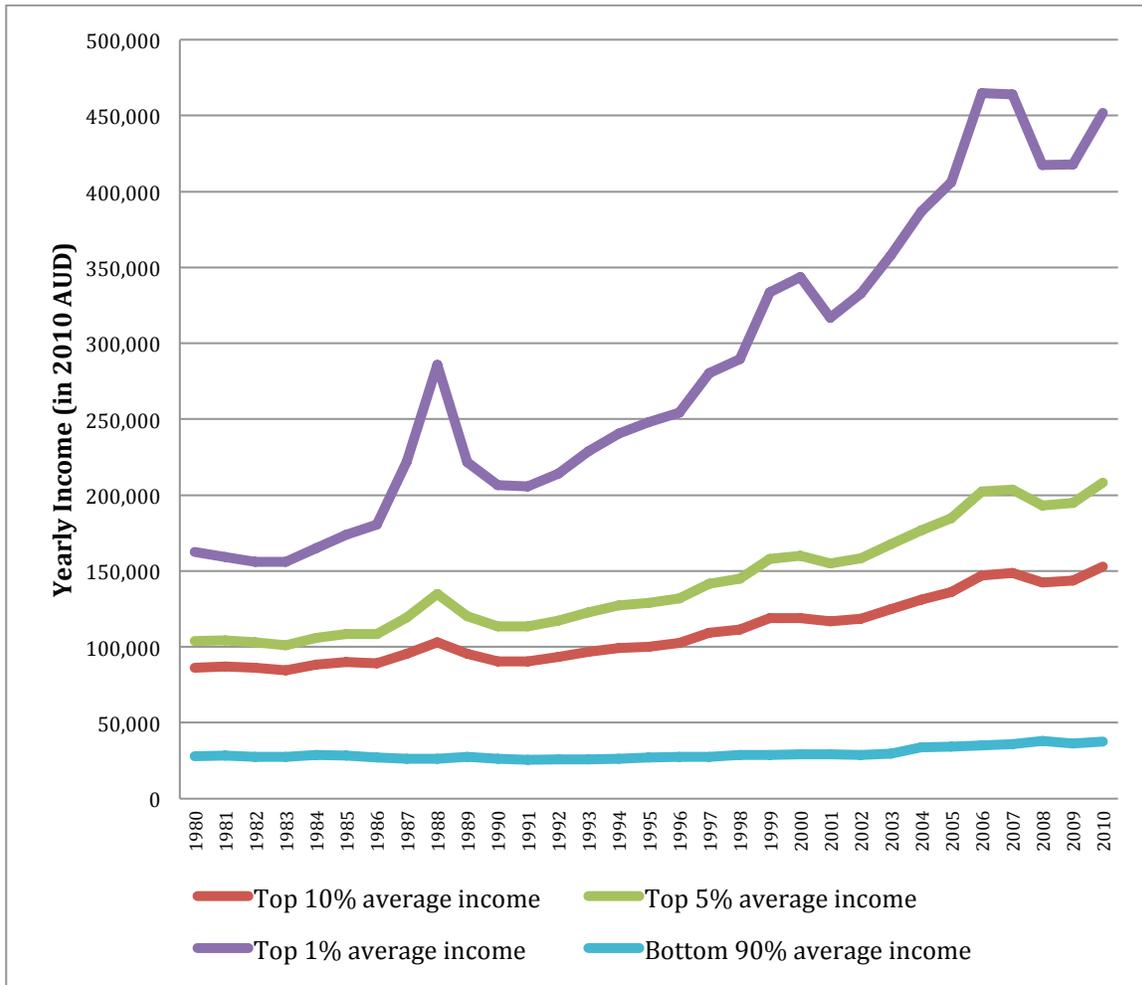
SOURCES: Author's calculation with data from the *Chartbook on Economic Inequality* (Atkinson and Morelli, 2012).

NOTES: GDP per capita is expressed in yearly Australian dollars, of 2010, on the right-hand side scale. Shares of total individual income are shown on the left-hand side slide

Such long-term trends suggest that growth is compatible with social equity and that growth increases living standards throughout society. More-recent short-term trends, however, raise questions about whether this is always the case.

In particular, since the 1980s, as Figure 2.2 shows, the highest incomes in Australia have grown rapidly in real terms, while those at lower levels have stagnated. The share of income for the top 1 percent fell to around 5 percent of all income in the early 1980s, its lowest point in Australian history, but it has grown significantly since then. The rise in both income inequality and average incomes for those with the highest incomes accelerated in the 2000s, until the financial crisis of 2007 (Whiteford, 2013).

Figure 2.2. Inequality in Australia in Recent History



SOURCE: World Top Income Database, <http://topincomes.parisschoolofeconomics.eu>.

NOTE: The data refer to the average incomes of the individuals in the relevant group.

2.2. The Widening of the Income Gap Since the 1980s

The share of total income that accrued to the top 10 percent of income earners in Australia steadily increased, from 25.4 percent in 1980 to of 30.3 percent in 1988, with the shares of income for the top 5 percent and the top 1 percent increasing steadily as well. By the end of the 1980s, average income for the top 1 percent, at \$206,683, was nearly double that of the top 5 percent, at \$113,295, and the top 10 percent, at \$90,235, as Figure 2.2 shows. Even within the top 1 percent there was concentration, with the top 0.5 percent receiving nearly 4 percent of all Australian income. By contrast, the bottom 90 percent had an average income of \$26,216. The share of income accruing to the top 10 percent decreased during the early 1990s, before reaching

30 percent in the late 1990s. The shares of income for the top 1 percent and top 5 percent increased throughout the 1990s, reinforcing the income gap of the 1980s. By the 2000s, these differences had grown larger still. In 2006, the average income of the top 1 percent was about \$465,000, more than twice that for the top 5 percent and top 10 percent, while the bottom 90 percent had an average income of about \$35,000 and accounted for only 68 percent of total income. This increase in inequality occurred despite significantly lower rates of unemployment and higher economic growth.

Growing inequality in income was matched by growing inequality in wealth. Though disparities in Australian wealth are less than those for the United States and the United Kingdom, Australia's top 1 percent had nearly 2.5 times more wealth than the top 20 percent in 2011–2012 (Richardson and Dennis, 2014). Wealth inequality has increased significantly since the 1980s. Katic and Leigh (2015) reported that the share of all Australian wealth belonging to the top 1 percent increased from 7 percent in 1978 to 11 percent in 2010, with the share of wealth belonging to the top 0.001 percent tripling from 1984 to 2012. Similarly, wealth-to-income ratios, which are indicative of the share of total income that is accrued to capital, decreased to 3.0 by 1985 and increased to 4.5 by 2010 (Katic and Leigh, 2015).

2.3. Channels for the Increase in Inequality Since the 1980s

Australian inequality has grown at both the individual and household levels. Measures of inequality at the individual and household levels serve separate purposes. Households are often composed of multiple earners; their incomes often “average out,” so household inequality tends to be lower than individual inequality. Individual-level inequality, particularly for labor income, may concentrate on working individuals, excluding those with zero income. Household-income inequality may be of greater concern to policymakers, given that it determines consumption and, therefore, welfare. Nevertheless, to understand trends in the most-prevalent source of income—that is, labor—we need to consider individual inequality, particularly wage inequality. Next, we can analyze the roles that labor-force participation and unemployment rates play on individual-level income inequality, as well as how household composition and changes in fiscal policy affect household-level inequality. Labor-force participation rates and unemployment can also affect household-level inequality.

The most-important contributors to individual-level inequality are changes in wage inequality, and, to some extent, changes in fiscal policy. Both growing disparity in hourly wages for full-time workers and growth in part-time employment for all workers have contributed to individual-level inequality in Australia (Greenville, Pobke, and Rogers, 2013). Hoeller and colleagues (2012) found that, in Organisation for Economic Co-operation and Development

(OECD) countries most similar to Australia, growth in part-time employment has contributed to inequality in labor earnings, despite employment rates above the OECD average.

Among households, the key driver to inequality seems to be strong capital income growth among higher-income households (Greenville, Pobke, and Rogers, 2013). Household income inequality did grow less in the 1980s and 1990s than individual (male) income inequality did (Austen and Redmond, 2010).

In addition to income inequality, consumption inequality has also grown in recent decades. Barrett, Crossley, and Worswick (2000) noted that consumption inequality is lower than income inequality, likely because households can smooth fluctuations in income. Overall, however, consumption inequality and income inequality have experienced the same pattern: increasing in the 1980s and accelerating more steeply in the 1990s.

2.4 Growth and Inequality in Australia: Summary

While Australia enjoyed both economic growth and reductions in income and wealth inequality for much of the 20th century, since the 1980s, inequality has increased. Much of the growth in inequality has been a result of greater inequality in individual labor earnings. Australia is not alone in having experienced increased inequality in earnings, which, as we discuss in the following chapter, can be mostly attributed to changes in global demand for skilled work. As we will also later see, fiscal policy can help reduce the consequences of this inequality.

3. How Growth Patterns Are Associated with Social Equity

To explain why the relationship between inequality and growth may vary by time and place, we review the overall relationship between growth and inequality from a theoretical perspective; we also look at international trends. We then discuss different sources of growth—particularly technology, educational attainment, and natural resources—and their implications for inequality. We also present an overview of the literature, which suggests that inequality may reduce growth.

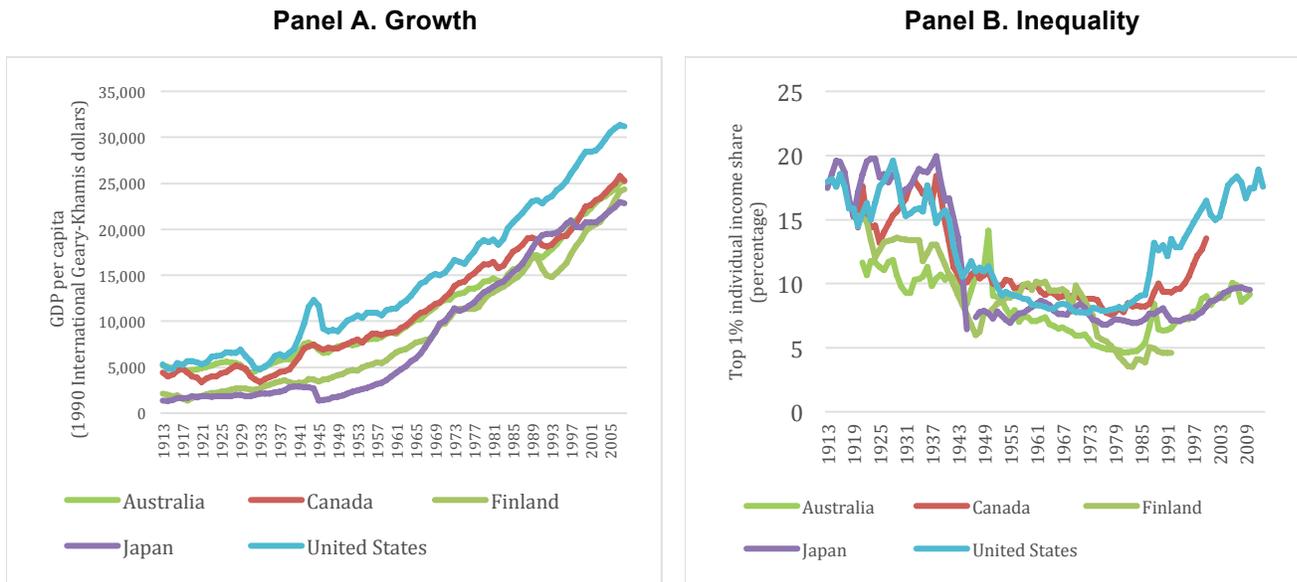
3.1. The Relationship Between Growth and Inequality

Kuznets (1955) hypothesized that inequality would first rise and then decline as a country developed, resulting in a relationship commonly known as the Kuznets inverse-*U* curve. A simple asset framework can illustrate Kuznets's hypothesis. Assume that individuals possess assets, such as capital and skills, and that these assets can be employed, either through investing or work, to produce a return. In a very primitive society, few assets accumulate and production depends mostly on unsophisticated labor, so inequality is very low. To the extent that production suffices only to satisfy the most basic needs, there is no scope for asset accumulation, so wealth inequality remains low. Increased productivity creates the opportunity for asset accumulation, which in turn creates opportunity for inequality. When some individuals start to accumulate assets, inequality increases.

In Kuznets's original theory, the increase in inequality was driven by the migration from agriculture to industrial sectors. To make Kuznets story more applicable to current settings, we can consider a society that grows through the accumulation of human capital. Inequality increases when, in an uneducated population, some people start acquiring skills that allow them to earn more. Nevertheless, when others also begin to acquire skills, inequality decreases.

Kuznets's theory helps explain the relationship between growth and inequality in Australia and many other developed countries until the 1980s. History shows that inequality was relatively low in preindustrial societies (Milanovic, Lindert, and Williamson, 2007) but increased as countries industrialized. For most of the 20th century, growth increased in leading industrial economies, as panel A in Figure 3.1 shows. But, until the late 1980s, this led to lower levels of inequality, as panel B shows, because more individuals had the opportunity to accumulate assets. Since the late 1980s, however, inequality has increased in many of these nations.

Figure 3.1. Long-Term Inequality in Developed Countries



SOURCES: For panel A, Angus Maddison project, <http://www.ggd.net/maddison/maddison-project/home.htm>. For panel B, World Top Income Database, <http://topincomes.parisschoolofeconomics.eu>.

NOTE: For panel A, see the country-source references in the appendix of Bolt and van Zanden (2014).

Kuznets’s hypothesis explains much of the “global inequality” over the past two centuries. Lakner and Milanovic (2013) found that the Gini coefficient² for all individuals around the world decreased from 72.5 percent in 1988 to 70.5 percent in 2008. At the same time, equality has decreased in the past few decades, alongside the rise of income in relatively poor countries, particularly China (van Zanden et al., 2014; Bourguignon and Morrisson, 2002).

There is no reason to expect growth to affect inequality: Cases where inequality increases as a response to growth may offset those where it decreases. Overall, across time and countries, income inequality does not respond systematically to growth (though see Box 1 for a discussion of how growth may have an effect on the concentration of the capital income share).

² The Gini coefficient is the most often used measure of inequality. It is a measure that goes from 0 (perfect equality) to 1 (all income/wealth is accrued to a single individual/group in the economy).

Box 1. The Effect of the Growth Rate on the Concentration of Capital and Its Implications for Inequality

According to Piketty (2014), capital will likely become more concentrated in developed countries, particularly where the overall growth rate of the economy is low. This, he suggested, is because when the return to capital is higher than the overall growth rate of the economy, capital owners will see their fortunes grow faster than the economy. This leads to more concentration of capital because it is less evenly distributed in the economy—and greater inequality in the concentration of wealth. Such concentration, Piketty contended, has been occurring since the 1980s (after declining between the 1930s and 1980s).

Regardless of whether Piketty’s prediction proves accurate, it is true that increases in growth, particularly increases in investment in the assets of the least advantaged, could counter this concentration.

This is relevant for Australia, even though wealth is more evenly distributed in Australia than in most other countries. At US\$217,559, Australia has the highest median wealth in the world, a level nearly four times the U.S. value, with the proportion of those with wealth above US\$100,000 also being the highest of any country and eight times the world average.

3.2 Sources of Growth and Inequality

Inequality may increase, as previously noted, as a result of increasing levels of education, particularly in societies with low levels. Inequality may also increase as a result of technology, which is often cited for the increase in inequality since the 1980s, or unemployment. We review each of these below. Because much previous research on the relationship of inequality with other variables focuses on the United States, this report does so as well, but we also discuss the context of other nations, where possible.

3.2.1. How Has Technology-Driven Growth Affected Inequality?

The United States and other developed countries have experienced significant increases in both individual and household income and consumption inequalities since the 1980s. Cutler and Katz (1992) and Karoly and Burtless (1995) showed that U.S. inequality increased substantially during the 1980s under a variety of measures, with wage inequality being the principal cause; wages rose faster for those with higher levels of education. The growth of wage inequality was reinforced by changes in nonwage compensation, leading to a large increase in total compensation inequality (Hamermesh, 1999; Pierce, 2001).

Several additional studies confirmed these facts and aimed to explain their causes (Bound and Johnson, 1992; Katz and Murphy, 1992; Murphy and Welch, 1992; Juhn, Murphy, and Pierce, 1993). These studies found the observed increases in wage inequality to be consistent with the supply-and-demand labor model for different levels of skill, with the demand for high-skilled workers (particularly college graduates) increasing. This increase is attributed to *skill-biased technological change*, with the advent and generalization of computers increasing the productivity of highly skilled occupations relative to low-skill occupations. Krueger (1993) provided further evidence of this, showing that workers who used computers earned more than otherwise comparable workers.

Other research, however, disputes that the entire increase in inequality can be attributable to technology and shows that part of it can be explained by changes to labor-market institutions. For example, Lee (1999) cited a reduction in the minimum wage, and DiNardo, Fortin, and Lemieux (1996) cited the demise of U.S. unions as reasons for greater inequality. They show that wages at the low end of the distribution suffered more in areas and industries where these institutions were weakened. These studies found that changes in labor-market institutions can explain only part of the overall increase in wage inequality, which occurred throughout the labor market.

Research on the growth in international trade (particularly with poorer countries) has found that competition between unskilled workers in developed countries and those in developing countries does little to explain decreases in wages (Bound and Johnson, 1992; Borjas, Freeman, and Katz, 1992; Lawrence et al., 1993; Krugman, 2000). Lawrence and colleagues (1993) noted that the lack of change in U.S. terms of trade is inconsistent with a hypothesis that trade has depressed wages. Krugman (2000) similarly suggested that the volume of trade was too small to have played a major role in increasing inequality (though Krugman [2008] suggested that conditions may change and trade may play a more important role in the near future). In addition, trade with poorer countries only started to increase in the 1990s, while the substantial deterioration in low-skill wages began in the 1980s (Card and DiNardo, 2002).

Though it is still debated how much other factors contributed to the growth of wage inequality, there is a general consensus that technology has played a major (if not *the* major) role. Autor, Katz, and Kearney (2008) concluded that “models emphasizing rapid secular growth in the relative demand for skills—attributable to skill-biased technical change—and a sharp deceleration in the relative supply of college workers in the 1980s do an excellent job of capturing the evolution of the college/high-school wage premium over four decades.” However, they also found some patterns that the simple model cannot explain. For instance, a deceleration in the increase of inequality would imply a deceleration in the growth of relative demand for college workers (which is puzzling given the continued expansion of computer use in those

years). More important, since the 1990s, there was not only a continued increase in the relative wage of skilled professionals but also a relative (to the median) increase in employment and wages of low-wage occupations. This phenomenon has been referred to as *job polarization*.

Job polarization has been reconciled with a version of skill-biased technological change, which holds that information technology has enhanced the productivity of abstract work done by highly educated (college-level) workers, to the detriment of “routine tasks” typically done by moderately educated workers in the middle of the wage distribution. At the same time, job polarization has not affected manual nonroutine tasks, such as food preparation and similar services (Autor, Levy, and Murnane, 2003; Autor, Katz, and Kearney, 2006). Technological change will not always increase wage inequality. It is not possible to predict with certainty that technological change will continue fueling inequality, even if it has in recent decades.

Technology has affected inequality throughout the developed world. Inequality induced by skill-biased technological growth has occurred in Britain (Goos and Manning, 2007), and job polarization has occurred in the United Kingdom, Germany (Spitz-Oener, 2006; and Dustmann, Ludsteck, and Schonberg, 2009), and across Europe (Goos, Manning, and Salomons, 2009). Several Asian countries have also seen an increase in inequality, which Kanbur, Rhee, and Zhuang (2014) have attributed, in part, to technology. Technology-driven growth may also affect the relative demand for capital and, consequently, its return—thereby explaining part of the increase in wealth inequality and the share of income accrued by top earners.

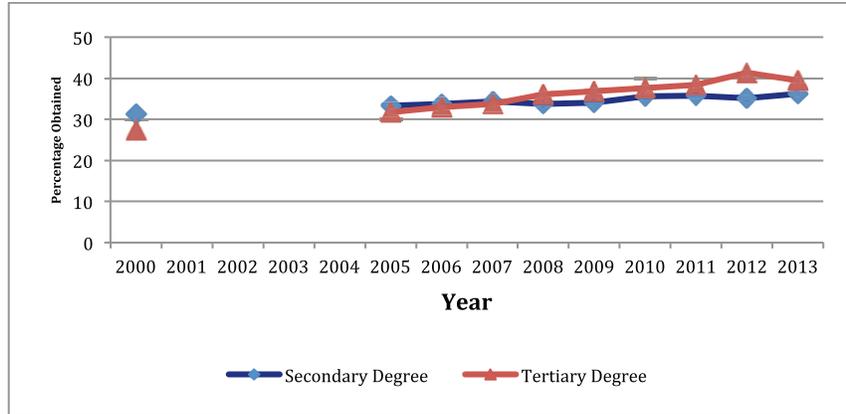
3.2.2. How Is Inequality Affected by Economic Growth Episodes Characterized by Increases in Human Capital?

The increase in human capital has been one of the key defining elements in economic development for at least a century. In almost every country, the 20th century saw educational attainment rise to levels never before seen. While physical capital had been the main destination for investment since the Industrial Revolution, education, or human capital, took over the previous century.

Australia experienced major growth in educational attainment during the 20th century and continues to do so. Figure 3.2, panel A shows the growth in attainment of secondary- and tertiary-level degrees since 2000.

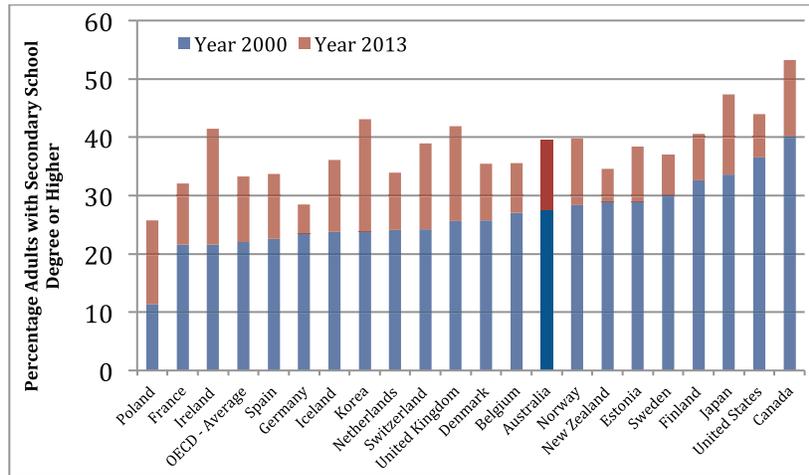
Figure 3.2. Educational Attainment in Australia and OECD Countries

Panel A. Secondary- and Tertiary-School Attainment Rates in Australia Since the 2000s



SOURCE: International Labor Organization, ILOSTAT database, www.ilo.org/ilostat.

Panel B. Tertiary-School Attainment Across Countries



SOURCE: International Labor Organization, ILOSTAT database, www.ilo.org/ilostat.

Investment in education has a high economic return to the individual in almost every country (Psacharopoulos and Patrinos, 2004), including Australia (Leigh, 2008; Leigh and Ryan, 2008). Education also generates economic growth for the country as a whole (Barro, 2001; Krueger and Lindahl, 2001).

An increase in the supply of highly educated workers can reduce inequality in two ways. First, as the share of the highly educated population increases, inequality decreases (as discussed in section 3.1). Second, the relative wage of high- to low-educated individuals also decreases: given the increase in supply of highly educated workers and a reduction of supply of low-educated ones.

The effect of an increase in the educated population on inequality depends on the existing distribution of the educated population. In undeveloped locations, where most people are not educated, an additional college graduate will increase inequality: Where most people are uneducated, an additional graduate makes the average difference in the distribution increase. In highly developed societies, where most individuals are highly educated, an additional educated individual reduces inequality: Where most people are educated, an additional graduate makes the average difference in the distribution decrease.

This also points to the fact that increasing education at the lower levels is more equalizing than at the higher levels. Reducing high-school dropout rates reduces inequality unambiguously. Increasing education at the graduate level in high-paying fields, though possibly very beneficial to society in many aspects, would likely increase inequality (although increasing the supply of the highly educated would still have the equalizing effect through the return to schooling).

Upgrading skills at all levels can induce growth, but only upgrading skills at lower levels of education increases equality. What is a “low” and what is a “high” level of education, however, is relative. The more developed (higher educated) a nation is, the more likely that growth fueled by increased education will be equalizing.

In Australia, increasing the attainment and the quality of education at high school and university levels will further economic growth and promote equality. As seen in panel B of Figure 3.2, Australia has a level of educational attainment, which is comparable to other developed countries. Increasing the quality of schooling would also have a positive impact on growth and inequality. Australia has room for improvement here, given that standardized test scores in reading and math have shown stagnation in recent years (ACOLA, 2013).

The second way that investments in education foster equality is by affecting the relative wage of high- and low-skilled workers. Some of the measures used in labor economics to study inequality are in fact direct measures of the returns to schooling and focus on the average difference in wages between workers with different levels of education (for instance, the college versus high school wage gap).

The hypothesis of the effects of technological change on wage inequality since the 1980s relies on a change in trends in the education workforce. The supply of highly educated workers affects the relative wage of high-skilled workers and low-skilled workers as much as the demand for them does. Technology had been leading to an increased demand for skills for many decades, but in the 1980s, the supply of workers stopped increasing at the same pace. This was a consequence of slowing educational attainment for cohorts born in the 1950s and later (Goldin and Katz, 2001, 2009). Acemoglu and Autor (2012) documented “[t]he role of the slowdown in the quantity and quality of schooling in the surge in the U.S. earnings inequality: both the canonical model and variations thereof along the lines of our task-based framework suggest that without this slowdown, the college/high-school earnings gap and various other skill premia would have risen by less, and thus inequality in the U.S. labor market may not have become as pronounced.”

There clearly is room for greater educational attainment and quality in Australia. Australia ranks high in attainment and quality but is not at the very top, and some countries have been registering faster improvements. The fact that the economic returns to schooling are high suggests that education is a wise investment, both individually and socially; thus, measures to boost education levels—including expanding the supply of educational institutions, raising the minimum age when students can leave school, and investing in educational quality—are likely to have positive impacts on economic equality, in addition, of course, to other substantial individual and social benefits (Oreopoulos and Salvanes, 2011).

Though education is the most common way to acquire human capital, there are other ways to acquire skills. Human capital begins to form in early childhood (Heckman, 2007), or even earlier, as the prenatal environment also affects health outcomes that facilitate later skill acquisition. Investments in early and preschool education can increase the skill level of the population and thus foster growth and reduce inequality. Long-term follow-up of randomized-controlled experiments have shown very high social returns to early-education programs (Belfield et al., 2006). University-level education can also promote growth and equality (Leigh and Ryan, 2008), particularly in Australia (Daly et al., 2015).

3.2.3. How Has Growth, When Fueled by Commodity Prices (in Resource-Rich Countries), Affected Inequality?

One particular source of growth that may have a special set of consequences for equality is income derived from natural resources. Such income may increase either due to a change in international prices or the discovery, or increased exploitation, of new resources.

The legal framework is particularly important to determining the distributional impacts of such growth. Society benefits to the extent that public coffers benefit from rents. Public

expenditures tend to be progressive, particularly in Australia, because of the use of means testing in pensions and other transfers (see Chapter Four). Increases in rents from natural resources tend to reduce inequality if they translate into increased public expenditures.

However, the effects may differ depending on the government's decisions and reactions. Consider two scenarios regarding how the government responds to a windfall from an increase in the price of a natural resource. In the first scenario, the government reacts by increasing public expenditures, including transfers and social spending. Because public spending is progressive, this tends to reduce inequality. In the second scenario, spending is fixed, and the increase in revenues is used to reduce taxes (equally for all types of taxes). In this case, inequality would climb as taxes are reduced (because taxes are usually progressive, as they are in Australia).

Australia's mining has propelled economic growth that has coexisted with both increasing and decreasing inequality. For instance, mining growth in the mid-19th century coincided with increases in inequality, while growth in the 1960s and 1970s coincided with reductions in inequality.

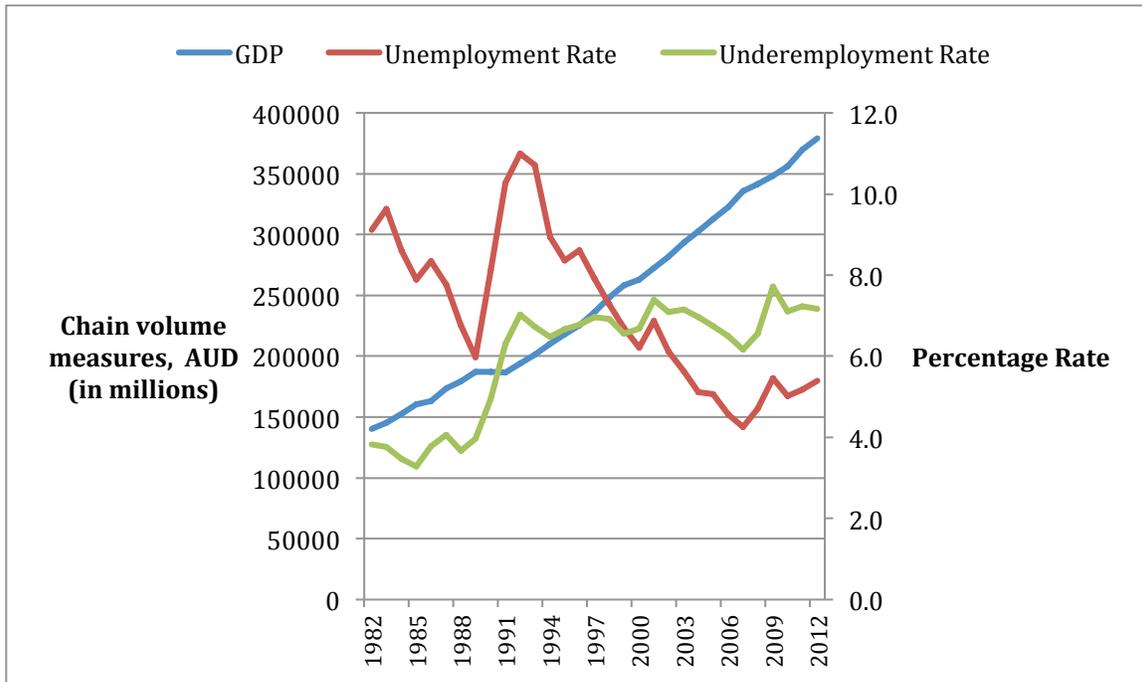
Recently, Australia's growth has benefited significantly from the commodity boom, with the mining contribution to GDP increasing drastically. China's industrialization has particularly helped Australia in the 2000s, through the increasing demand for coal, iron ore, natural gas, and other natural resources. This demand has also benefited Australia's public sector, particularly in states and territories where governments levy royalties from mineral resources.

However, once the boom dissipates, the overall resources for public spending may decrease. Given that public spending in Australia is progressive, a future reduction in mining could reduce Australia's ability to counter inequality unless it is willing to increase taxes or further increase the progressivity of its taxation or expenditures.

3.2.4. Inequality and "Jobless Growth"

Household income inequality is greatly affected by unemployment or underemployment. In fact, the level of employment and underemployment is more important to Australia than to other developed countries. Growth, of course, is related to unemployment. During recessions, unemployment tends to be high, as shown in Figure 3.3, which drives inequality higher.

Figure 3.3. Cyclical Fluctuation in Unemployment and Underemployment Rates



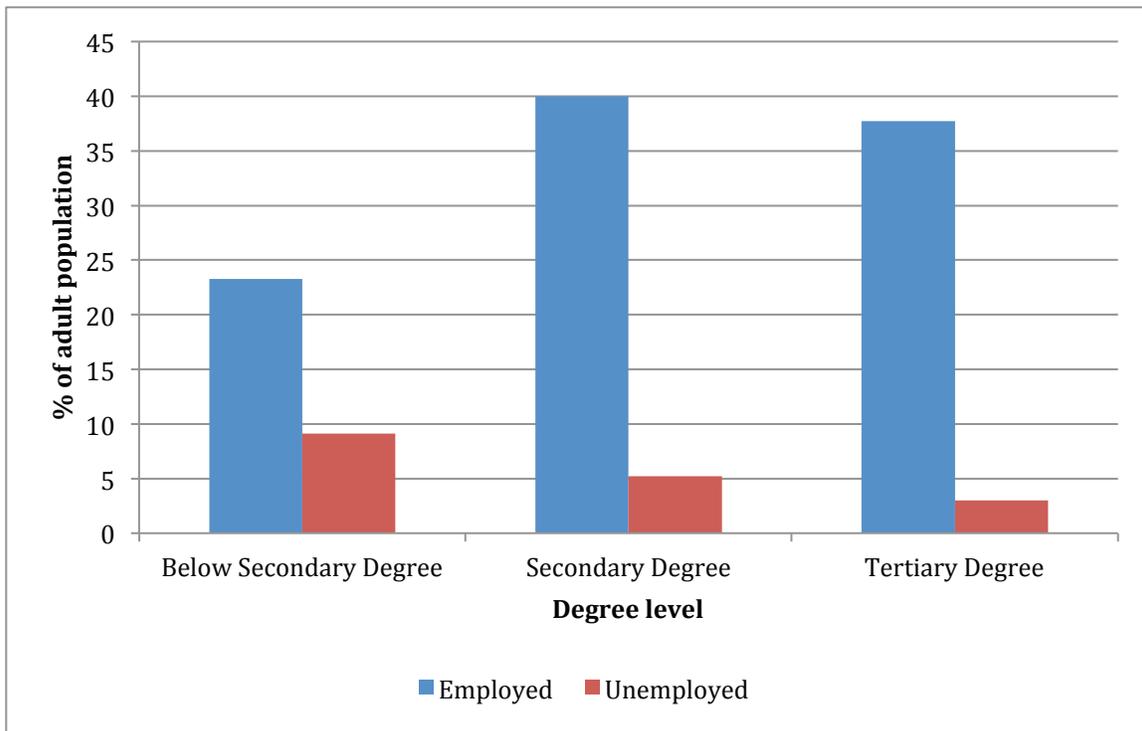
SOURCE: Australian Bureau of Statistics.

NOTES: GDP in million of Australian dollars is shown on the left-hand side scale. Percentages of the labor force that are unemployed and underemployed are shown in the right-hand side.

The relationship between growth and unemployment is mostly cyclical. In the long run, unemployment tends toward its steady-state level. Other variables, such as the level of regulation, determine its long-term level. Therefore, the strong relationship between unemployment and inequality is mostly significant at the business-cycle level.

Persistently high unemployment may affect long-term growth, particularly if such unemployment is the result of rigid labor-market policies. In Australia, this does not seem to be a serious risk. The labor market is flexible, and unemployment has been low since the last recession. The more relevant question for Australia is whether policies are in place to mitigate fluctuations. Education policy can also help keep unemployment and underemployment rates low. As Figure 3.4 shows, unemployment rates are lower for individuals with higher education levels.

Figure 3.4. Employment and Unemployment Rates by Education Categories in 2013



SOURCE: International Labor Organization, ILOSTAT database, www.ilo.org/ilostat.

3.3. Is There a Causal Effect of Inequality on Growth?

We have reviewed different ways that growth can affect inequality. We argue that even growth that increases inequality should be welcome because public policy can help counter some negative effects of growth. Yet some contend that increased inequality could hamper future growth.

Several mechanisms have been proposed for why inequality may hinder growth. One is that inequality may affect public policies that promote redistribution, to the detriment of efficiency (Alesina and Rodrik, 1994). Others posit that poorer individuals face credit-market imperfections and forgo profitable investments, so that a society with lower inequality is able to reduce inefficiencies due to credit constraints (Barro, 2000). Inequality could lead to social unrest, which undermines the institutions needed for economic growth (Barro, 2000). At the same time, some hypothesize that inequality would lead to greater growth, assuming the wealthy save more, leading to a society where more income going to the rich results in higher savings and investments (Kaldor, 1955; Bourguignon, 1981). Thus, from a theoretical perspective, we could expect the effect of inequality on growth to go in either direction.

Earlier research relying on cross-sectional differences to estimate the effect of inequality on growth found a negative effect of growth on inequality (e.g., Alesina and Rodrik, 1994; Persson and Tabellini, 1994), regardless of inequality measure used. These studies are not, however, altogether convincing, because identifying causality is difficult when using cross-sectional data. Furthermore, Deininger and Squire (1996) showed that the results do not hold within regions.

Deininger and Squire (1996) compiled a cross-national panel of data that contains Gini coefficients and quintile shares, both of individual and household data. Several studies have used these data to study the relationship between growth and equality. Forbes (2000) found that increases in inequality tended to precede increases in growth, rather than growth leading to inequality. Barro (2000) found a weak negative relationship between residual growth (growth not explained by the usual predictor variables, such as current and lagged GDP per capita) and inequality (though there was a slight positive relationship among high GDP countries). Other studies using these data and the panel structure found the link to be weak and sometimes insignificant (e.g., Li and Zou, 1998). Halter, Oechslin, and Zweimüller (2014) found a positive effect of growth on inequality, but only when focusing on the short term (year-to-year changes in inequality are associated with short-lived increases in growth). Table 3.1 summarizes studies on the relationship between growth and inequality.

Table 3.1. Studies of the Effect of Inequality on Growth

Reference	Data Structure	Effect of Inequality on Growth	Notes
Alesina and Rodrik (1994)	Cross-section	Negative	Negative effect of income and land inequality
Persson and Tabellini (1994)	Cross-section	Negative	Negative within democracies
Perotti (1996)	Cross-section	Mixed	Negative in high-income countries
Deininger and Squire (1996)	Cross-section	Negative/insignificant	Negative relationship across regions, insignificant within regions
Li and Zou (1998)	Panel	Positive/insignificant	Increases in inequality associated with increase in growth
Forbes (2000)	Panel	Positive	Positive for middle- and high-income countries
Barro (2000)	Panel	Mixed	Positive in rich countries and negative in poor countries
Banerjee and Duflo (2003)	Panel	Mixed	Changes in any direction associated with increases in inequality
Voitchovsky (2005)	Panel	Mixed	Positive for “top income” inequality, negative for “bottom income” inequality
Halter, Oechslin, and Zweimüller (2014)	Panel	Mixed	Positive, but only in the short run
Ostry, Berg, and Tsangarides (2014)	Panel	Negative/insignificant	Inequality has negative effect, redistribution is neutral

Overall, the existing literature suggests a potential effect of inequality on growth, but empirical results have been mixed and inconclusive, mostly because of the difficulty disentangling the effect of inequality on growth from reverse causality and omitted variables. This has led some researchers to focus instead on the specific links between inequality and growth. Alesina and Perotti (1996) studied the effect of inequality on political instability. Research on the fiscal policy channel (i.e., on the theory that inequality leads to inefficient redistribution through fiscal policy) provides very weak evidence of a positive association between inequality and fiscal redistribution (see Perotti 1994, 1996; Persson and Tabellini, 1994; and De Mello and Tiongson, 2006, for a survey).

This analysis does not imply that forces causing unequal growth should be avoided, as there are policy tools that can counter their negative effects. Even if such policies had a negative effect on growth, Australia may consider pursuing them to ensure that the benefits of higher income are spread more widely. In the next chapter, we review the effects of fiscal policy on inequality in Australia and OECD countries.

4. Public Policies That Affect the Relationship Between Growth and Inequality

While there is no conclusive evidence on the relationship between growth and equality, one hypothesis is that a positive association between inequality and subsequent growth arises because redistribution lowers the efficiency of the economy. In other words, societies that achieve a lower level of inequality through redistributive policies may pay a price in terms of efficiency, which results in lower growth.

Some studies have attempted to analyze the link between redistribution and growth by analyzing cross-country and panel data. These studies find only a weakly negative, or even positive, relationship between redistribution and growth (Bergh and Henrekson, 2011; Cingano, 2014; OECD, 2014a; Ostry, Berg, and Tsangarides, 2014).

Nevertheless, it is clearly the case that raising taxes has costs in terms of efficiency. Taxes reduce incentives for work, entrepreneurship, and investment. Hence, regardless of its ultimate effects, redistribution through fiscal policy does pose a trade-off between efficiency and equality. Policymakers must consider this trade-off when deciding how to respond to increases in inequality.

Below we discuss the redistributive impact of fiscal policy in Australia: how it compares with other developed countries and how it has changed in recent decades. We conclude by describing policy options that could be used in response to increases in inequality.

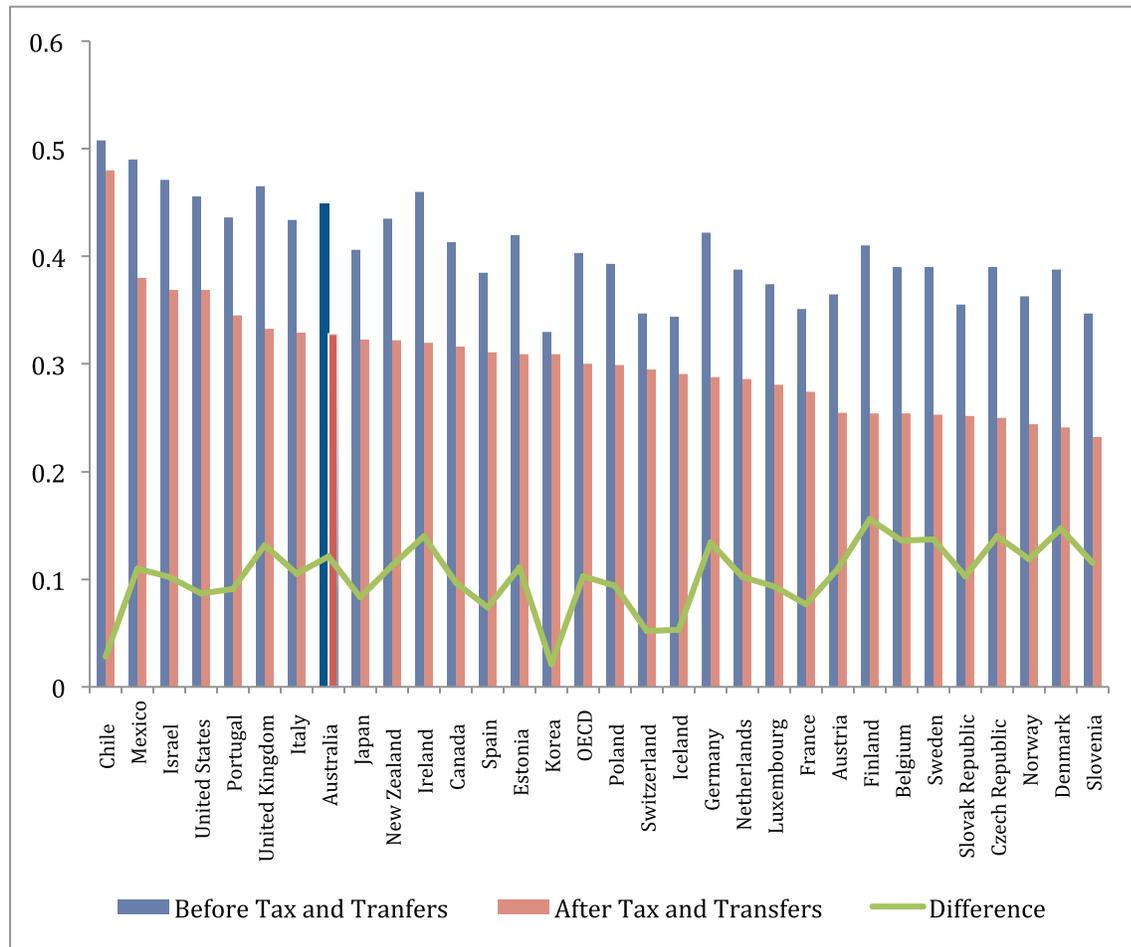
4.1. The Redistributive Impact of Fiscal Policy in Australia

Public policies affect inequality in many ways. Over the long term, public investments affect the earning capabilities of different segments of the population. Public goods, such as infrastructure, also benefit segments of the population in different ways, though these may be difficult to measure.

In the short term, fiscal policy directly affects the income that households dispose through tax and transfers. The before and after “tax and transfers” income distributions differ substantially from each other. Estimating the difference in a measure of inequality (such as the Gini coefficient) between the distribution before and after tax and transfers serves to describe the redistributive impact of fiscal policy.

Fiscal policy plays an important role in inequality. Cross-country comparisons show that much of the difference in income inequality arises due to differences in taxes and transfers. Most countries that are particularly unequal have low levels of redistribution, as shown in Figure 4.1.

Figure 4.1. Income Inequality in OECD Countries Before and After Taxes and Transfers



SOURCE: Authors' calculations with OECD data.

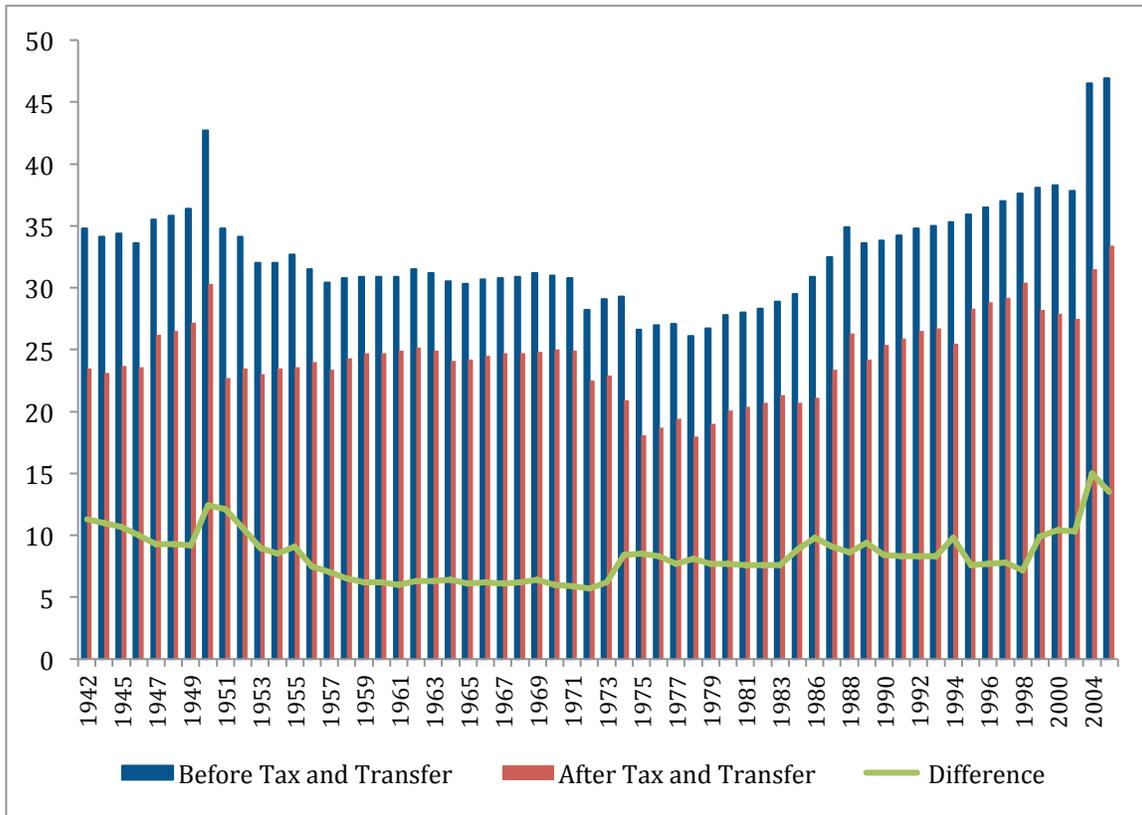
NOTE: The scale is the Gini coefficient, before and after tax and transfers.

Although Australia has one of the highest pre-tax income inequality measures among OECD members, its after-tax income inequality is closer to average, because the difference between pre-tax and post-tax income inequality in Australia is larger than the OECD average. Australia's pre-tax income inequality is comparable to that of the United States and is larger than Italy's, but it has a lower after-tax and transfer inequality than both of those countries.

This suggests that even in cases where economic and social forces tend to enlarge inequality, fiscal policy can reduce disparities and make growth benefit all income groups. Johnson and Wilkins (2004) showed that taxes and transfers mitigated increases in inequality in the 1980s and

1990s, so that disposable income inequality increased less than (pre-tax) earnings inequality. Figure 4.2 shows the same pattern, particularly for the early 2000s.

Figure 4.2. Australian Gini Coefficients Before and After Tax and Transfers



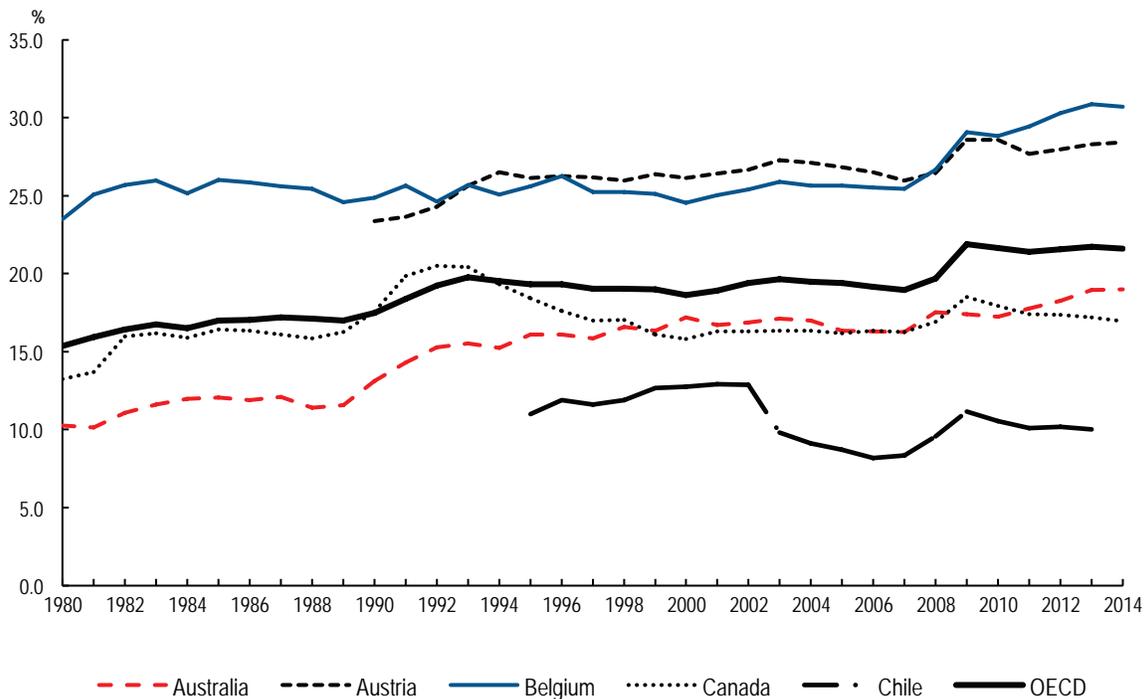
SOURCE: Leigh (2005) and OECD.

NOTE: Gini coefficients, before and after tax and transfers.

Transfers tend to be more targeted and taxes more progressive in Australia than in other OECD countries, leading to a noticeable redistribution of income (Stewart et al., 2015). The most pro-redistribution aspect of Australia’s fiscal policy is the means testing of social-security recipients. The social-security system provides means-tested income support to retirees, single parents, the disabled, the unemployed, and low-paid workers with children, but the largest share, by far, is spent on pension payments. Hoeller et al. (2012) showed that these transfers play a key role in redistributing income and creating a more equal society in Australia. Cash transfers accounted for more than 75 percent of the overall redistributive impact, with taxes accounting for the remaining 25 percent.

As Figure 4.3 shows, while Australian social and public expenditures generally increased between 2007 and 2014, they remained below those of other OECD countries. If Australia desired to reduce inequality, it could increase expenditures. Because pensions tend to be a major component of cash transfers, those with higher incomes may contribute more during their working lives and receive higher pensions later. The potential redistributive impact is lessened because of the structure of the pension system.

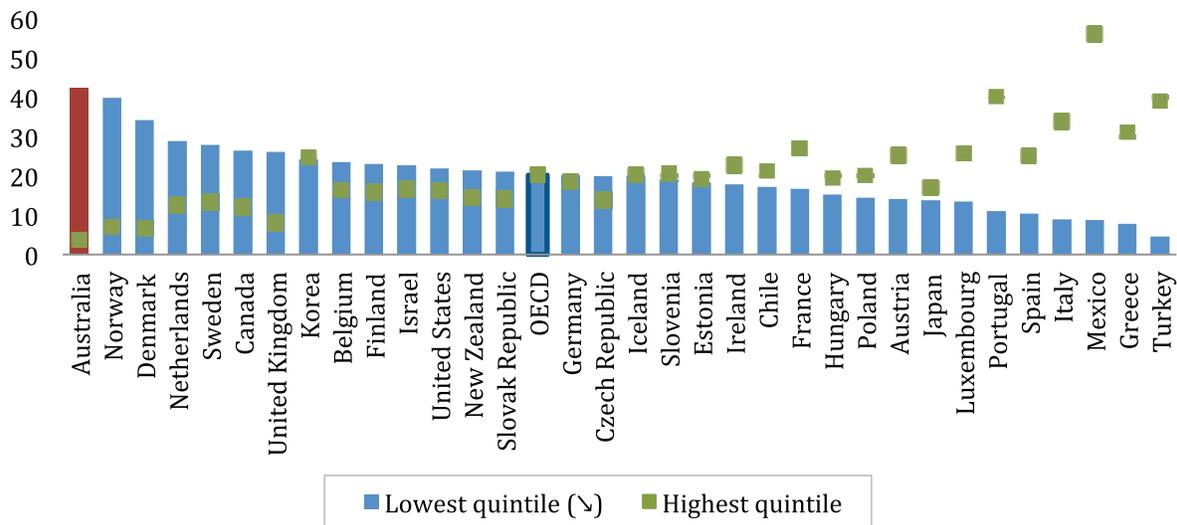
Figure 4.3. Public Social Spending as a Percentage of GDP in Australia and Other OECD Countries



SOURCE: OECD Social Expenditures database.

Though the level of transfers is lower than the OECD average, the targeting is more progressive than in most countries. Compared with other countries, Australia allocates a higher percentage of transfers to those with incomes in the lowest quintile, as shown in Figure 4.4, largely because its pension was designed to be means tested. Thus, the redistribution impact of its expenditures is higher than one would predict based on their magnitude alone.

Figure 4.4. Percentage of Public Social Benefits in Cash Paid to the Lowest and Highest Quintiles, Total Population, 2011



SOURCE: OECD 2014b.

Taxes help redistribute income in two ways: (1) by funding transfers and social expenditures (which are themselves progressive) and (2) by a progressive tax schedule that directly affects the distribution of after-tax income. Hoeller et al. (2012) found that tax schedules accounted for just 25 percent of the redistributive impact of the fiscal sector. In fact, top income rates have been reduced substantially, from 60 percent in the early 1980s to 45 percent today. Atkinson and Leigh (2007) found that one-third of the rise in top incomes over recent decades (as described in Chapter Two) was due to cuts in top tax rates.

Increasing the progressivity of the tax schedule is one way that Australia could counter inequality, although, of course, it would have to consider the trade-off between efficiency and equality.

4.2. Policy Options for Dealing with Implications of Future Growth on Inequality

Several developed nations, including Australia, have seen strong growth accompanied by increased inequality since the 1980s. This has often been due to growth driven by technological change, which raises the demand for high-skilled workers.

Some policies aimed at achieving growth that are in all other respects commendable, such as fostering improvements in technology, could have a detrimental effect on inequality. This does not imply that these policies need be avoided; their unwelcome effects can be counteracted by the pro-equality effects of other pro-growth policies (such as those that contribute to increased skills) or by fiscal policy. Other pro-growth policies, such as expanding access to and increasing the quality of education, can reduce inequality for those with low levels of skills (and thus of income).

Some forces may work to increase inequality regardless of the policies that Australia undertakes. It is quite possible that increases in demand for technology will continue to increase the relative wage of highly skilled Australians. It is also possible that the concentration of wealth will continue to increase.

Regardless of whether such forces materialize, Australia can increase social equity through fiscal policies. Though Australia's current policies already reduce inequality substantially, there is room for further redistribution. Such redistribution may reinforce growth, although such policies have to be chosen with care, given the trade-off between equity and efficiency.

The redistributive impact of Australia's fiscal policy depends heavily on the high targeting level of its transfers. Australia's public sector could increase its redistribution impact through several means.

- *Increase the progressivity of its tax system*, by reversing some of the income-tax cuts on top earners from the past two decades.
- *Increase tax revenue* by raising rates, expanding the tax base (for instance, consumption taxes are currently applicable to only some items), or reducing some of the exceptions to income and production taxes. Given the progressivity of expenditures, increasing revenue (and expenditures) could reduce inequality even if it is not done in a progressive manner. Issues for debate range from whether to broaden the base or increase the Goods and Services Tax (GST), to how to properly tax multinational corporations (Stewart et al., 2015). Australia's overall tax burden is lower than that of other comparable countries, such as Canada (Stewart et al., 2015) and less than the OECD average. It is also lower now (around 27 percent) than at its highest point in the 2000s (30 percent).
- *Make public expenditures even more progressive* (though, as noted, Australia's transfers are already fairly progressive).

It is beyond the scope of this study to analyze which of these options is the best way to increase the redistributive effect of the public sector, or even if this is desirable. The point, however, is that Australia has opportunities to adjust to potential increases in inequality that may accompany growth. In any case, the efficiency costs of these alternatives need to be considered along with their potential to reduce inequality.

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