

ECO 209Y

MACROECONOMIC THEORY AND POLICY

LECTURE 4:

THE STABILIZING ROLE OF THE GOVERNMENT

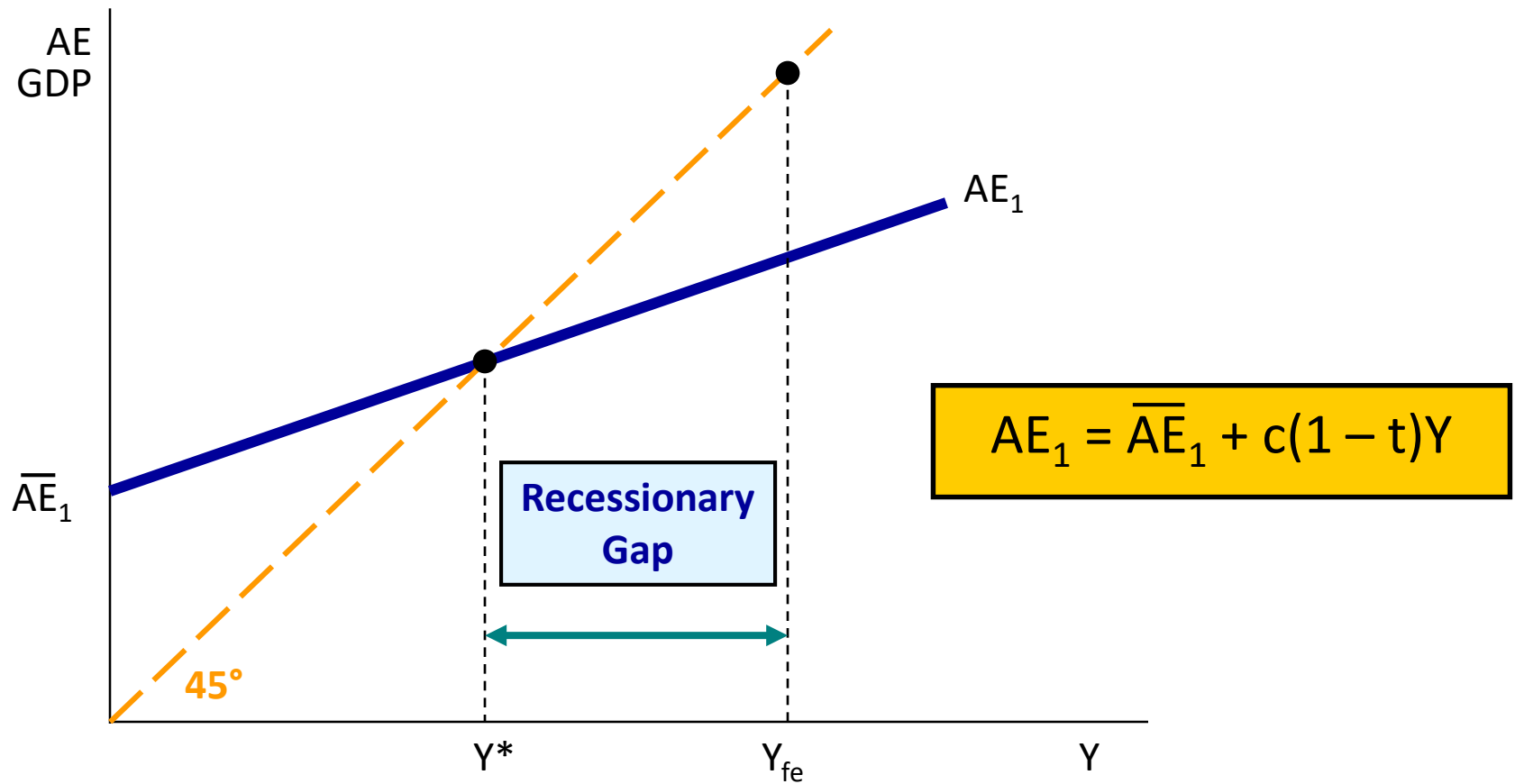
ECONOMIC POLICY

- Policy makers use mainly two types of policies to affect the economy: *fiscal* and *monetary* policies
- The government (Parliament) implements *fiscal policy*, while the Bank of Canada implements *monetary policy*
 - The instruments of *fiscal policy* are changes in taxes and government spending
 - The main instruments of *monetary policy* are changes in either the stock of money or the interest rate
- We will examine now the use of *fiscal policy* under the assumption that the economy is in *recession*

THE USE OF FISCAL POLICY

- Initial *assumptions*:
 - The equilibrium level of income is below the full employment level (i.e., there is a *recessionary gap*)
 - There is no foreign sector ($X = Q = 0$)
- We will examine the effect on Y (equilibrium income) of:
 - 1) An increase in \bar{G} (government expenditure)
 - 2) A decrease in \bar{T} (autonomous taxes)
 - 3) A decrease in t (tax rate)

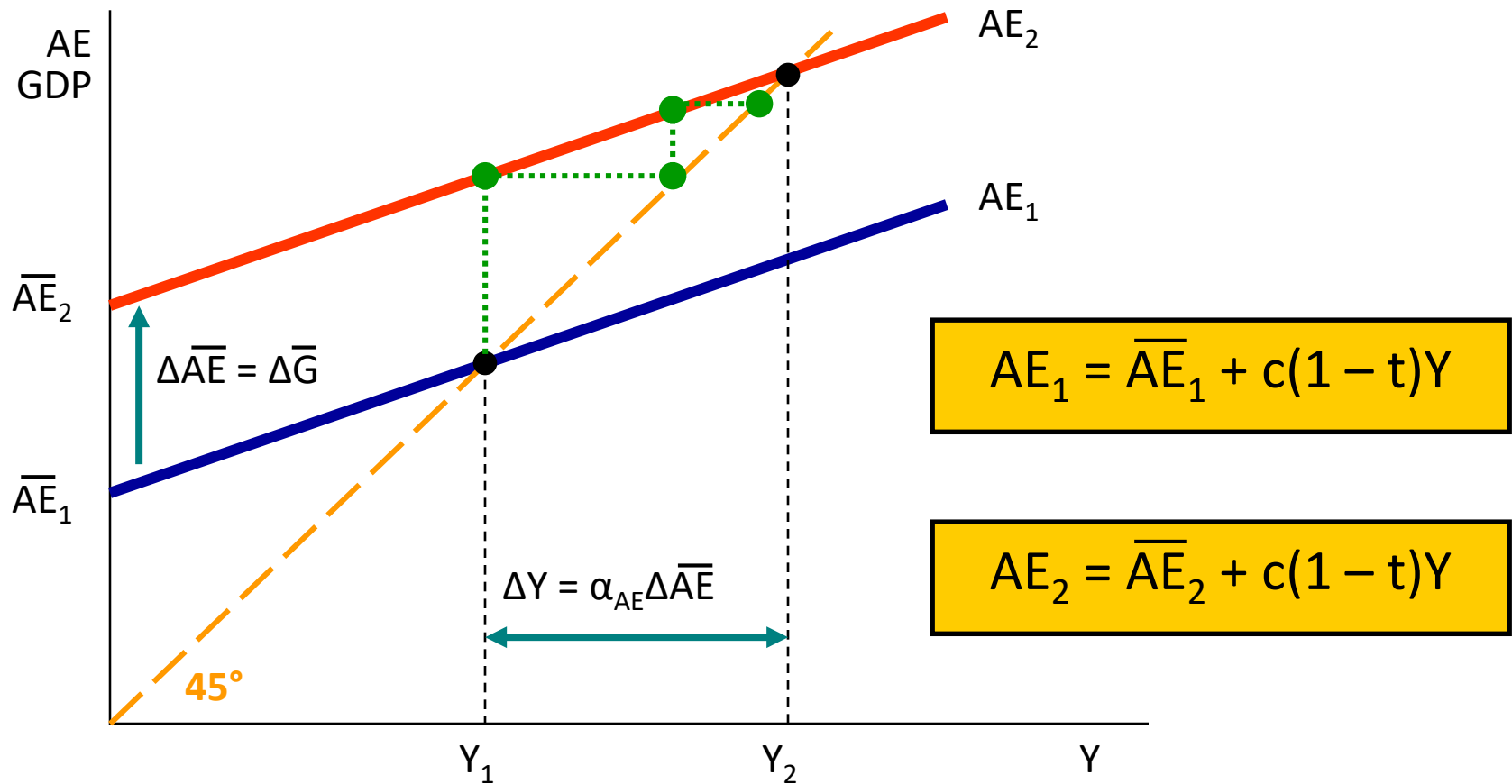
THE INITIAL EQUILIBRIUM



THE EFFECT OF AN INCREASE IN \bar{G}

- Recall that $AE = \bar{AE} + c(1 - t)Y$
 - where $\bar{AE} = \bar{C} + c\bar{T}R - c\bar{T} + \bar{I} + \bar{G}$
- Therefore, a change in \bar{G} will have an impact on \bar{AE} and thus on the position of the AE curve
 - It will not have any effect on the *slope* of the AE curve
 - Therefore, the value of the *multiplier* will not be affected either
- Indeed, $\Delta\bar{AE} = \Delta\bar{G}$
- Therefore, $\Delta Y = \alpha_{AE} \Delta\bar{AE} = \alpha_{AE} \Delta\bar{G}$
- Note that if $\Delta\bar{G} > 0$, then $\Delta\bar{AE} > 0$ and the AE curve shifts up

THE EFFECT OF AN INCREASE IN \bar{G}



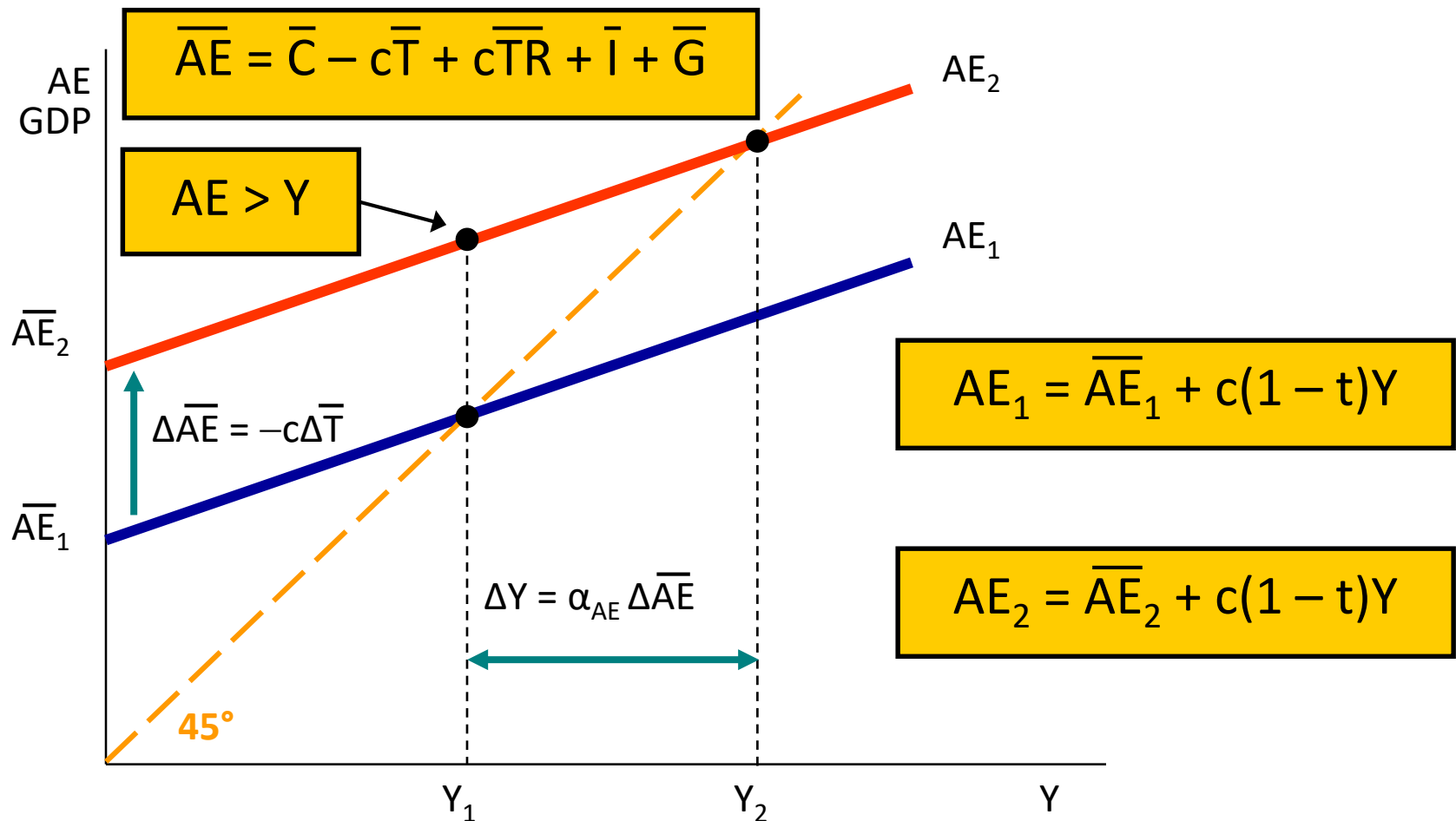
EFFECT OF A CHANGE IN TAXES

- A change in **taxes** (TA) will affect the level of **disposable income** (YD) and thus the level of **consumption** (C)
- In turn, since consumption (C) is one component of **aggregate expenditure** (AE), the change in taxes will have an impact on the level of **equilibrium income** (Y^*)
- Let's consider two cases:
 - The impact of a change in **autonomous net taxes** (\bar{T}), i.e., autonomous taxes minus autonomous subsidies
 - The impact of a change in the **tax rate** (t)

THE EFFECT OF A CHANGE IN \bar{T}

- Recall that $AE = \bar{AE} + c(1 - t)Y$
 - where $\bar{AE} = \bar{C} + c\bar{T}R - c\bar{T} + \bar{I} + \bar{G}$
- Therefore, a change in \bar{T} will have an impact on \bar{AE} and thus on the position of the AE curve
 - It will not have any effect on the *slope* of the AE curve
 - Therefore, the value of the *multiplier* will not be affected either
- Indeed, $\Delta\bar{AE} = -c\Delta\bar{T}$ (where $\Delta YD = -\Delta\bar{T}$)
- Therefore, $\Delta Y = \alpha_{AE} \Delta\bar{AE} = -\alpha_{AE} c\Delta\bar{T}$
- Note that if $\Delta\bar{T} < 0$, then $\Delta\bar{AE} > 0$ and the AE curve shifts up

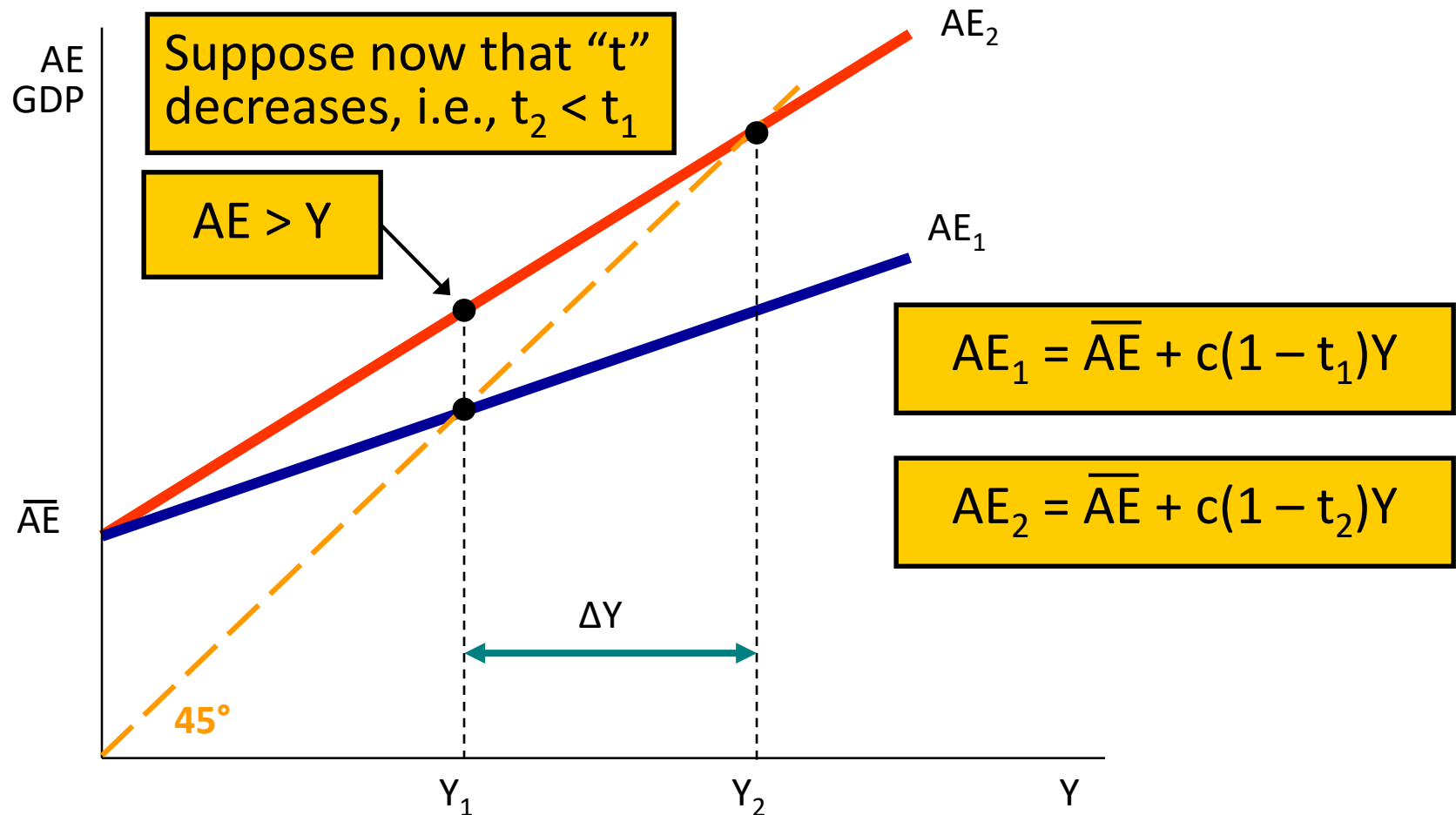
THE EFFECT OF A DECREASE IN \bar{T}



THE EFFECT OF A CHANGE IN “t”

- Recall that $AE = \bar{AE} + c(1 - t)Y$
- Therefore, a change in t will have an impact on the *slope* of the AE curve
 - Therefore, the value of the *multiplier* will be affected
 - It will not have, however, any effect on the vertical *intercept* of the AE curve
- Note that if $\Delta t < 0$, then AE curve becomes *steeper*

THE EFFECT OF A DECREASE IN “t”



SOME MACROECONOMIC MYTHS

- **Myth #1:** Taxes are a burden
- **Myth #2:** Budget deficits are bad
- **Myth #3:** Canadians are over-taxed
- **Myth #4:** Public sector is less efficient than private sector
- **Myth #5:** Canada spends too much on social services
- **Myth #6:** Countries with large governments are less competitive
- **Myth #7:** Countries with large governments are more corrupt
- **Myth #8:** People of large government countries are less happy

MYTH #1 – TAXES ARE A BURDEN

- What are **taxes**?
 - Taxes are the **price** we must pay for the services we, as society, expect to receive from the government
- Do you consider the **price** of a book you purchased to be a **burden**?
- Even when they don't cost us an out-of-pocket expense, government services are not **free**
 - There is a **cost** involved and this cost is paid with our **taxes**

MYTH #2 – DEFICITS ARE BAD

- What is a *deficit*?
- What is the cause of the *deficit*?
 - Too much *spending*?
 - Not enough *revenues*?
- Are *deficits* always '*bad*'? Are *surpluses* always '*good*'?
- *Cyclical* deficits (surpluses) versus *structural* deficits (surpluses)

THE GOVERNMENT BUDGET

- The ***budget surplus (BS)*** is defined as the difference between ***government revenues*** (taxes, **TA**) and the ***government total expenditures*** (expenditure on goods and services, **G**, plus transfer payments, **TR**)
 - $BS = TA - (G + TR)$
- The ***budget deficit (BD)*** is defined as the difference between ***government total expenditures*** and ***government revenues***
 - $BD = (G + TR) - TA$
- Note that the ***budget deficit*** is the ***negative*** of the ***budget surplus*** → $BD = -BS$

BUDGET SURPLUS FUNCTION

- Suppose that:

$$TA = \bar{T} + tY$$

$$G = \bar{G}$$

$$TR = \bar{TR}$$

- Therefore,

$$BS = TA - G - TR$$

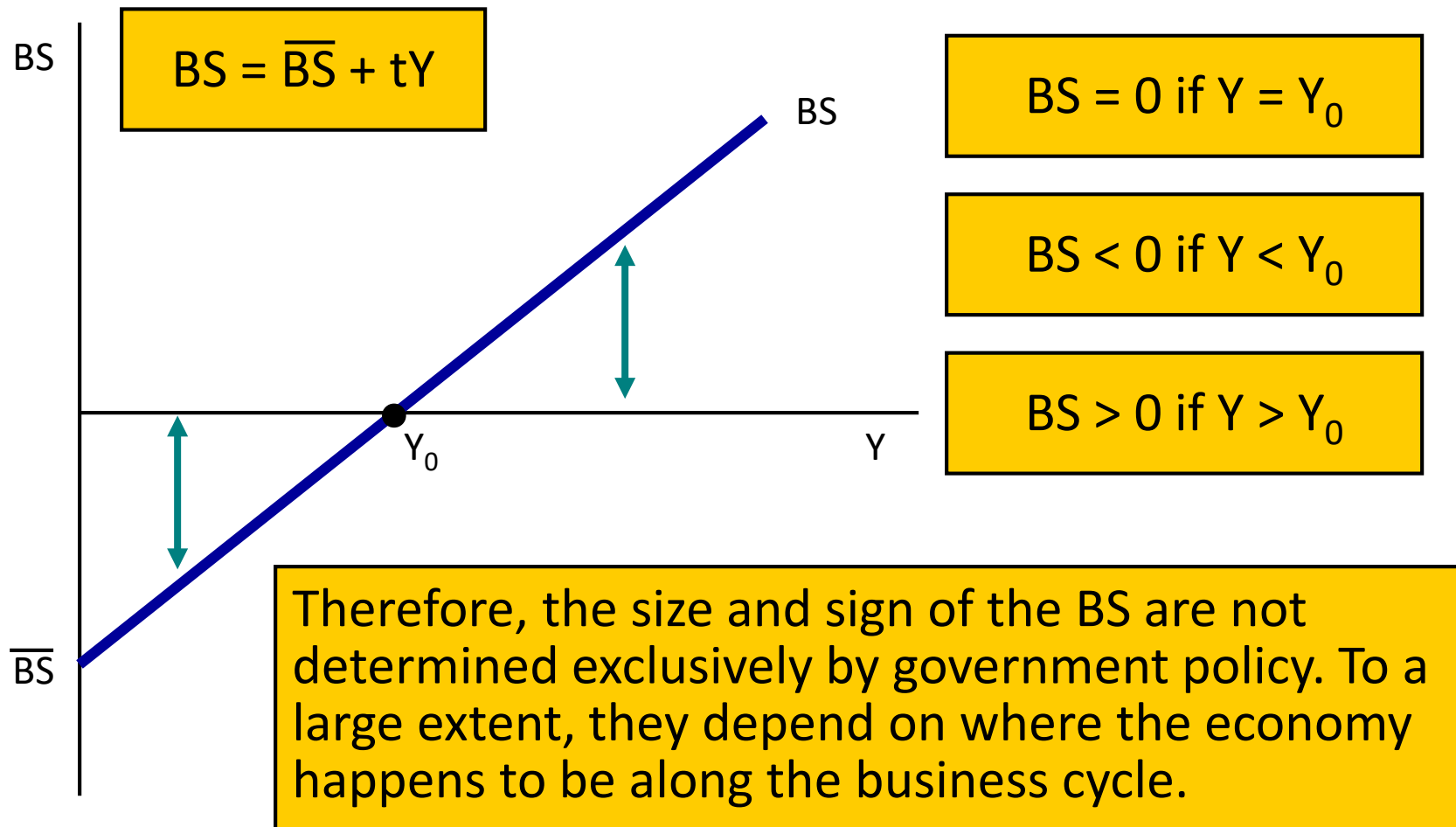
$$= \bar{T} + tY - \bar{G} - \bar{TR}$$

$$= (\bar{T} - \bar{G} - \bar{TR}) + tY$$

$$= \bar{BS} + tY$$

$$\bar{BS} = \bar{T} - \bar{G} - \bar{TR} < 0$$

BUDGET SURPLUS FUNCTION



AN INCREASE IN \bar{G} AND THE BS

- Does an increase in \bar{G} cause **BS** to decrease?
- Even if **BS** were to decrease, the decrease would *not* be equal to the increase in \bar{G}
- Since $\Delta\bar{G}$ causes **Y** to increase, *revenues* (**TA**) also increase when **Y** rises and thus the **BS** decreases by less than $\Delta\bar{G}$
- Indeed, the $\Delta\bar{G}$ causes **Y** to increase by $\Delta\bar{G}$ times the multiplier: $\Delta Y = \alpha_{AE} \Delta\bar{G}$
- Therefore, taxes increase by the ΔY times the tax rate (**t**):
$$\Delta TA = t \Delta Y = t \alpha_{AE} \Delta\bar{G}$$

AN INCREASE IN G AND THE BS

$$\begin{aligned}\Delta BS &= \Delta TA - \Delta G \\ &= t \alpha_{AE} \Delta \bar{G} - \Delta \bar{G} \\ &= (t \alpha_{AE} - 1) \Delta \bar{G} \\ &= \left[\frac{t}{1 - c(1 - t)} - 1 \right] \Delta \bar{G} \\ &= \frac{t - [1 - c(1 - t)]}{1 - c(1 - t)} \Delta \bar{G} \\ &= \frac{t - 1 + c - ct}{1 - c(1 - t)} \Delta \bar{G} \\ &= - \frac{(1 - c)(1 - t)}{1 - c(1 - t)} \Delta \bar{G} < 0\end{aligned}$$

$$\alpha_{AE} = \frac{1}{1 - c(1 - t)}$$

THE FULL-EMPLOYMENT BUDGET SURPLUS

- Depending on the level of **Y**, we could have a positive or negative budget surplus independently of the level of **G**
 - Therefore, there is nothing intrinsically *right* or *wrong* with a positive or negative budget surplus per se
- To conclude that a positive or negative budget surplus is not desirable we must first estimate what the *full-employment budget surplus* would be
 - The *full-employment budget surplus* measures the surplus at the *full employment* level of income (Y_{fe})

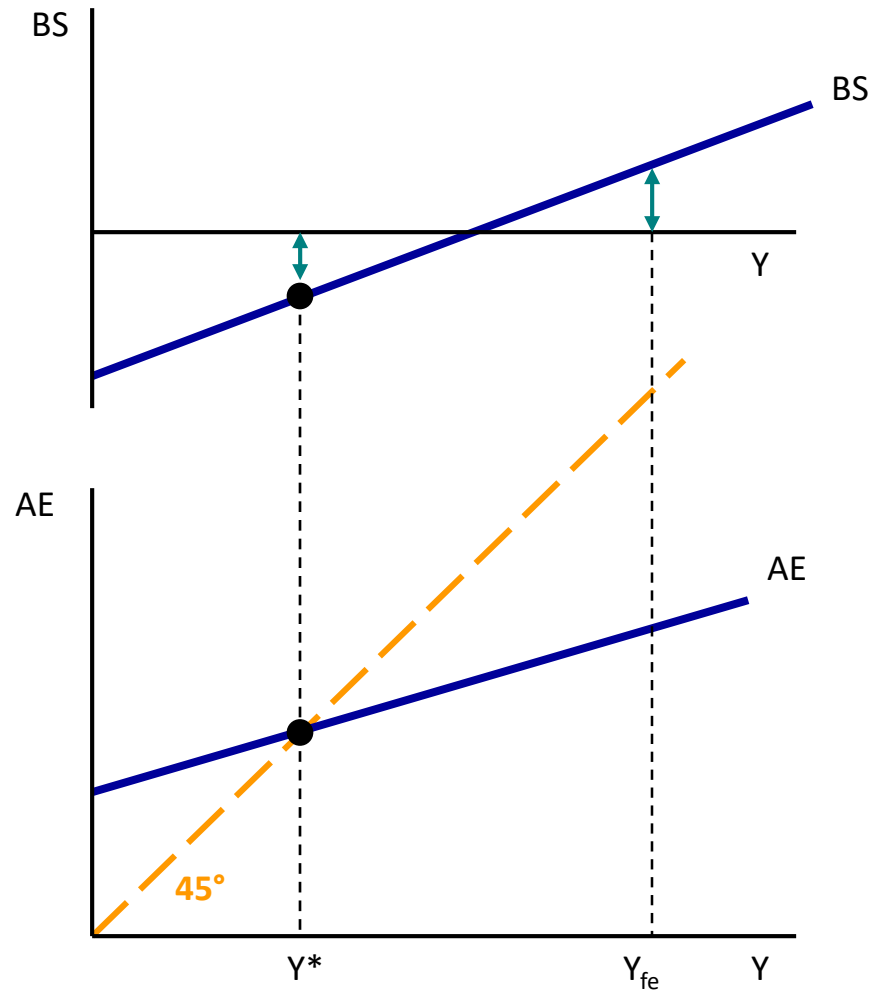
THE FULL-EMPLOYMENT BUDGET SURPLUS (CONT'D)

- We would normally expect the government to run a budget **deficit** during periods of **recession** (mainly due to the fall in government revenues)
 - This is called a **cyclical** budget deficit
 - This is a **“good”** deficit
- Similarly, we would expect the government to run a budget **surplus** during periods of **economic boom** (mainly due to the increase in government revenues)
 - This is called a **cyclical** budget surplus
 - This is a **“good”** surplus

THE FULL-EMPLOYMENT BUDGET SURPLUS (CONT'D)

- A **deficit** during periods of **economic boom** is called a **structural** deficit (due to either too much spending or taxes being too low)
 - This is a “**bad**” deficit
- Similarly, a **surplus** during periods of **recession** is called a **structural** surplus (due to either too little spending or too much taxes)
 - This is a “**bad**” surplus

THE FULL-EMPLOYMENT BUDGET SURPLUS (CONT'D)

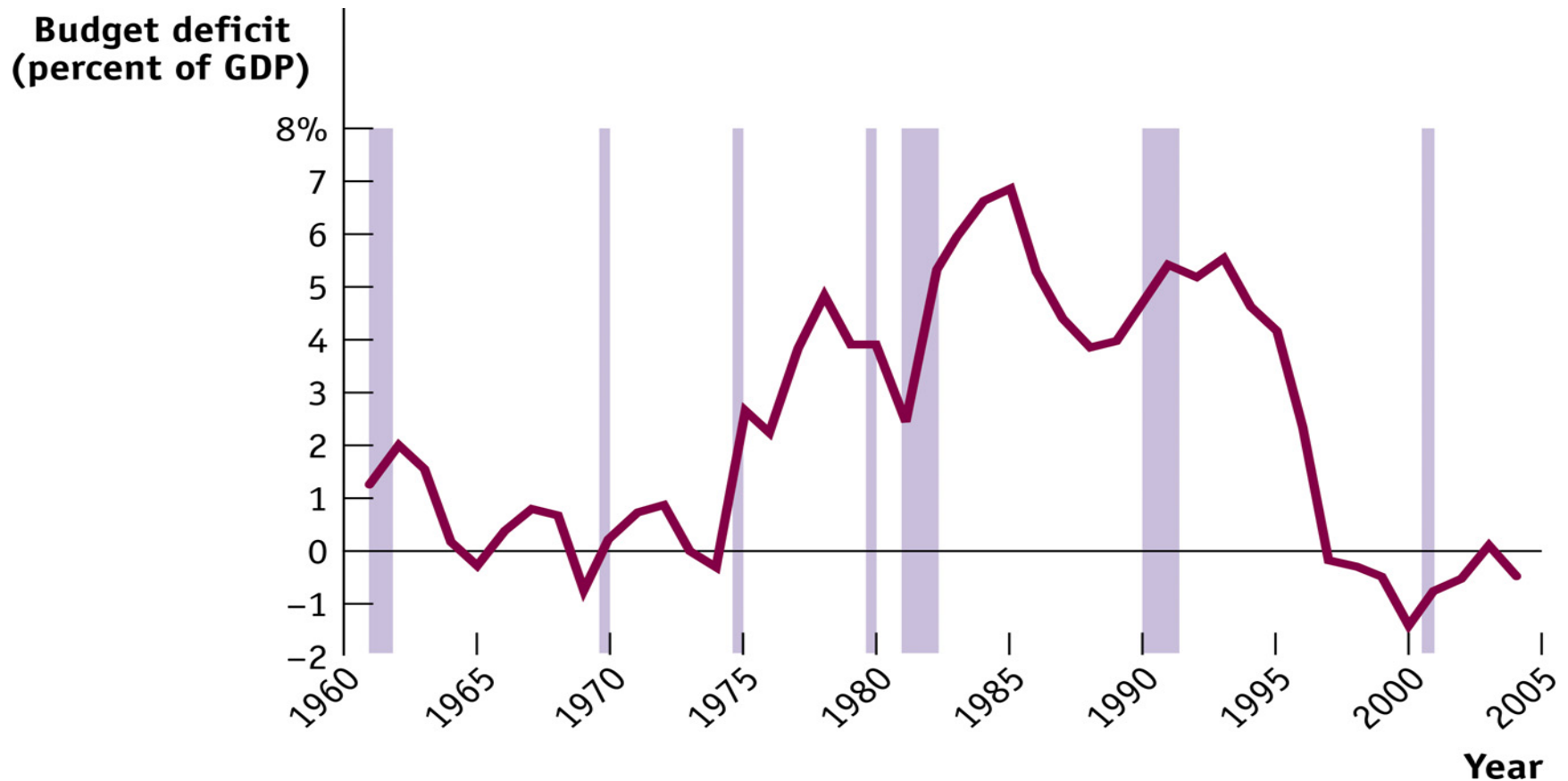


As the diagram shows, there is a budget deficit at the initial level of equilibrium income.

However, the diagram also shows that there would be a budget surplus if the level of equilibrium income were at the level of full-employment income.

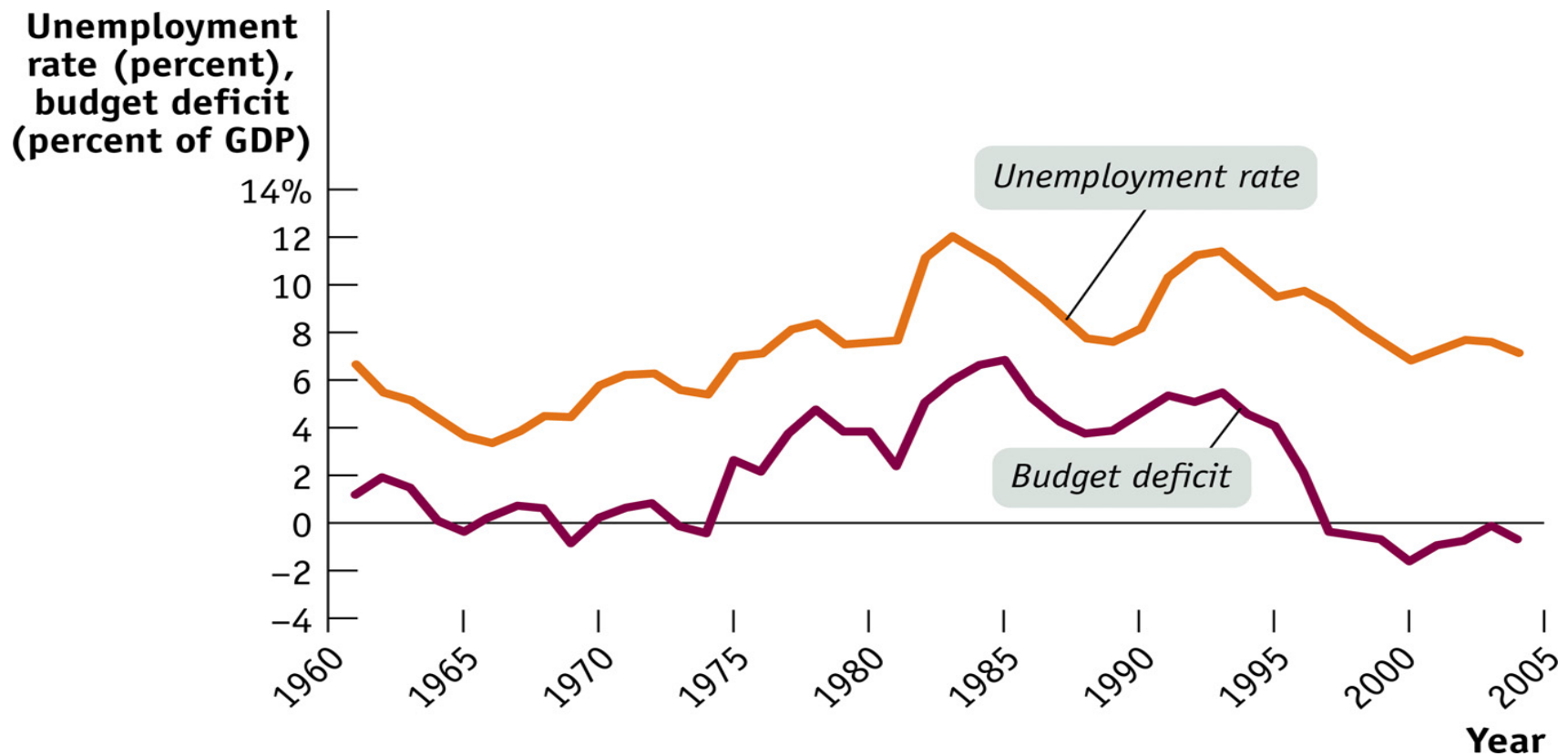
The diagram suggests that there is insufficient demand and thus \bar{G} should be increased rather than decreased.

FEDERAL BUDGET DEFICIT AS PERCENTAGE OF GDP (1960-2004)



Source: P. Krugman, R. Wells and A. Myatt, *Macroeconomics*.

FEDERAL BUDGET DEFICIT AND THE UNEMPLOYMENT RATE (1960-2004)



Source: P. Krugman, R. Wells and A. Myatt, *Macroeconomics*.

MYTH #3 – WE ARE OVER-TAXED

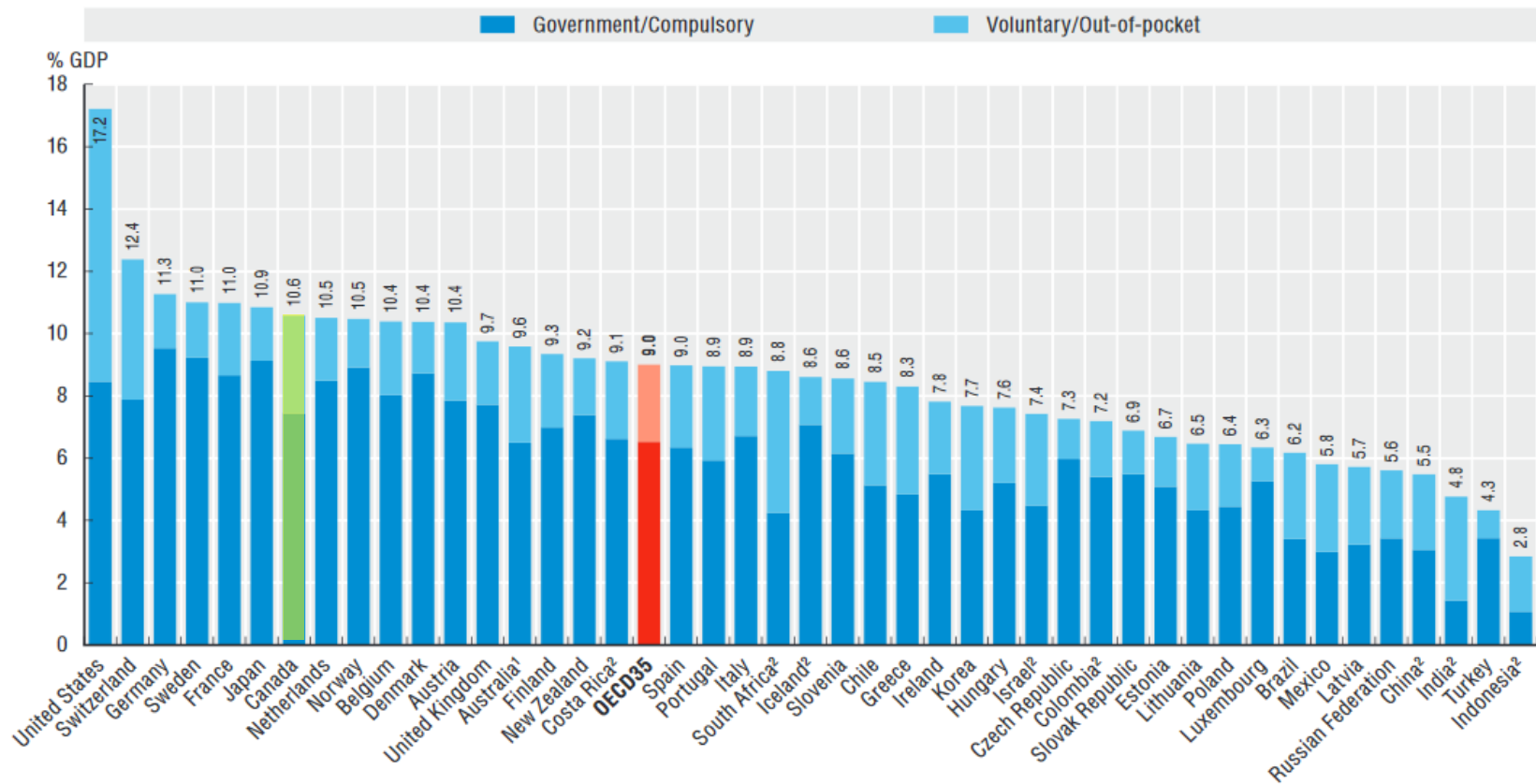
- Do we pay too much in *taxes*?
 - What is *too much*?
 - And what is *too little*?
- Too much or too little are *relative* terms, i.e., compared to something else:
 - Relative to the *services* we receive for the *taxes* we pay
 - Relative to what other *countries* pay for the same *services*
- Look at the data in the following table

TAXES AS PERCENTAGE OF GDP (2016)

Country	Taxes as % of GDP	Country	Taxes as % of GDP
Austria	42.7	Korea	26.3
Belgium	44.2	Mexico	17.2
Canada	31.7	Netherlands	38.9
Chile	20.4	New Zealand	32.1
Czech Republic	34.0	Norway	38.0
Denmark	45.9	Poland	33.6
Finland	44.1	Portugal	34.4
France	45.3	Slovak Republic	32.7
Germany	37.6	Spain	33.5
Greece	38.6	Sweden	44.1
Hungary	39.4	Switzerland	27.8
Iceland	36.4	Turkey	25.5
Ireland	23.0	United Kingdom	33.2
Israel	31.3	United States	26.0
Italy	42.9	OECD - Average	34.3

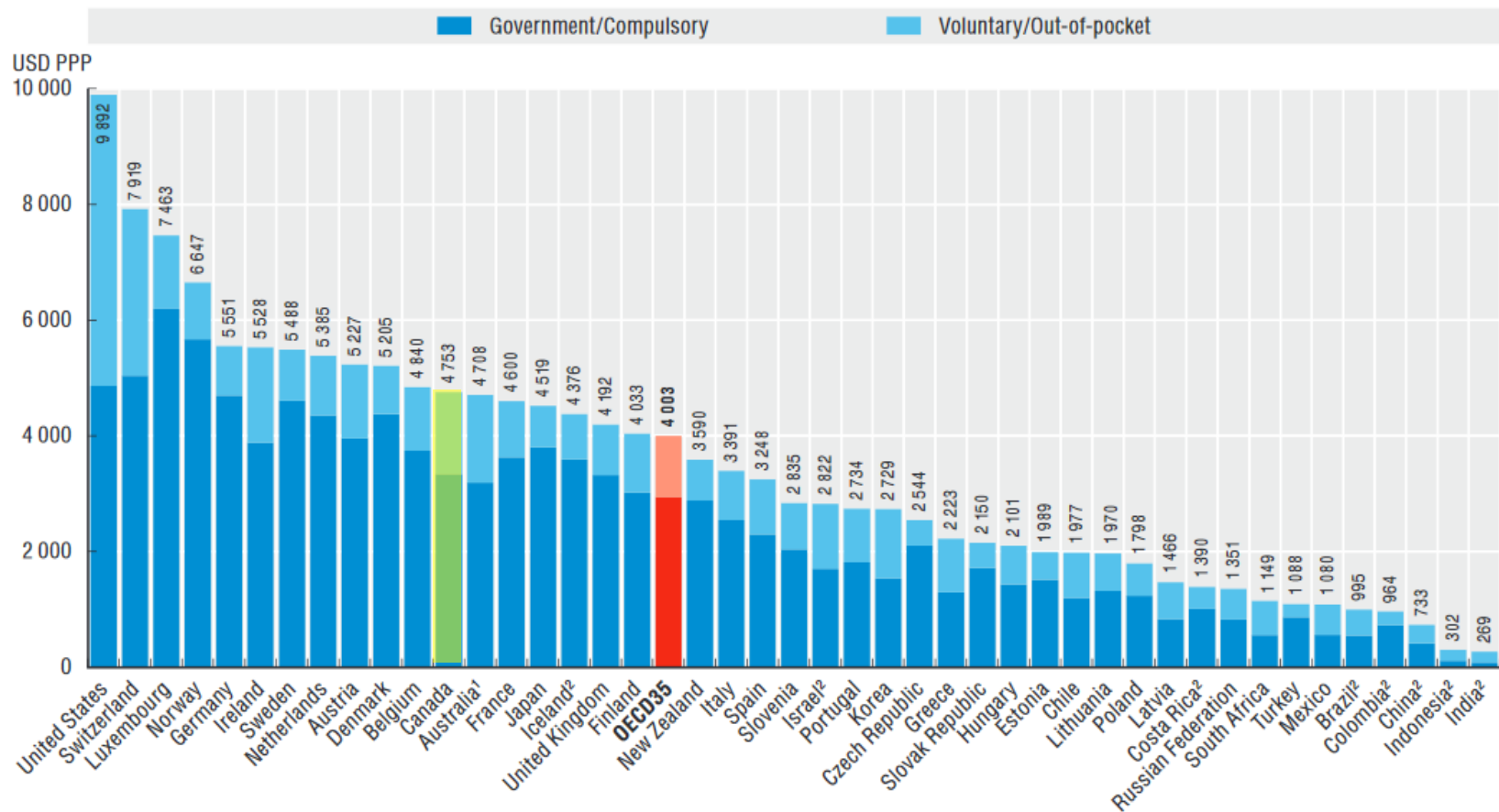
Source: *OECD Tax Statistics*, 2017.

HEALTH EXPENDITURE AS PERCENTAGE OF GDP (2016)



Source: OECD, *Health at Glance 2017 – OECD Indicators*, p. 135.

HEALTH EXPENDITURE PER CAPITA (2016)



Source: OECD, *Health at Glance 2017 – OECD Indicators*, p. 133.

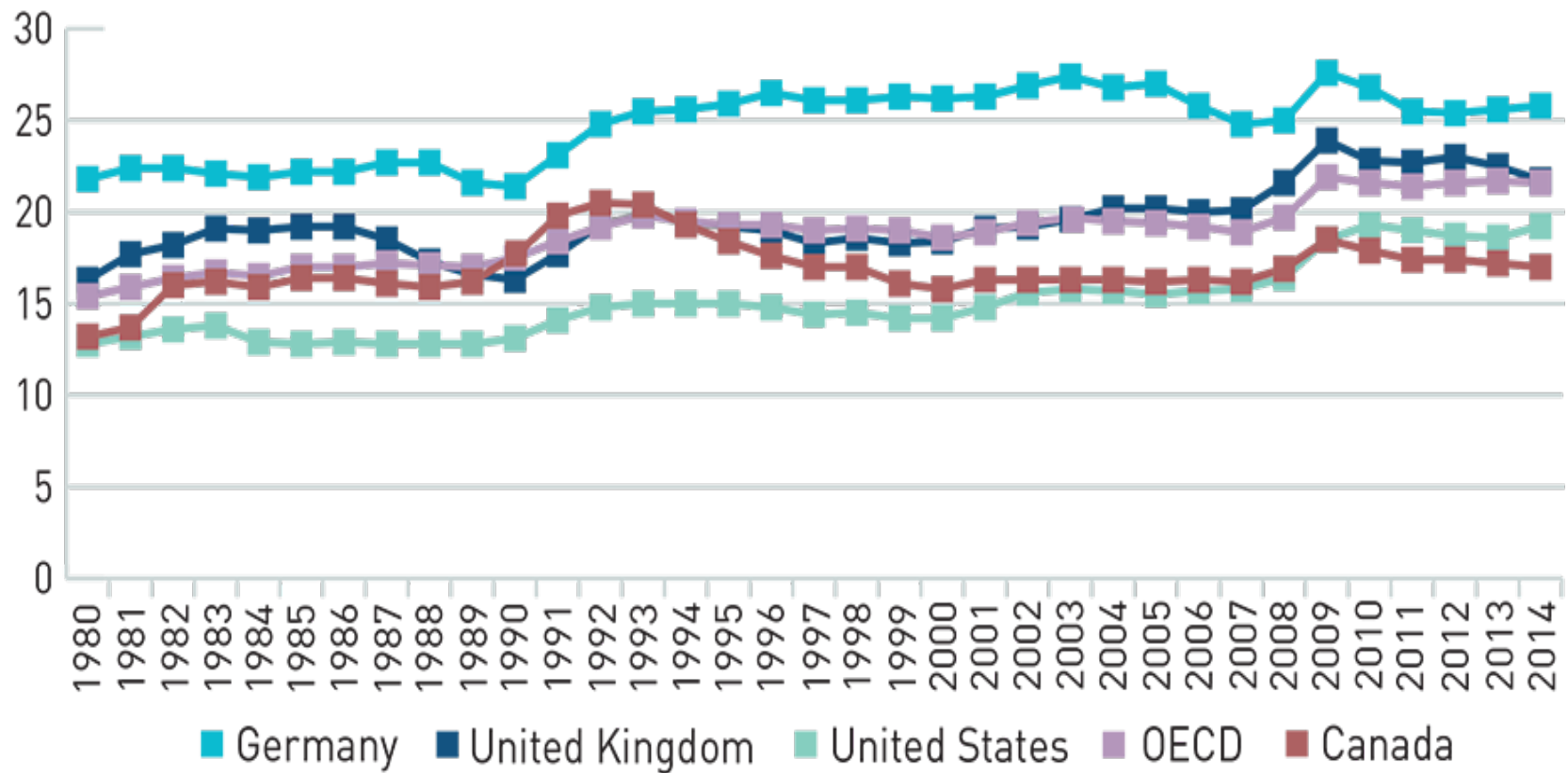
MYTH #4 – PUBLIC SECTOR IS LESS EFFICIENT

- Is the public sector *always* less efficient than the private sector?
 - Not necessarily
 - It varies from sector to sector
- Data suggests that public sector is more efficient in the delivery of services such as education, health care, and security
- Look at the previous table showing expenditure per capita on health care services

MYTH #5 – CANADA SPENDS TOO MUCH ON SOCIAL SERVICES

- Canada does spend a significant amount (total and per capita) on social services
 - But not so much relative to other OECD countries
- Look at the following table showing public social spending as a percentage of GDP
 - At the present time, we are spending even less than the US (as a percentage of GDP)

PUBLIC SOCIAL SPENDING (% OF GDP)



Source: Mowat Centre based on OECD Social Expenditure Database.

MYTH #6 – COUNTRIES WITH LARGE GOVERNMENTS ARE LESS COMPETITIVE

- This is a corollary of the myth that the public sector is always less efficient than the private sector
 - Greater bureaucracy, more costly, thus less competitive
- Data suggests that larger governments do not necessarily reduce competitiveness, and might even enhance it
 - See the following table

COMPETITIVENESS RANKING (2010)

Country	Rank	Score	Country	Rank	Score
Switzerland	1	5.63	Hong Kong SAR	11	5.30
Sweden	2	5.56	United Kingdom	12	5.25
Singapore	3	5.48	Taiwan, China	13	5.21
United States	4	5.43	Norway	14	5.14
Germany	5	5.39	France	15	5.13
Japan	6	5.37	Australia	16	5.11
Finland	7	5.37	Qatar	17	5.10
Netherlands	8	5.33	Austria	18	5.09
Denmark	9	5.32	Belgium	19	5.07
Canada	10	5.30	Luxembourg	20	5.05

Source: World Economic Forum, *The Global Competitiveness Report*, 2013.

MYTH #7 – COUNTRIES WITH LARGE GOVERNMENTS ARE MORE CORRUPT

- This view is based on the perception that large bureaucracies foster rent-seeking behaviour
- According to this view, therefore, governments should be minimized
 - Less corruption
 - More efficiency
- Data suggests that there is no correlation between larger governments and greater corruption
 - See the following table

CORRUPTION PERCEPTIONS INDEX (2014)

Country	Rank	Score	Country	Rank	Score
Denmark	1	92	Iceland	12	79
New Zealand	2	91	United Kingdom	14	78
Finland	3	89	Belgium	15	76
Sweden	4	87	Japan	15	76
Norway	5	86	Barbados	17	74
Switzerland	6	86	Hong Kong	17	74
Singapore	7	84	Ireland	17	74
Netherlands	8	83	United States	17	74
Luxembourg	9	82	Chile	21	73
Canada	10	81	Uruguay	21	73
Australia	11	80	Austria	23	72
Germany	12	79	Bahamas	24	71

Source: Transparency International.

MYTH #8 – COUNTRIES WITH LARGE GOVERNMENTS ARE LESS HAPPY

- This is also a corollary from the views espoused above
 - Large governments imply high taxes, less competitiveness, more corruption
 - Therefore, people are less happy
- Data suggests the opposite, which helps to disprove all the previous assertions about large governments
 - See the following table

HAPPINESS RANKING (2012)

Country	Rank	Score	Country	Rank	Score
Denmark	1	7.693	Israel	11	7.301
Norway	2	7.655	Costa Rica	12	7.257
Switzerland	3	7.650	New Zealand	13	7.221
Netherlands	4	7.512	UAE	14	7.144
Sweden	5	7.480	Panama	15	7.143
Canada	6	7.477	Mexico	16	7.088
Finland	7	7.389	United States	17	7.082
Austria	8	7.369	Ireland	18	7.076
Iceland	9	7.355	Luxembourg	19	7.054
Australia	10	7.350	Venezuela	20	7.039

Source: United Nations, *World Happiness Report*, 2013.