ECON1002: Introductory Macroeconomics

Lecture 5: Fiscal Policy

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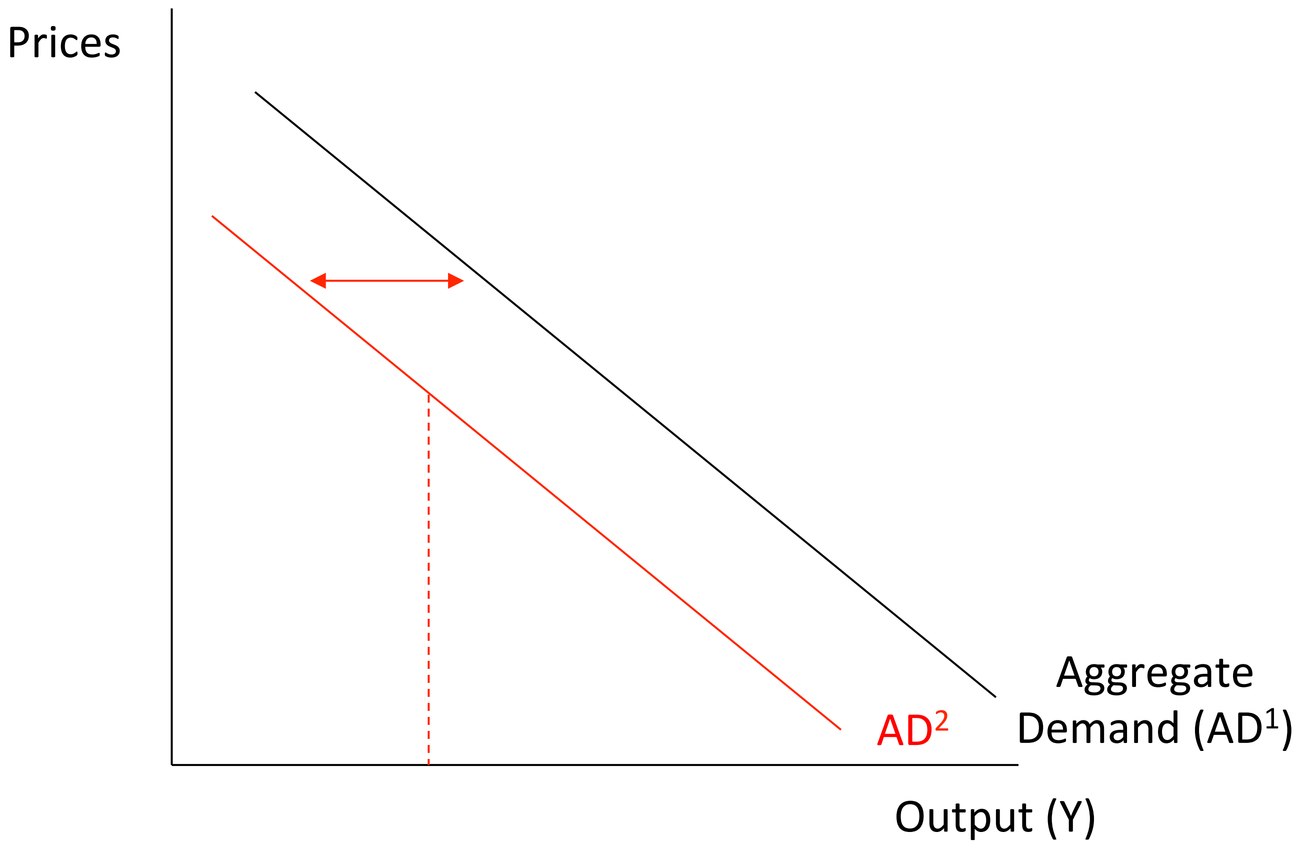
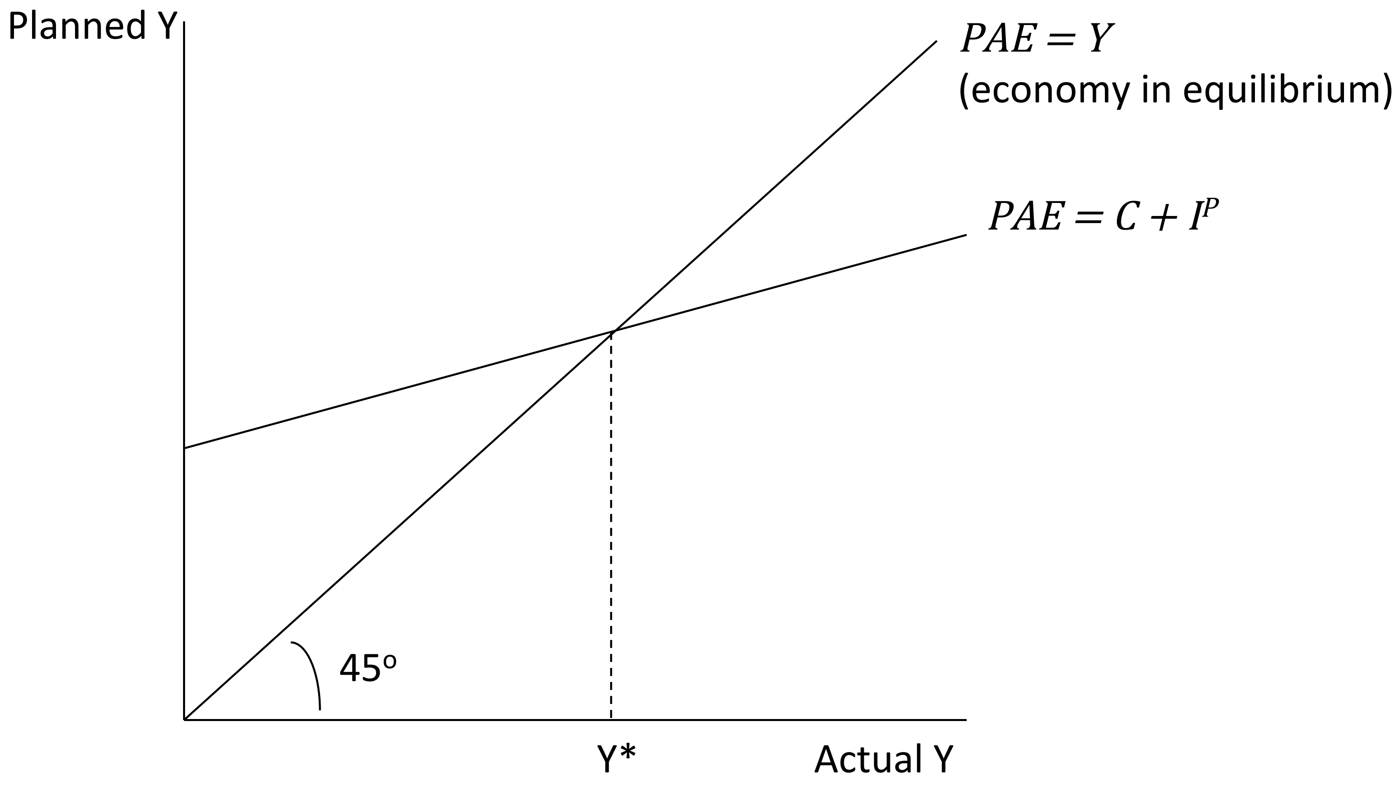
Based on slides by Wills, Melatos and Bernanke, Olekalns and Frank

Putting everything in context

Last lecture we spoke about factors that cause aggregate demand to change…

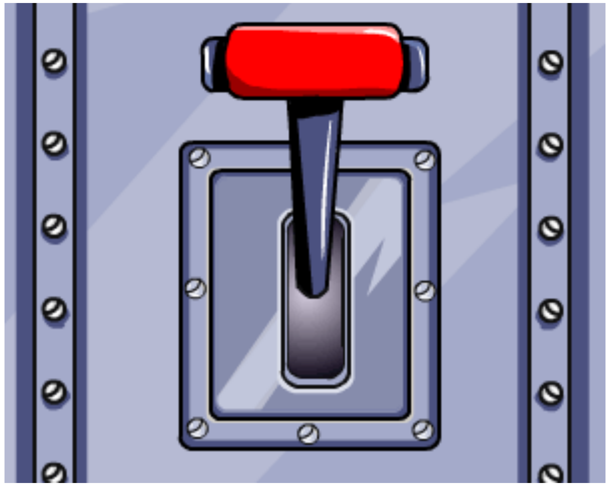


…We did this using the "Keynesian Cross", which describes the equilibrium between "planned" and "actual" expenditure in the economy



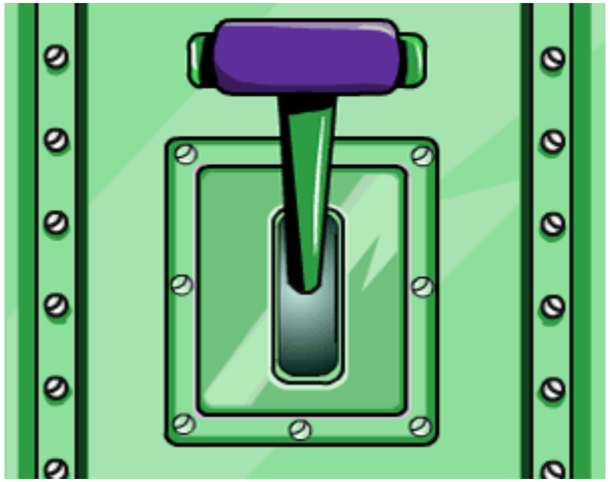
There are two main levers of policy that can be used to influence planned aggregate demand

There are two main “levers” of economic policy in the economy:



Fiscal Policy:

- ***Engineer:*** the government
- ***Lever:*** taxes and spending
- ***Objective:*** full employment
- ***Considerations:*** Balanced budget over the business cycle
- ***Channel:*** Aggregate government demand (G)
- ***Reaction speed:*** slow

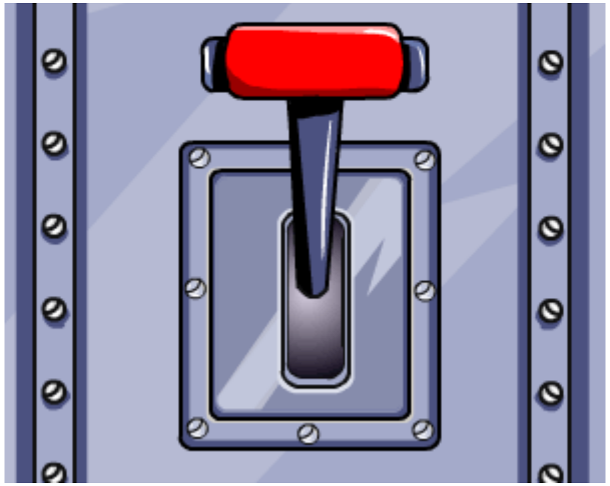


Monetary Policy:

- ***Engineer:*** the central bank (RBA)
- ***Lever:*** nominal interest rates
- ***Objective:*** Stabilize inflation (neutralize sticky prices)
- ***Considerations:*** Asset price bubbles
- ***Channel:*** Aggregate private demand (C, I, NX)
- ***Reaction speed:*** fast

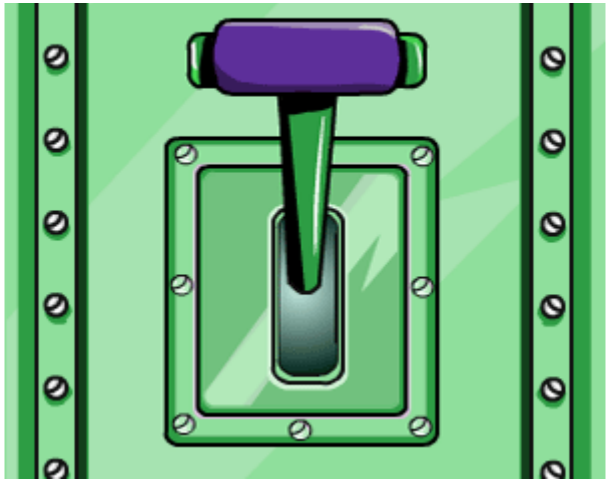
First we will cover fiscal policy (quickly, Ch 6).

There are two main "levers" of economic policy in the economy:



Fiscal Policy:

- **This lecture**
  - BOF Chapter 6



Monetary Policy:

- **What is money?**
  - BOF Chapter 7
  - **McLeay et al. (2012a)
  - **McLeay et al. (2012b)
- **How does the Reserve Bank conduct monetary policy?**
  - BOF Chapter 8

Chapter 6

Fiscal Policy

Learning Objectives

6.1 By what means can fiscal policy be used to eliminate an output gap?

6.2 Why is there a difference between macroeconomic effects of changes to government expenditure and changes to taxes and transfer payments?

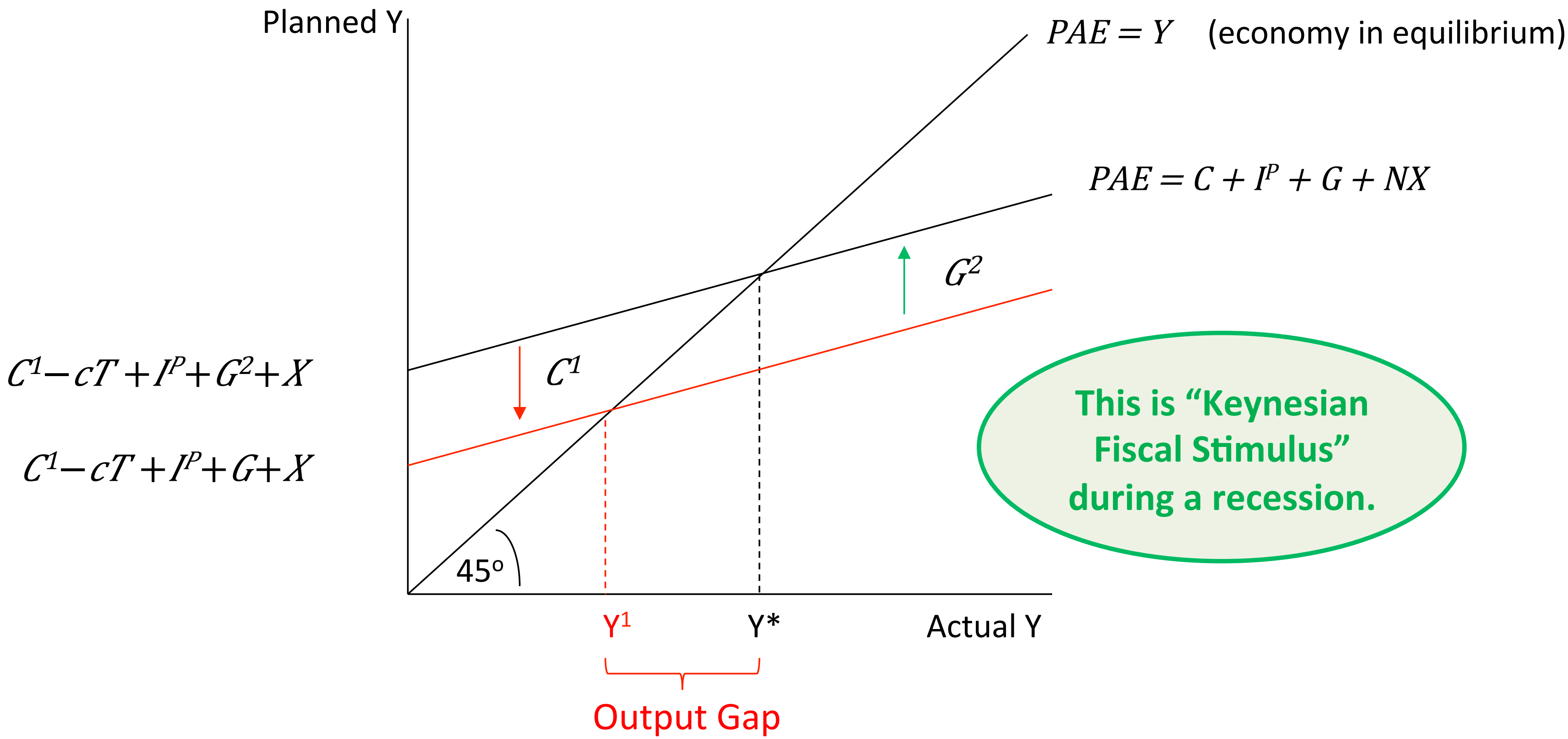
6.3 What are the three limitations on the ability of fiscal policy to stabilise the economy?

6.4 How does fiscal policy impact on the distribution of income?

6.5 What effect will demographic change have on fiscal policy?

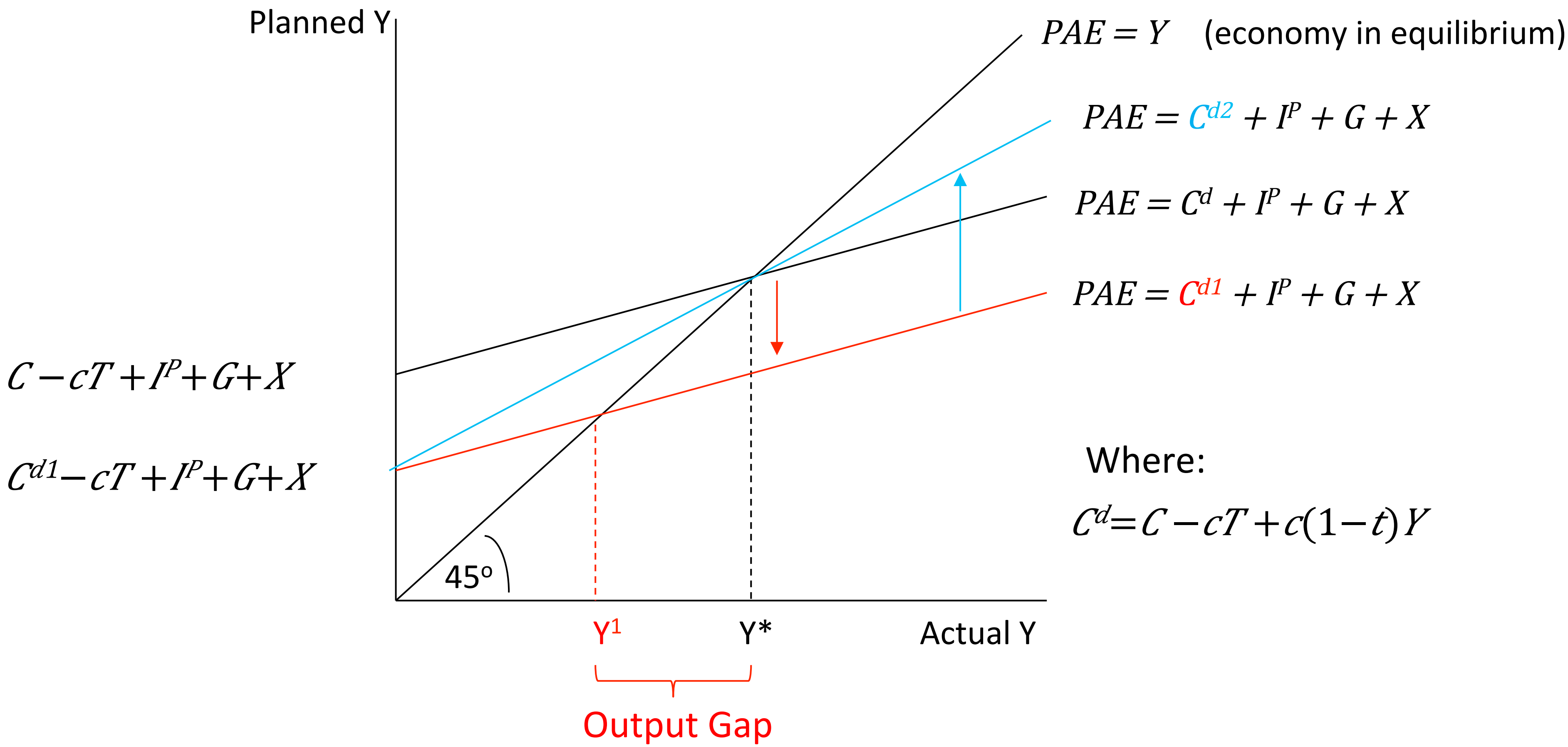
6.6 How is fiscal policy related to the level of public debt?

If there is a collapse in private demand, which causes a contraction, government can spend more to fill the gap in demand



Note, government spending has a multiplier effect on total output, $(Y^* - Y^1) > G^2$

Alternatively, the government can cut taxes (or increase transfers) to stimulate planned aggregate demand



Where:

$$C^d = C - cT + c(1-t)Y$$

Government purchases and planned spending

- Intuition:
  - As government purchases of goods and services is a component of planned aggregate expenditure (PAE), deficiencies in PAE can be compensated for with changes in government spending.

- Government expenditure is exogenous, therefore changes in G will shift the PAE line.
  - Contractionary gaps: an increase in G will shift PAE up and increase the level of actual output.
  - Expansionary gaps: a decrease in G will shift PAE down and decrease the level of actual output.

Fiscal policy

- Two main components of fiscal policy are:
  - government purchases
  - taxes and transfer payments.

- Fiscal policy is designed and implemented by the government to achieve a pre-determined level of output in the economy.

- The Keynesian model is a simple analytical framework that shows how changes in fiscal policy can alter output in the economy.

Australia's experience in the global financial crisis

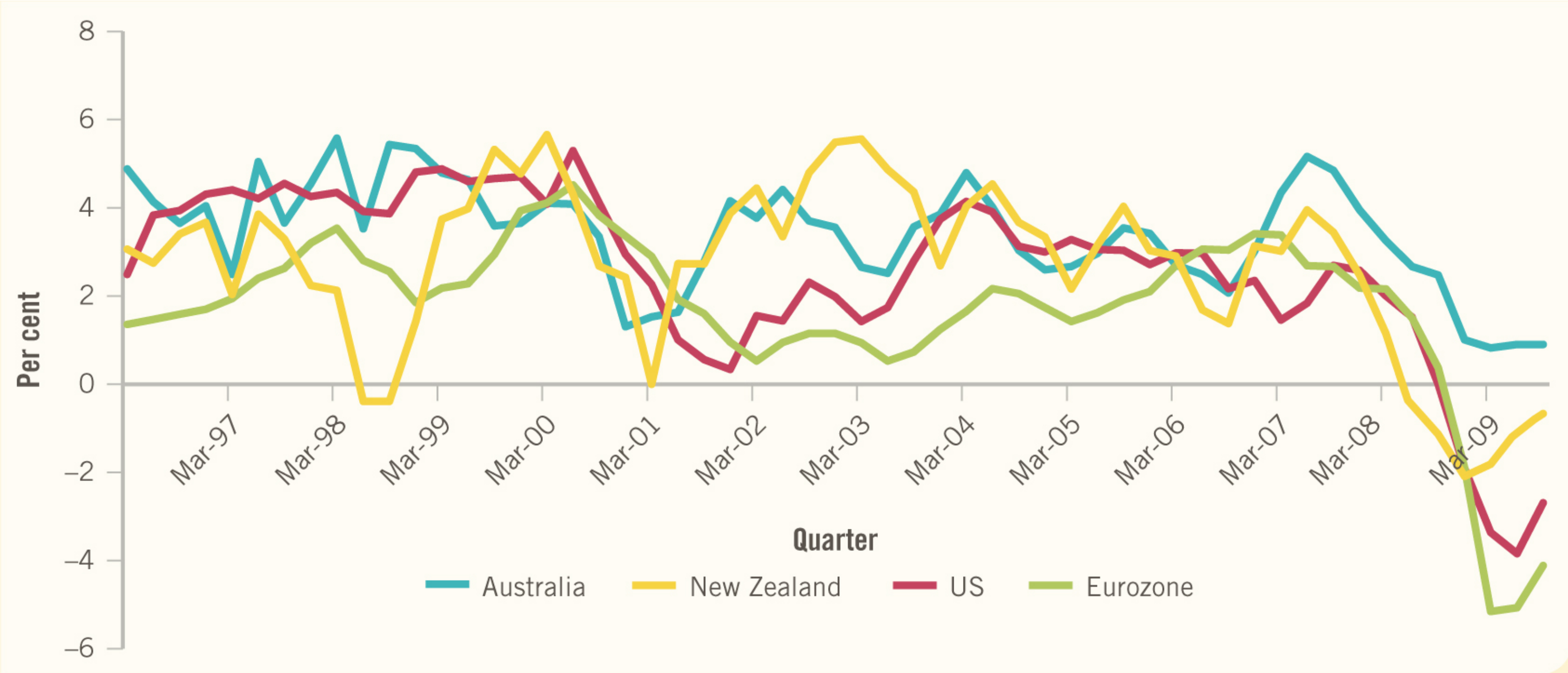
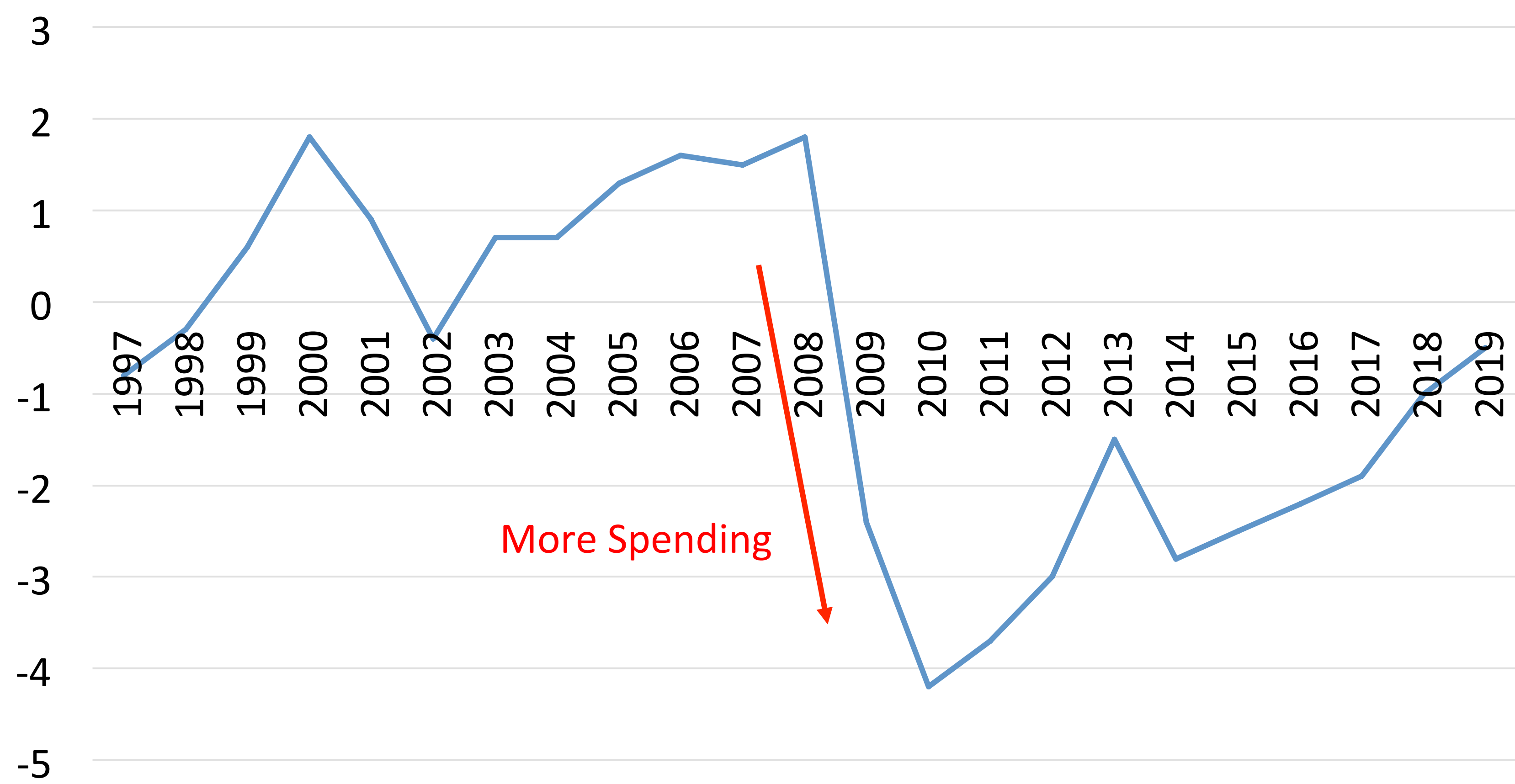


Figure 6.2 **Real GDP growth** The global financial crisis led to negative growth in most countries in the world. Australia was an exception. While the growth rate of GDP slowed, the global financial crisis did not lead to negative growth in Australia.

The Australian Government did both in 2009 during the global financial crisis

Fiscal Balance (Taxes – Spending), % of GDP



Source: www.budget.gov.au

What explained Australia’s good fortune?

- Some possible reasons for Australia’s good fortune in the GFC
  - A stable housing market
  - A robust financial system
  - Strong export performance to China and India
  - Aggressive coordinated fiscal and monetary policy response.

We are now approaching the 10 year anniversary of the global financial crisis, as described in a newspaper article last week

The Sydney Morning Herald | Business

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Lessons still to learn as 10-year anniversary of GFC approaches

Jessica Irvine

Source: http://www.smh.com.au/business/markets/lessons-still-to-learn-as-10year-anniversary-of-gfc-approaches-20170113-gtqttq.html

Taxes, transfers and aggregate spending

- Fiscal policy can also take the form of changes to the level and types of taxes and transfer payments in the economy.
  - These payments are not for the purchases of current goods and services, and are not part of G. Therefore, these changes do not affect PAE directly.

- Taxes and transfer payments affect the level of disposable income, (Y – T), received by the private sector.

- Effects of changes to taxes and transfers on planned aggregate expenditure:
  - Tax cuts and increases in transfer payments increase disposable income and raise planned aggregate expenditure.
  - Tax increases and decreases in transfer payments decrease disposable income and reduce planned aggregate expenditure.

A cut in the tax rate can eliminate a contractionary gap

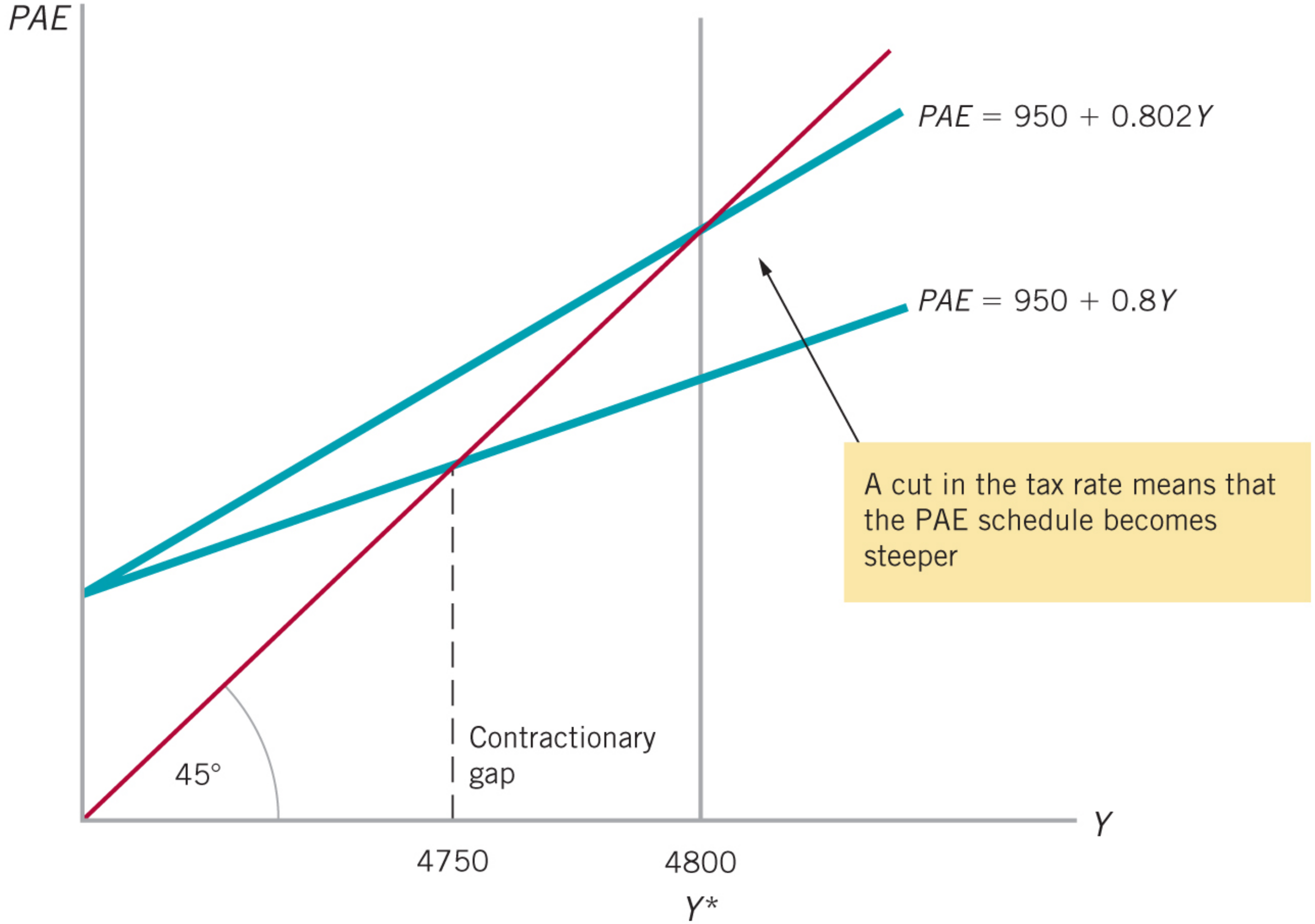


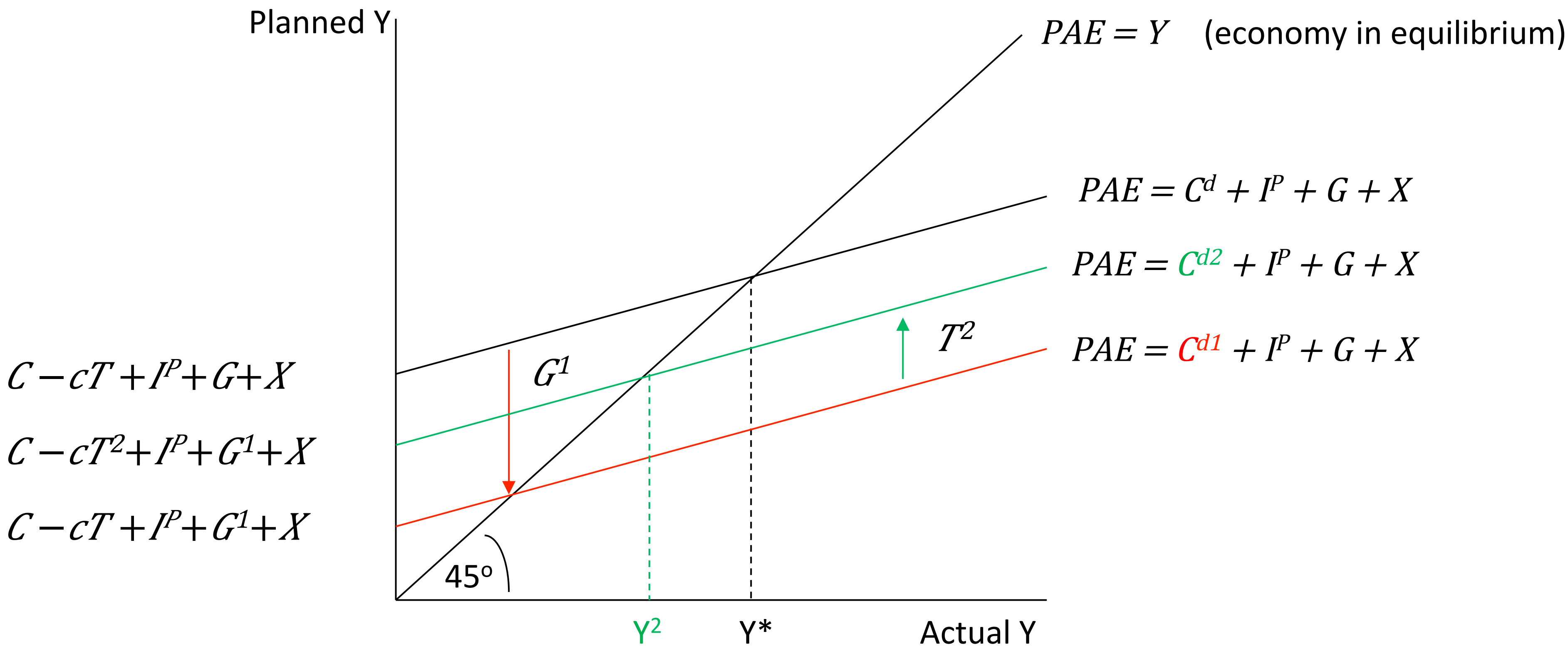
Figure 6.6 **A cut in the tax rate can eliminate a contractionary gap** A change in the tax rate affects the slope of the planned aggregate expenditure line, leading to a different equilibrium level of GDP.

Balanced budget multiplier

- Balanced budget multiplier refers to short-run effect of equilibrium GDP of an equal change in government expenditure and net taxes.

- Will output remain unchanged in the case of a balanced budget multiplier?
  - The exogenous increase in payments to households will be spent according to their marginal propensity to consume, c.

The level of government spending can affect aggregate demand, even if the budget remains balanced – the "balanced budget multiplier"



If the government cuts taxes and spending at the same time ("smaller government") aggregate demand will fall, because some of the tax cut will be saved.

The effect of the baby bonus on PAE

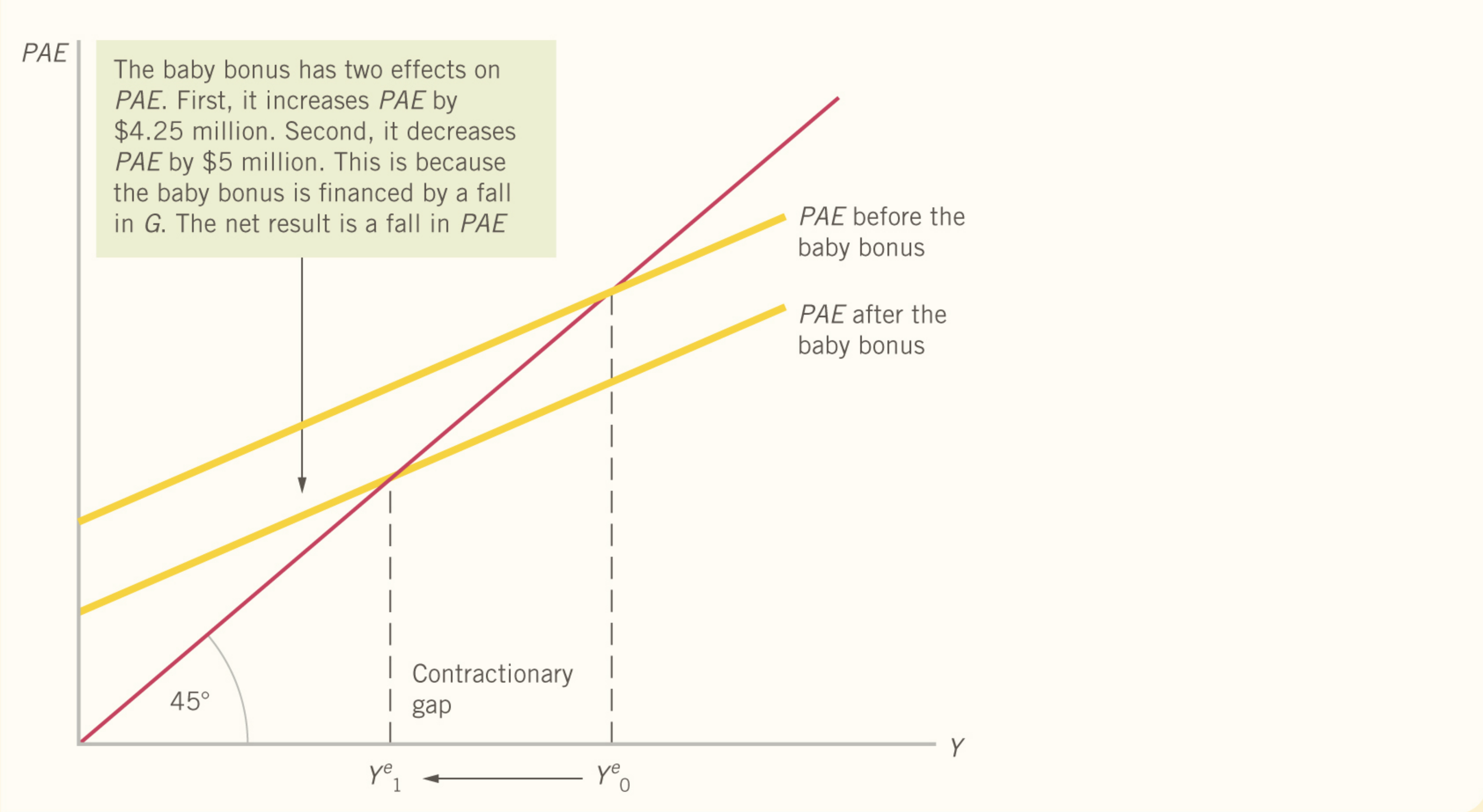


Figure 6.7 **The effect of the baby bonus on *PAE*** A cash benefit like the baby bonus paid for through a reduction in government spending leads to a fall in *PAE* and means the economy will move to a lower level of equilibrium GDP.

Three qualifiers to using fiscal policy as a stabilisation tool

- In reality there are complexities in the real world in using fiscal policy to try to precisely change output, including:
  - fiscal policy and the supply side
  - the problem of deficits
  - the fact that fiscal policy is relatively inflexible.

Fiscal policy and the supply side

- Fiscal policy affects potential output as well as planned aggregate expenditure.
  - 'Supply-siders' refers to people who support the need for tax cuts to encourage people to work harder, save more and innovate.

- Government spending, G, on public capital such as roads, airports and schools plays a major role in the growth of potential GDP.

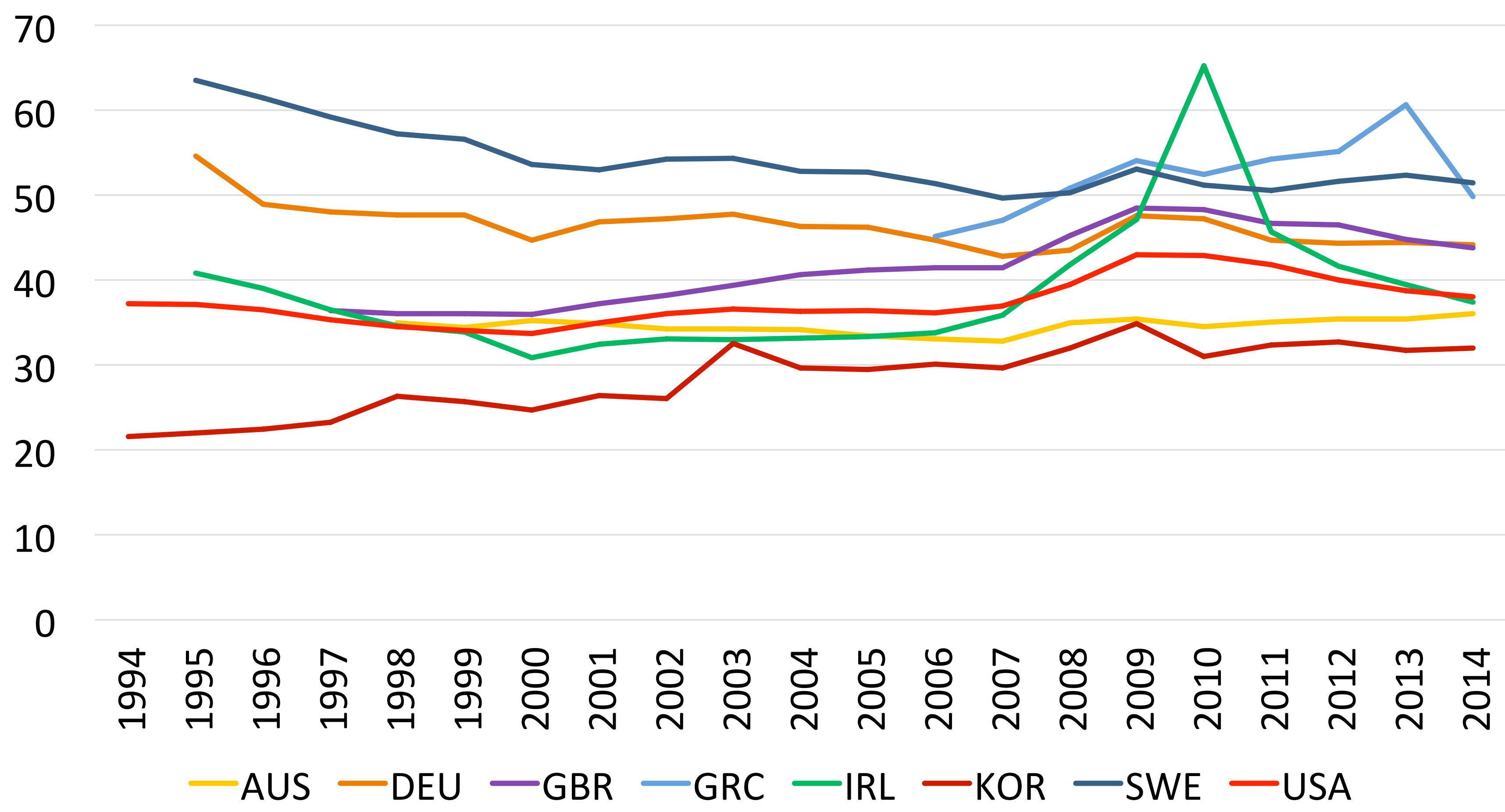
- Taxes and transfer payments play a role in affecting incentives and therefore economic behaviour.

The problem of deficits

- Expansionary fiscal policy leads to deficits.
- It has been suggested that governments need to avoid large and persistent deficits.
  - Deficits reduce the level of national saving, which reduces investment in new capital goods, an important source of long-run economic growth.
- This makes increasing spending or cutting taxes a less attractive option.

Australia's government spending as a share of GDP is relatively low compared to other OECD countries

Total general government spending as a share of GDP around the world, %



Source: OECD

Our public debt is also relatively low (but private debt is a different story)

TABLE 6.1 Budget deficits and public debt as a proportion of GDP

		2007	2009	2010	2014
Australia	Deficit	1.3	−4.1	−2.9	−0.2
	Public debt	9.7	16.8	27.2	26.7
US	Deficit	−2.7	−13.3	−8.5	−5.4
	Public debt	66.5	89.1	106.5	109.2
UK	Deficit	−2.9	−11.4	−8.3	−6.4
	Public debt	43.7	68.1	90.3	97.1
Japan	Deficit	−2.1	−10.4	−10.2	−7.0
	Public debt	183.0	210.2	237.9	244.6

Source: International Monetary Fund (2013), *Fiscal Monitor, Fiscal adjustment in an uncertain world*, April, www.imf.org/external/pubs/ft/fm/2013/01/fmindex.htm

Fiscal policy is not just used to address changes in aggregate demand, it also performs important social roles

Short Run

- Stabilize movements in aggregate demand
  - Tax and spending policy (slow)
  - Automatic stabilizers during recessions (fast)
    - Automatically lower taxes due to lower income
    - Automatically higher spending due to unemployment

Long Run

- Correct externalities (e.g. carbon tax)
- Reduce inequality
  - Progressively tax rich (tax rich people more)
  - Redistribute to poor
- Provide a social safety net
- Provide public goods
- Balance budget over business cycle
  - Pensions – impending funding crisis -> Future Fund

In Australia one of the most important ways we redistribute income is through "progressive" income taxes

TABLE 6.2 Income tax rates in Australia, 2013/2014

TAXABLE INCOME	TAX ON THIS INCOME
\$1–\$18 200	Nil
\$18 201–\$37 000	19c for each \$1 over \$6000
\$37 001–\$80 000	\$3572 plus 32.5c for each \$1 over \$37 000
\$80 001–\$180 000	\$17 547 plus 37c for each \$1 over \$80 000
\$180 001 and over	\$54 547 plus 45c for each \$1 over \$180 000

Source: Australian Tax Office, www.ato.gov.au/Rates/Individual-income-tax-rates

What is your income tax liability if you earn \$120 000? What if you earn \$60 000?

While income tax is progressive, it is also "distortionary". The GST is regressive, but efficient

Income Tax	Goods and Services Tax

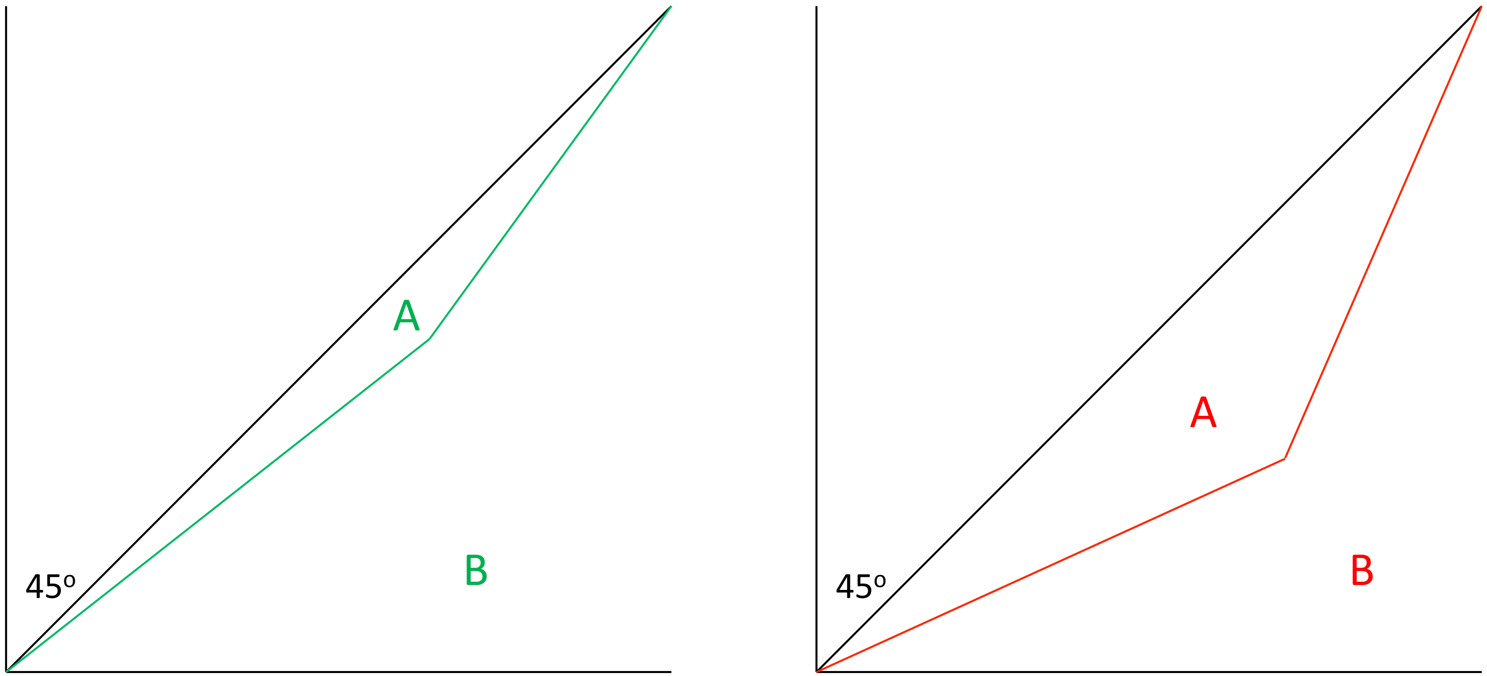
• Progressive:
  • taxes people more when they earn more income
 	
• Distortionary:
  • Reduces the incentive to work harder and earn more money, especially when tax rate changes
	• Regressive:
	  • taxes people based on how much they consume
	  • Poor people consume a higher share of their income than rich people
	
	• Efficient:
	  • If everything taxed equally it doesn't distort production or spending decisions

Redistribution reduces income inequality, which can be illustrated on a Lorenz curve and measured with a Gini coefficient

Lorenz Curves, low and high inequality

Low Inequality | **High Inequality**

Share of total income %



Share of total households % | Share of total households %

$Gini_L = A/(A+B) < Gini_H = A/(A+B)$

The Australian government needs to deal with an aging population, which will cost more while paying less tax

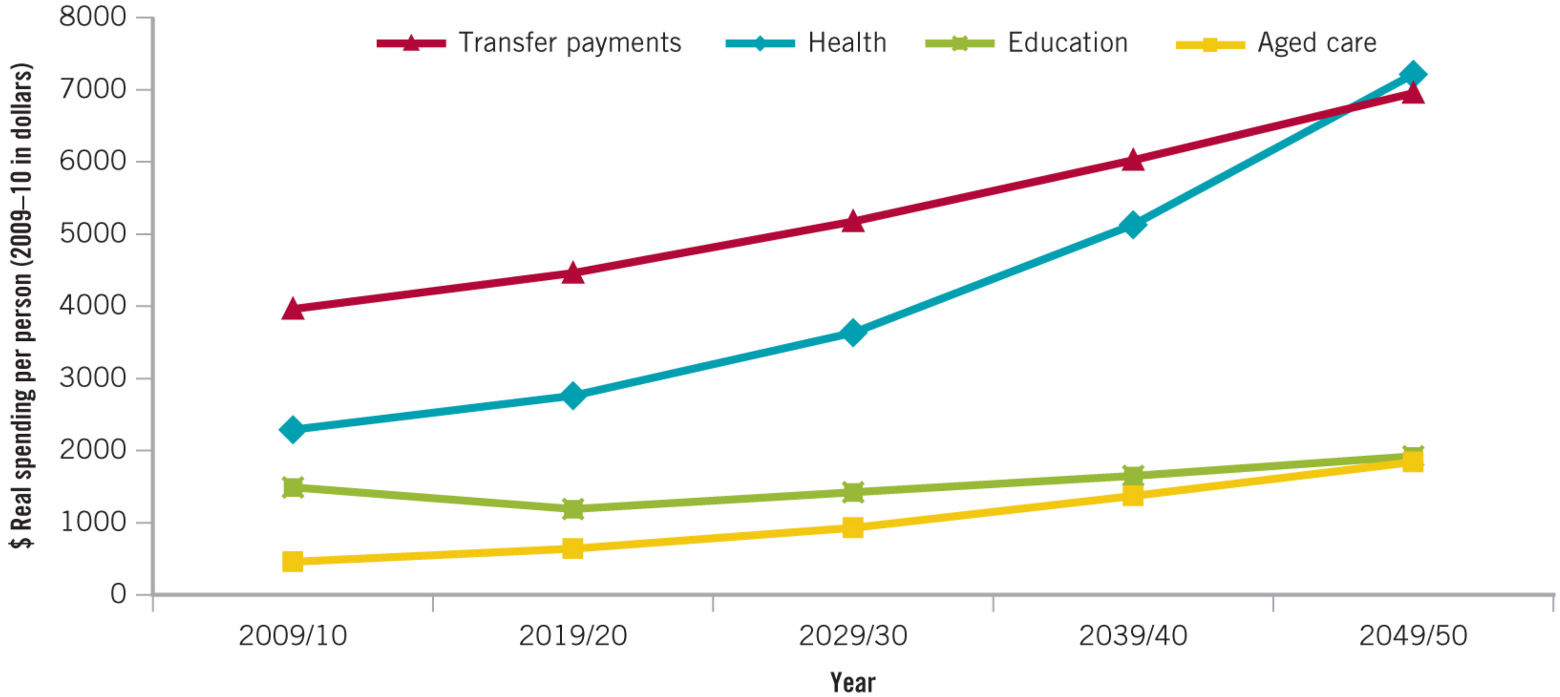


Figure 6.10 **Projections of Australian government spending (real spending per person, 2009–2010 dollars)**
The ageing of the Australian population will have a significant impact on many components of government expenditure.

Source: *Intergenerational Report 2010*, Department of Treasury, http://archive.treasury.gov.au/igr/igr2010

Tax revenue

- Tax revenue is difficult to forecast as it depends on a number of different aspects such as level of expenditure in the economy (which will alter GST payable), the level of business profits (business income tax), the tax rate and the number of taxpayers.

- Despite this, it is assumed that government revenue as a proportion of GDP will stay the same at about 23.5%.

- Projection sees large deficits from about 2025 onwards.

Projected budget balances

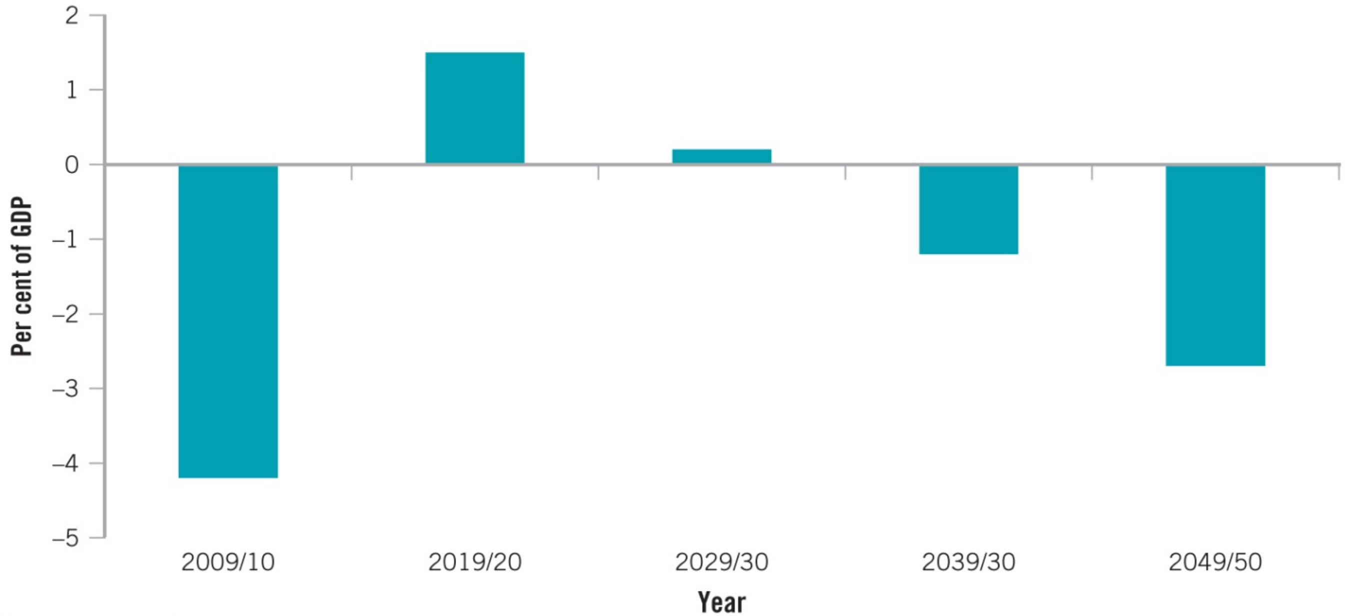


Figure 6.11 **Projected primary budget balances** The ageing population is likely to lead to government budget deficits from 2025 onwards.

Source: *Intergenerational Report 2010*, Department of Treasury, http://archive.treasury.gov.au/igr/igr2010/

- Tax smoothing refers to a theory that the government should run a budget surplus now if it anticipates higher government spending in the future.

Government can finance by raising taxes, borrowing or printing money (seignorage). "Ricardian equivalence" is if they are all the same

Taxes

- Taxes paid by households immediately

Borrowing

- Borrowed from households or foreigners
- Paid by households with higher taxes in the future

Printing Money (seignorage)

- Reduces the value of existing currency through inflation
- Paid by holders of money, or government debt

Ricardian Equivalence

In the simplest case paying for budget deficits with taxes or borrowing is the same: households just anticipate more taxes in the future and prepare for them.

Government budget constraint

- Government budget constraint refers to the concept that government spending has to be financed either by raising taxes or by government borrowing.
  - Government spending comprises government expenditure in a time period, G_t and transfer payments Q_t.
  - Let B_{t-1} be the stock of securities the government has owing at the end of the previous period. Any new borrowing in the period t means that $B_t - B_{t-1} > 0$. This also means there is a third expenditure every period, which is the interest paid on its stock of debt, rB_{t-1}, where r is the real rate of interest.
  - Therefore, the spending that needs to be undertaken in the period by the government which needs to be financed by some method is:

$$G_t + Q_t + rB_{t-1} = T_t + (B_t - B_{t-1})$$

Increasing and decreasing public debt

- We can rearrange this equation with gross taxes on the left-hand side:

$$G_t + Q_t - T_t + rB_{t-1} = (B_t - B_{t-1})$$

  - When the government runs a deficit budget, the left-hand side is positive and we will be adding to the stock of public debt.
  - When the government runs a surplus budget, the left-hand side is negative and the stock of debt will fall.

Benefits of low public debt

- Low levels of public debt are desirable to reduce crowding out, which occurs where government borrowing increases interest rates and therefore decreases investment.

- Borrowing because of deficit budgets can't be sustained forever, and eventually surpluses would be required to reduce debt.
  - Intergenerational equity refers to the concept that the current generation should not impose an unfair burden on future generations.

Benefit of public debt

- Public debt can also have a net benefit for the economy, even when allowing for crowding out and intergenerational equity effects.

- This is when important infrastructure projects are financed through public debt.
  - Such projects have been estimated to add 0.4% p.a. to productivity for every 1% increase in public spending.

Summary

- Fiscal policy involves the government deciding on the level of spending, taxes and transfer payments.

- Fiscal policy is used to:
  - stabilise output gaps in the short run
  - redistribute income
  - handle demographic change
  - manage public debt
- Expansionary fiscal policy
  - Increasing government spending shifts the *PAE* function
  - Decreasing tax rate pivots the *PAE* function

- Criticisms of fiscal policy
  - Overly supply-side driven
  - Mounting public debt
  - Subjected to lengthy political process