

Tax 101 Activity 1: What is tax and why do we need it?

Years 11-12

# TASK 2

## GOVERNMENT POLICIES TO REDUCE INEQUALITY

Worksheet

Focus: Economics

Opportunities: Mathematics

### YOU WILL:

- ▶ identify and assess how taxation and transfer payments have been used to address inequality in the distribution of income
- ▶ represent and interpret data and diagrams relating to the distribution of income
- ▶ write an extended response (based on stimulus) on the effectiveness of government policies to reduce income inequality
- ▶ interpret the Lorenz curve and Gini coefficient for the distribution of income in the economy
- ▶ analyse recent trends in the distribution of income
- ▶ understand the trade-offs associated with achieving a more equitable distribution of income

### YOU WILL NEED:

- ▶ *Fact sheet: What is tax and why do we need it?*

### PART 1: Measures to reduce inequality in the distribution of income

In Australia, the government uses budgetary measures such as the tax-transfer system to reduce inequality in the distribution of income. The government intervenes in the economy to reduce inequality or support equity in the distribution of income by imposing higher taxes on wealthiest groups and redistributing income to lower socio-economic groups. Two main mechanisms are used to achieve this:

- ▶ The progressive system of income tax
- ▶ Social welfare payments

The government also provides in-kind support to the disadvantaged and low-income individuals and families through the provision of merit goods such as health and education. These are regarded as merit goods because if not paid for by the government, they would be underproduced.

#### The progressive system of income tax

Australia has a progressive income tax system so that as an individual's income rises, they pay a higher proportion of their income in tax. Over time, several policy measures have been introduced that impact on equality in Australia. Examples are the 2012-13 federal budget, where the tax-free threshold was increased from \$6,000 to \$18,200 and the 2016-17 budget where the tax threshold of \$80,000 was increased to \$87,000.

#### Social welfare payments

Tax revenue is used to transfer money from people in high income groups to people in low income groups through the payment of social welfare payments. Social security and welfare payments provide significant income support for disadvantaged groups in Australia.

Expenditure on social security by the Australian government accounts for around 35% of total budgetary expenditure. In the 2017-18 budget, \$164.1b was allocated to social security and welfare.

## Data

Table 1: Changes to the Personal Income Tax System

Previous taxable income threshold range from 2012	Tax rate	2018 taxable income threshold range	2018 taxable income threshold range
0 - \$6,000	0%	0 - \$18,200	0%
\$6,001 - \$37,000	15%	\$18,201 - \$37,000	19%
\$37,001 - \$80,000	30%	\$37,001 - \$87,000	32.5%
\$80,001 - \$180,000	37%	\$87,001 - \$180,000	37%
\$180,001 +	45%	\$180,001 +	45%

Table 2: The tax rate applied to different incomes in 2012 compared with 2018

Income	Tax payable		Difference in tax paid	Percentage decrease
	2012	2018		
\$18,000	\$1,800	0	\$1,800	100.00
\$35,000	\$4,350	\$3,192	\$1,158	26.62
\$50,000	\$8,550	\$7,797	753	8.81
\$85,000	\$19,400	\$19,172	228	1.18
\$100,000	\$24,950	\$24,632	318	1.27
\$150,000	\$43,450	\$43,132	318	0.73
\$180,000	\$54,550	\$54,232	318	0.58
\$250,000	\$86,050	\$85,732	318	0.37

Table 3: Summary of 2017-18 expenses – Social welfare payments

Type of Assistance	2016-17 \$m	2017-18 \$m
Assistance to the aged	62,270	64,729
Assistance to veterans and dependents	6,475	6,272
Assistance to people with disabilities	31,721	38,538
Assistance to families with children	36,404	36,936
Assistance to the unemployed and the sick	10,994	10,038
Other welfare programs	1,745	1,737
Assistance to Indigenous Australians	2,210	2,153
General administration	3,879	4,105
<b>Total social security and welfare</b>	<b>155,698</b>	<b>164,059</b>

Source: Commonwealth of Australia (2017) Budget 2017-18, Budget Paper No 1, Statement 6, Expenses and Net Capital Investment, 6-24.

Table 4: Gross weekly household income by quintile (2015-16)

	QUINTILE					
	Lowest	Second	Third	Fourth	Highest	Average
Private income	258	746	1,539	2,491	5,213	2,046
Social welfare payments	338	355	202	111	66	215
Gross income	596	1,101	1,741	2,603	5,281	2,261
Taxes on income	3	51	206	443	1,275	395
Disposable income	593	1,050	1,536	2,160	3,984	1,863

Source: Australian Bureau of Statistics, 6523.0 - Household Income and Wealth, Australia, 2015-16

To analyse the way that income is shared across households in Australia, households are ranked from lowest to highest income or wealth and then divided into five equal groups with 20% of the population in each group (quintiles).

## ANALYSE DATA TO DRAW CONCLUSIONS

1. Discuss the main forms of government policies used to reduce inequality in the distribution of income. Refer to Tables 1, 2, 3 and 4 in your answer.
2. Explain how changes to the progressive tax rates since 2011 have impacted on income inequality in Australia. Use statistics to justify your response.
3. Using the data in Table 4 to construct a graph showing the following for each quintile:
  - a. Private income
  - b. Social welfare payments
  - c. Taxes on income
  - d. Disposable income
4. Annotate your graph to show the impact of social welfare payments and taxation on income equality.

## TEST CLAIMS

On 27 July, 2015, the then Federal Treasurer Joe Hockey claimed in an interview with Fran Kelly on ABC RN Breakfast that:

*"50% of all income tax in Australia is paid by 10% of the working population".*

5. Given what you have learnt about the progressive tax system in Australia and the statistics in Table 4, do you believe this assertion is correct? Use statistics to justify your decision, for example, calculate the total percentage of tax paid by the highest income quintile as a preliminary measure.
6. Table 5 below show the amount of tax paid by each decile in 2014-15. Calculate the percentage of total income tax revenue paid by each decile. Was Joe Hockey's assertion correct? Discuss how statistics can be used to test assertions in the media.

**Table 5: Share of tax paid in 2014-15 (Working age population)**

Decile (lowest to top 10%)	Income tax paid (\$m)	Percentage of income tax paid by decile
1	8.7	
2	49.9	
3	137.8	
4	547.1	
5	3863.3	
6	8553.4	
7	14846.9	
8	22964.8	
9	34656.9	
10	92623.8	
<b>Total</b>		

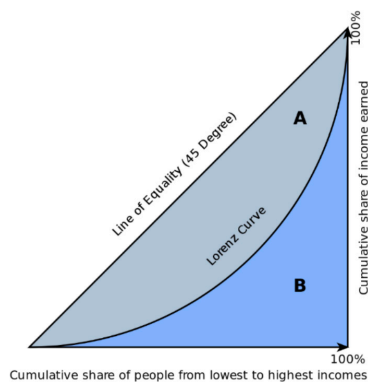
Source: *The Conversation*, May 28, 2015 (Based on NATSEM data), Australian Taxation Office <https://annualreport.ato.gov.au/02-performance-reporting/operational-performance/revenue-collection>

## PART 2: Measures of and trends in the distribution of income

The distribution of income and wealth of a nation can be represented using a Lorenz curve. The Lorenz curve plots the cumulative percentage of total income received (vertical axis) against the cumulative percentage of income recipients (horizontal axis).

The Lorenz Curve can then be contrasted with the line of perfect equality to show the scale of income inequality in a country. The line of equality is the diagonal line through the origin of the graph (See Figure 1). The further the graph is away from the line, the greater degree of income or wealth inequality in a population.

Figure 1: Lorenz Curve



The Gini coefficient is the internationally accepted summary measure of inequality. It is calculated as the ratio of area between the actual Lorenz curve and the line of equality. Gini coefficient values range between 0 and 1. Values closer to 0 represent higher equality and values closer to 1 represent higher inequality.

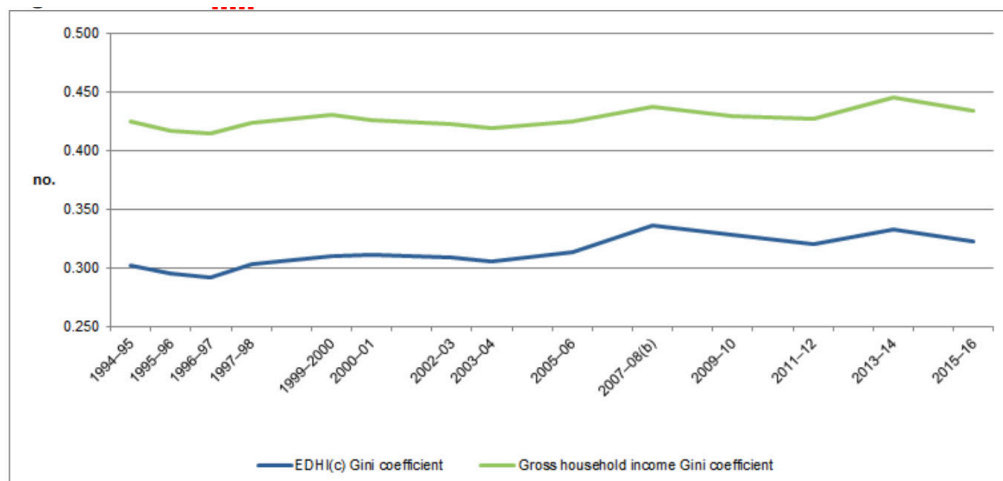
### Data

Table 6: Income share of Australian households 2015-16

Income shares	
Lowest quintile	7.7
Second quintile	12.5
Third quintile	17.0
Fourth quintile	23.0
Highest quintile	39.8
<b>All households</b>	<b>100.0</b>

Source: Australian Bureau of Statistics, 6523.0 - Household Income and Wealth, Australia, 2015-16

Figure 2: Income Gini coefficient 1994-95 to 2015-16



Source: ABS: 6523.0 - Household Income and Wealth, Australia, 2015-16 CONSTRUCT AND INTERPRET DATA

## CONSTRUCT AND INTERPRET DATA

7. Use the data in Table 6 to draw and fully label a Lorenz curve that shows the following (on graph paper or using Excel and your computer):
  - ▶ fully labelled axes
  - ▶ the line of absolute equality in income
  - ▶ the Lorenz curve for Australia
 (Note: Use the cumulative quintile data for drawing this curve)
8. Using statistics from Table 6 and your Lorenz curve for different quintiles, describe the patterns of Australia's distribution of disposable income.
9. Use Figure 2 to describe the trend in income inequality in Australia. The top line in Figure 2 shows the Gini coefficient for gross household income (income before tax) and the bottom line shows the net household income (income after tax).
10. Explain the impact of Australia's system of income tax on reducing income inequality.

### PART 3: Trade offs

The goal of income equality versus efficiency in resource allocation

Some argue that government policies designed to reduce income inequality involve a trade-off with economic efficiency. For example, the transfer system of progressive tax and social welfare payments can reduce:

- ▶ incentives to work hard
- ▶ financial independence
- ▶ saving to finance investment
- ▶ levels of education and skills

However, others argue that government policies such as the provision of free education and health can increase the efficiency or productivity of the labour force.

## THINK-PAIR-SHARE

11. Discuss the potential trade-off between the equity in the distribution of income and efficiency in the allocation of resources.
12. Propose budgetary policies to improve equity in the distribution on income.
13. Predict the likely impact of these policies on efficiency in the allocation of resources. Examples might include:
  - ▶ The provision of free or subsidised merit goods
  - ▶ Using an expansionary stance to reduce unemployment
  - ▶ Increasing the top marginal rate of tax to 50%
  - ▶ Indexing social welfare payments to wages growth
  - ▶ Providing child care subsidies to tax payers on less than \$80,000.

## EXTENDED RESPONSE

Use the following scaffold to discuss how government budgetary policies (particularly taxation and social welfare payments) have affected the distribution of income in Australia. Evaluate the effectiveness of these policies in improving equity in the distribution of income. Explain the potential trade-offs associated with these policies. In your answer:

- ▶ use your knowledge and the economic information provided in this worksheet
- ▶ apply economic terms, concepts and relationships
- ▶ present a sustained, logical and well-structured answer to the question

# YOUR TASK

Discuss how government budgetary policies (particularly taxation and social welfare payments) have affected the distribution of income in Australia. Evaluate the effectiveness of these policies in improving equity in the distribution of income. Explain the potential trade-offs associated with these policies.

01

Define the distribution of income, how it is measured and why it is important.

04

Explain trade-offs associated with these policies.

02

Outline government policies used to address income inequality (provide examples of policies that have been implemented)

03

Evaluate the success of government policies by reviewing current data and assessing trends in the distribution of income

**Discuss** = Identify issues and provide points for and/or against

**Explain** = Relate cause and effect

**Evaluate** = Make a judgement based on criteria