ST ANDREW'S JUNIOR COLLEGE
JC2 H2 ECONOMICS 2024

Economic Growth

In your first set of JC2 lecture notes, Standard of Living and Key Economic Indicators, you first learnt of a government's four macroeconomic goals (sustainable and inclusive economic growth, price stability, low unemployment/full employment, favourable balance of trade).

In this set of notes, we will explore the macroeconomic goal of sustainable and inclusive economic growth.

Important concepts and tools and analysis

- Actual and potential growth
- Sustainable growth
- Inclusive growth

Key questions to consider

1. What are the different types of economic growth?
2. Why do governments want to achieve economic growth?
3. When economic growth happens in a country, why do we want to ensure everyone benefits?
4. What happens when countries experience undesirable rates of economic growth?
5. How do countries experience economic growth? How is this illustrated on a diagram?

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What are the different types of economic growth?

1. Economic growth

There are several types of economic growth and it is important for you to know the difference between them, how they are measured and what causes them. In responding to questions on economic growth, we typically discuss how different types of growth can be achieved.

1.1. Actual Economic Growth

Actual economic growth is the increase in an economy's level of real output over a given time period.

Actual economic growth is usually measured by the rate of change of the real national income figures such as real Gross Domestic Product (GDP).

$$\%\text{ change in real GDP} = \frac{real\ GDP_t - real\ GDP_{t-1}}{real\ GDP_{t-1}} \times 100\%$$

Measuring real GDP eliminates changes in GDP caused by changes in the general price level. Hence, changes in real GDP measure changes in output produced by the economy over that time period.

An economy is said to have **experienced actual growth when there is an increase in real GDP**. This could be attained by a more efficient use of existing factors of production (that could have been previously underutilised or unemployed) within the economy to meet increased demand.

1.1.1. How is actual economic growth illustrated?

A more efficient use of resources will move production from Point A to Point B, a point further away from the origin and closer to the Production Possibility Curve (PPC) as in Fig 1.1a or by an increase in real national income from Y1 to Y2 due to an increase in AD from AD1 to AD2 as in Fig 1.1b.

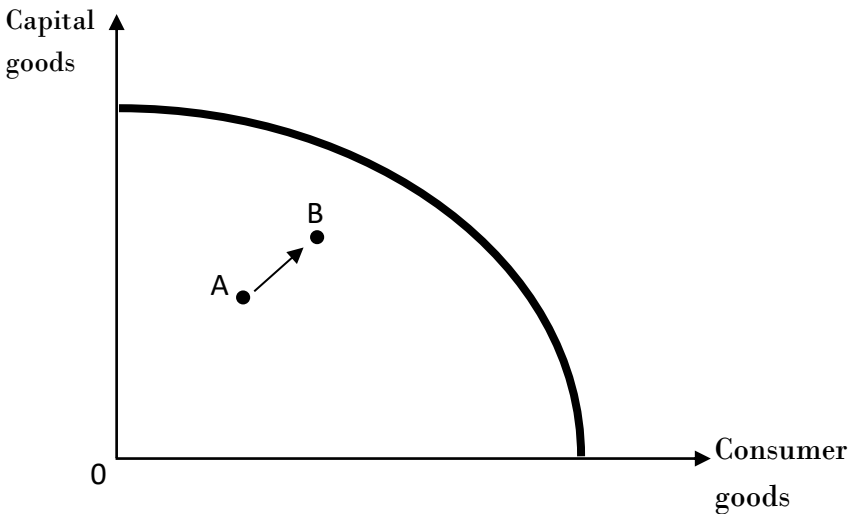

Fig 1.1a: Illustration of Actual Economic Growth using PPC

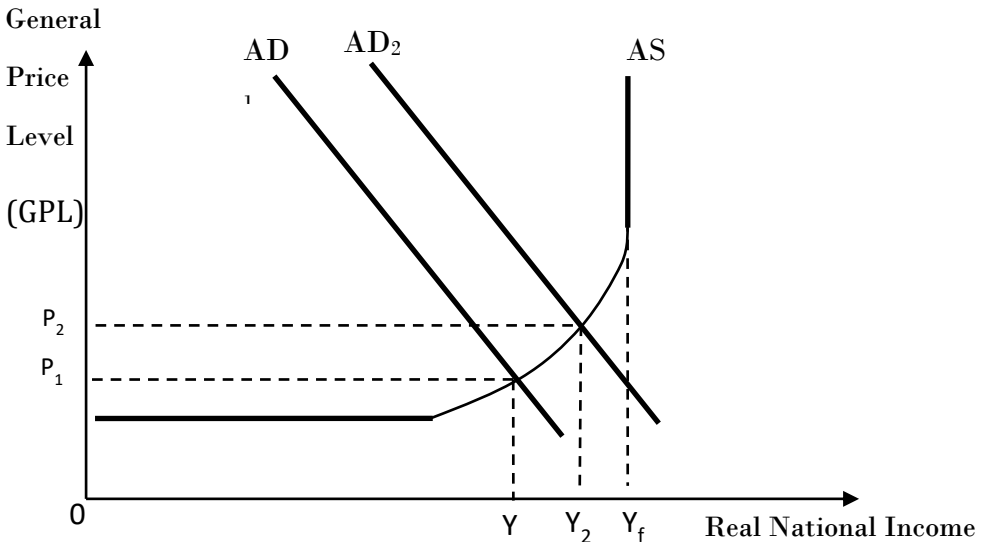

Fig 1.1b: Illustration of Actual Economic Growth using AD/AS Approach

Actual growth may also arise from an increase in SRAS which results in an increase in real national output. Illustrate an increase in SRAS and identify factors that could cause the SRAS to increase.

1.2. Potential Economic Growth

Potential economic growth is the increase in the productive capacity of an economy.

This growth is largely determined by the quantity and quality of factors of production and the level of technology prevailing within a country. Such growth affects the sustainability of actual economic growth.

1.2.1. How is potential economic growth illustrated?

This increase in a country's productive capacity may be illustrated by an outward shift of the country's Production Possibility Curve (PPC) as shown in Fig 1.2a or a rightward shift of the long run aggregate supply (LRAS) curve from $LRAS_1$ to $LRAS_2$ resulting in an increase in productive capacity Y_f to Y'_f as shown in Fig 1.2b.

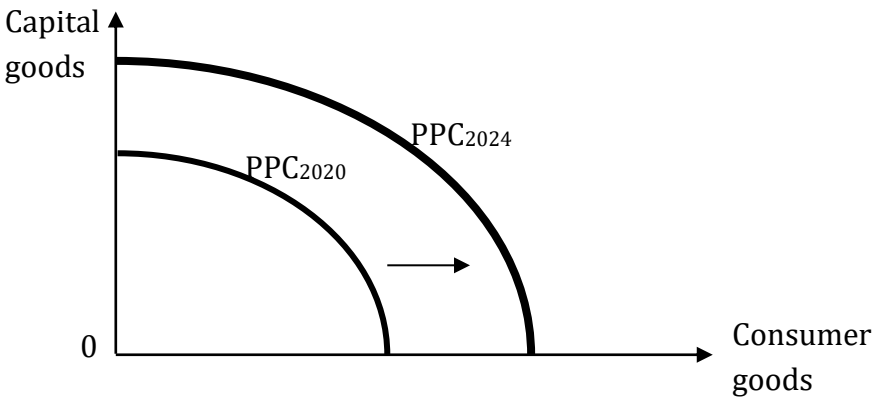

Fig. 1.2a: Illustration of Potential Economic Growth using PPC

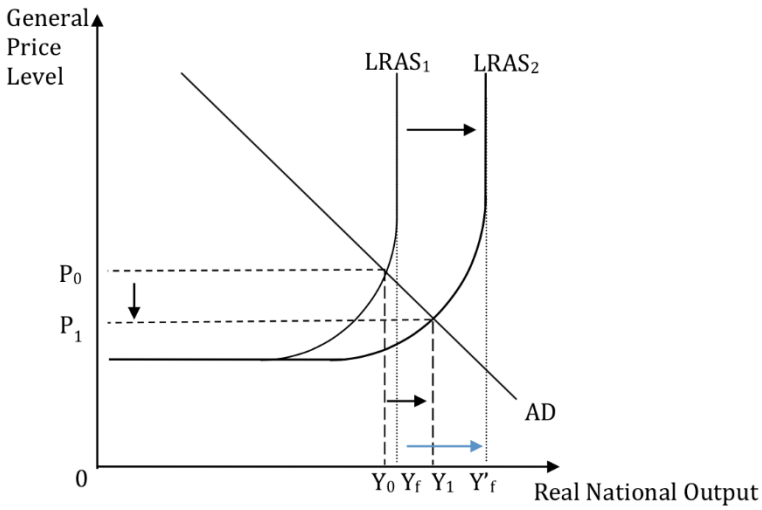

Fig 1.2b: Illustration of Potential Economic Growth using AD/AS Approach

Note: Potential economic growth which results in an increase in productive capacity Y_f to Y'_f as shown in Fig 1.2b above also results in actual growth shown by the increase in real national output from Y_0 to Y_1.

1.3. Sustainable Economic Growth

Sustainable growth refers to economic growth that is sustained over a period of time (i.e., both actual and potential growth), without creating other significant economic problems (such as depletion of resources and environmental problems or large increases in general price levels), for future generations.

For an economy to experience sustainable growth, actual growth must be accompanied by potential growth without resulting in significant environmental degradation and resource depletion.

1.3.1. How is sustained economic growth illustrated?

- In Fig 1.3a, actual growth is illustrated by an increased production of capital and/or consumer goods by moving away from the origin, e.g. from Point A to B.
- This is made possible only through an increase in productive capacity which is illustrated by an outward shift of the PPC from LK to MN from 2020 to 2024.
- This increase in productive capacity may have been the result of earlier years (in 2020) investment in capital goods, particularly in areas to optimise resources such as land, manpower, energy, and reduce carbon emissions, to ensure sustainable growth.

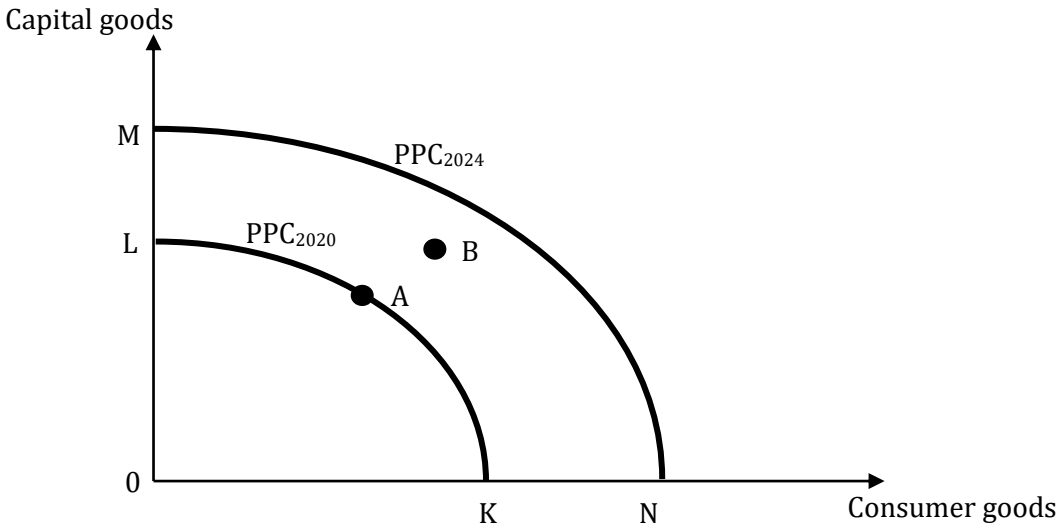

Fig 1.3a: Actual vs Potential Growth

Similarly, using the AD/AS approach, potential growth can be illustrated by the outward shift of the LRAS curve from AS_1 to AS_2 in Fig 1.3b above. When this is accompanied by a rise in AD from AD_1 to AD_2, there will be **sustained economic growth (i.e., both actual and potential growth)**.

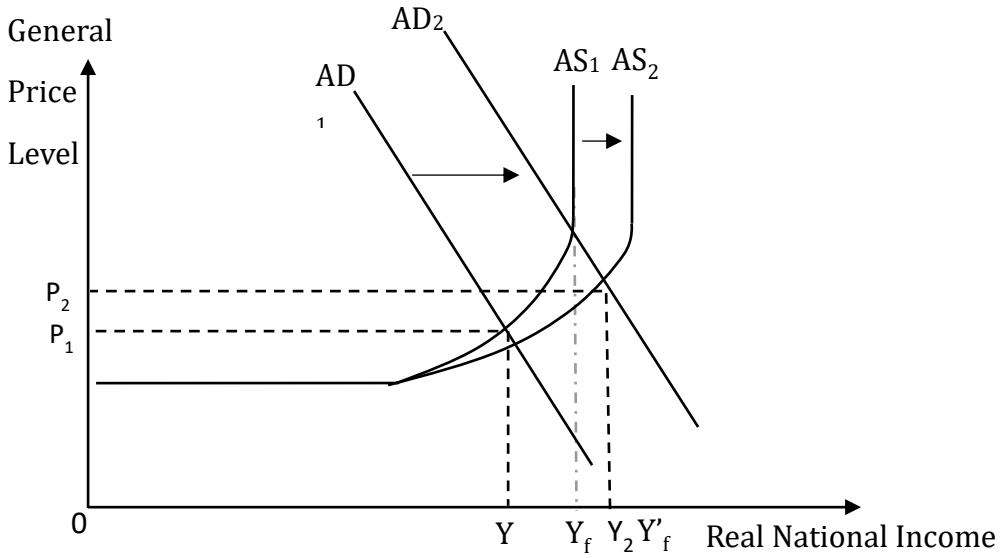

Fig 1.3b: Actual and Potential Growth using AD/AS Approach

When LRAS is at AS_1:

- When AD increases from AD_1 to AD_2, real national output only increases from Y_1 to Y_f.
- Y_f is the full employment level of output. At this output level, all factors of production in the economy are fully employed.

When LRAS is at AS_2:

- When AD increases from AD_1 to AD_2 and there is a concurrent increase of LRAS from AS_1 to AS_2, real national output increases from Y_1 to Y_2.
- This is higher than Y_f.

It is important for you to note that the diagrams above show sustained economic growth rather than sustainable economic growth. Sustainable economic growth requires sustained economic growth i.e., both actual and potential economic growth, without creating other significant economic problems. Sustainable growth involves both

- Environmentally sustainable growth – e.g., not exploiting and depleting scarce resources.
- Growth that is accompanied by low inflation and low build-up of debt.

Based on the above explanation, you should have realised that the terms 'sustainable economic growth' and 'sustained economic growth' are **NOT** interchangeable. Sustained economic growth means that the economy is growing at a strong and stable rate which requires both actual and potential economic growth. Sustainable economic growth on the other hand requires both a sustained economic growth and that there is no significant environmental degradation or resource depletion.

1.4. Inclusive Growth

Inclusive Growth indicates a rate of growth that is sustained over a period of time (i.e. both actual and potential growth), is broad-based across economic sectors, and creates productive employment opportunities for the majority of the country's population.

Inclusive growth distributes income from economic growth, in monetary and non-monetary terms, fairly across society. It should not worsen income inequality.

You will recall that economic growth can help to improve standard of living. Intuitively, 'a rising tide lifts all boats'. Economic growth could theoretically bring increasing income and higher living standards to all segments of society.

However, while a country's national income may grow, it does not necessarily mean that the benefits of the economic growth are shared with the majority of the country's population. If the benefits of economic growth are enjoyed by only a minority, there will be greater income inequality.

The 2017 World Economic Forum Report stated that over the past few years, a worldwide consensus has emerged on the need for a more socially-inclusive approach to generating economic growth i.e., a broad-based expansion of growth and opportunities.

We will look at the benefits of achieving inclusive economic growth in section 2.2.

How would an A-level question that requires the use of the content above look like? Have a look at the following essay question. This corresponds to EQ 3 (2019 GCE A Level EQ5)) of your Economic Growth Tutorial package.

There is potential for governments to achieve both inclusive growth and sustainable growth.

Explain what is meant by inclusive and sustainable growth. [10]

Why do governments want to achieve economic growth?

2. Benefits of Achieving Economic Growth

Economic growth, in particularly, when both sustainable and inclusive growth are achieved, can bring about an improvement in standard of living.

2.1. Benefits of achieving sustainable growth

♣ **A rise in material standard of living**

Economic growth results in rising real income per capita, ceteris paribus. With greater affluence and purchasing power, each individual can consume a greater bundle of goods and services. The material standard of living would thus be improved.

♣ **Reduction in poverty**

An expanding economy has many job opportunities for the unemployed; those who are willing and able to work are more likely to find employment in such an economy. They will be able to support themselves and their dependants. Thus, poverty can be reduced.

♣ **More government revenue**

With economic growth, government is able to enjoy higher tax revenue even without raising tax rates. This increase in government revenue could then be spent on improvement in infrastructure, education, promoting research and development which could result in potential economic growth.

♣ **Redistribution of incremental incomes**

With rise in incomes, the government can redistribute incomes from the rich to the poor through the use of an appropriate tax system.

For example, under a progressive tax system, as the income level of people rises, they automatically pay a larger proportion of their income as taxes. The extra revenue gained by the government can be spent on programmes to help the poor, thus possibly closing up the income gap.

♣ Society can afford to pay attention to environmental issues

To increase the non-material standard of living, society may prefer to allocate resources to create a cleaner living and working environment. These include catalytic convertors for cars and factories and cleaner methods of clearing land (instead of slash and burn). This strategy could be expedited with economic growth. Governments in poorer countries may not have the funds or the time to care for the environment as making their ends meet takes priority over most other aims. Hence, with economic growth, governments may then be better able to look into environmental issues which may improve the non-material standard of living.

When economic growth happens in a country, why do we want to ensure everyone benefits?

2.2. Benefits of Inclusive Growth

♣ **Reduction in poverty and, hence, reduction in fiscal burden**

Achieving inclusive growth implies individuals who are less educated or less able to work are given opportunities to earn a living. This could be made possible due to training and education opportunities which help them eventually get a job to support themselves and their families. Social welfare will be improved (reduction in poverty rate) as they would have an improved standard of living.

The government would also save on dispensing unemployment benefits and subsidies once people get out of poverty trap. These individuals who are now employed may even contribute back to society in terms of income tax and consumption tax. This will thus reduce the fiscal burden and such unemployment benefits could now be diverted to other productive use (e.g. producing more capital goods for the economy).

♣ **Inclusive growth allows maximum use of human capital**

Inclusive growth levels up the lower rungs of the society by providing them with opportunities to earn a living. The opportunity to work allows them to save, send their children to school and get educated. Subsequently, the human capital of the economy will increase as each generation of the young get educated and be ready to contribute as productive units of the economy. Without effort to attain inclusive growth, this group of individuals may not be able to afford the education given to their children and the full potential of generations worth of human capital may never be realised.

♣ **Inclusive growth generates even further growth**

Compared to uneven growth among income groups, where increase in national income accrues mainly to the higher-income group, a more inclusive growth would help to generate further growth. Given the lower-income group would have greater desire/need to spend out of increase in income earned, the eventual increase in spending will thus contribute more to subsequent rounds of income for the economy. On the contrary, the higher-income group will be more unlikely to spend due to their basic needs having been largely satisfied. In other words, lower-income groups have a higher marginal propensity to consume than higher-income groups. Hence, a more inclusive growth is desirable in ensuring continued growth in the economy.

For more details relating to benefits of inclusive growth, refer to Appendix A.

How would an A-level question that requires the use of the content in this section look like? Have a look at the following essay question. This corresponds to EQ 5 (2018 DHS H2 Prelims) of your Economic Growth Tutorial package.

Explain why a government aims to achieve sustainable and inclusive. [10]

What happens when countries experience undesirable rates of economic growth?

3. Consequences of excessively high rates of economic growth

Some economists advocate a slower pace of growth because of the consequences of excessively high rates of economic growth:

♣ **Rapid depletion of non-renewable resources**

Resources on Earth are finite and often non-renewable. Economic growth results in increased use of the Earth's scarce natural resources. This may accelerate the need to look for alternative sources of energy and necessary minerals such as iron, which would likely push up the cost of production. This higher cost of production may eventually cause a slowdown in the growth of the economy in the long run.

♣ **Generation of negative externalities**

The higher level of economic activities that results from economic growth tend to cause environmental degradation like air and noise pollution and traffic congestion is likely to worsen. The higher external costs generated will lead to larger deadweight loss, hence worsening allocative inefficiency. In addition, quality of life will also be lowered.

♣ **Trade-off between present consumption and continued economic growth**

One way to bring about economic growth is to increase capital accumulation. This means a sacrifice (trade-off) of present consumption for future economic growth. Thus, the economy pursuing higher economic growth may face a lower current standard of living.

♣ **Increased psychological problems**

Too rapid a growth rate makes the people unsettled and worried. The fast pace of life and work increases the stress level of the population. Thus, more cases of isolation, alienation and clinical depression and even breakdown of family may lead to overall lower worker productivity, absenteeism, etc.

♣ **Worsens income inequality**

The benefits of economic growth may accrue only to a few people, especially in the developing countries. Hence, the increase in income of the economy that arises from economic growth may not be distributed equally or equitably among the population. When an economy undergoes structural changes (e.g., from low technology, labour-intensive to capital-intensive industries), there may be a rise in the real GDP but workers who are unable to upgrade their skills fast enough to match the needs of the new job opportunities will find themselves structurally

unemployed. Those who are unable to match the pace of transformation will lag behind and possibly fall into the poverty trap. This would widen the income gap.

♣ **Inflation**

Growth of an economy could occur when AD or AS increases. If the increase in AD exceeds that of AS, such actual growth may eventually bring forth inflationary pressure. This is due to the inability of the firms to produce sufficient goods and services to meet the increase in demand. Hence, firms set higher prices to clear the markets. Inflation ensues.

♣ **Balance of trade (BOT) problems**

Economic growth may also bring forth undesirable BOT effect. Households earning higher income may prefer better quality foreign-sourced goods (e.g. high-tech gadgets) and services (e.g. tour to exotic places). Similarly, firms may also desire to upgrade its manufacturing equipment by installing better quality machines and production facilities sourced from developed economies. Assuming an economy is already facing BOT deficit, such an increase in import expenditure will widen the deficit.

♣ **Unemployment**

One possible negative effect of economic growth is unemployment. Though growth usually entails the increase in utilisation of resources such as labour, such an outcome is often accompanied by the loss of employment opportunities by some other economic agents in the economy. This phenomenon is famously coined as 'creative destruction'. Economies which undergo broad-based restructuring in order to remain competitive are usually those that face significant structural unemployment. For example, the growth of the services industries in the US and Germany over the past few decades caused considerable retrenchment. Workers who were retrenched were often not adequately trained to be re-absorbed into the services industries and were left unemployed.

Try to answer the following question:

What are the impacts of achieving undesirable rates of economic growth on the following economic agents?

♣ Consumers

♣ Producers

♣ Government

How do countries experience economic growth? How is this illustrated on a diagram?

4. Factors contributing to economic growth

We can classify factors contributing to economic growth into those affecting Aggregate Demand and those affecting Aggregate Supply (both Short-Run and Long-Run).

4.1. Factors affecting Aggregate Demand

There are many possible factors affecting the components of Aggregate Demand – Consumption, Investment, Government Expenditure and Net Exports. Recall that:

$$AD = C + I + G + (X-M)$$

Any factor that shifts the AD curve can bring about actual economic growth. The following factors are non-exhaustive. Any factor that changes C, I, G or (X-M) that is **unrelated to the general price level** will shift the AD curve.

Refer to the Aggregate Demand and Aggregate Supply Chapter for details on determinants of AD and factors affecting C, I, G, (X-M).

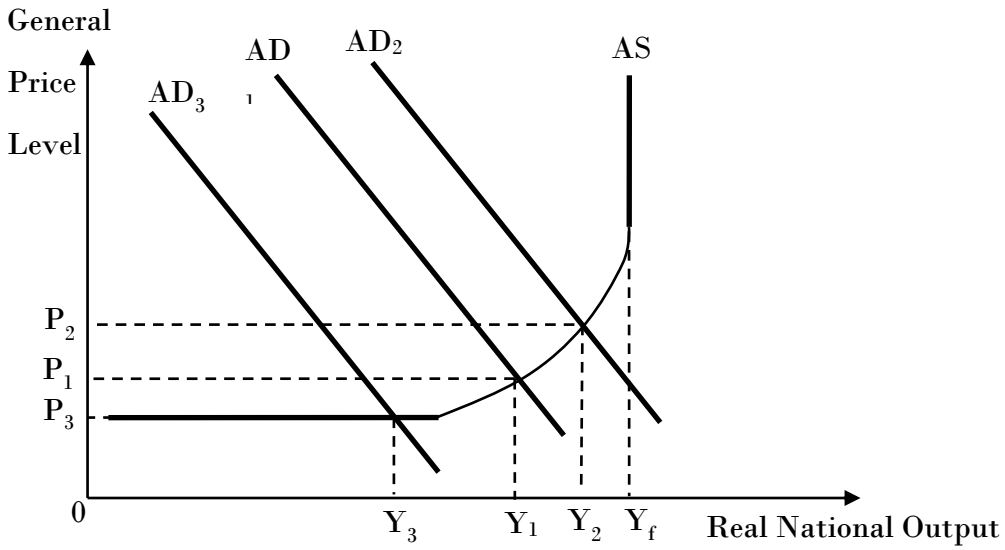

Fig 4.1a: An increase in AD

An increase in AD from AD_1 to AD_2 brought about by increases in C,I,G or (X-M) in Fig 4.1a above leads to an increase in real national output from Y_1 to Y_2, ceteris paribus. This is a case of actual economic growth.

4.2. Factors affecting Short-Run Aggregate Supply

Refer to the Aggregate Demand and Aggregate Supply Chapter for details on determinants of AS.

Any change to the cost of production in an economy would shift the AS. For example, oil is a key factor of production of many goods and services. Petrol, which is produced from crude oil, is used to power machines and vehicles. Oil prices have fallen from around US$100 in June 2014 to hover around US$40-50 in 2015. This leads to a fall in cost of production for most, if not all, firms in the economy.

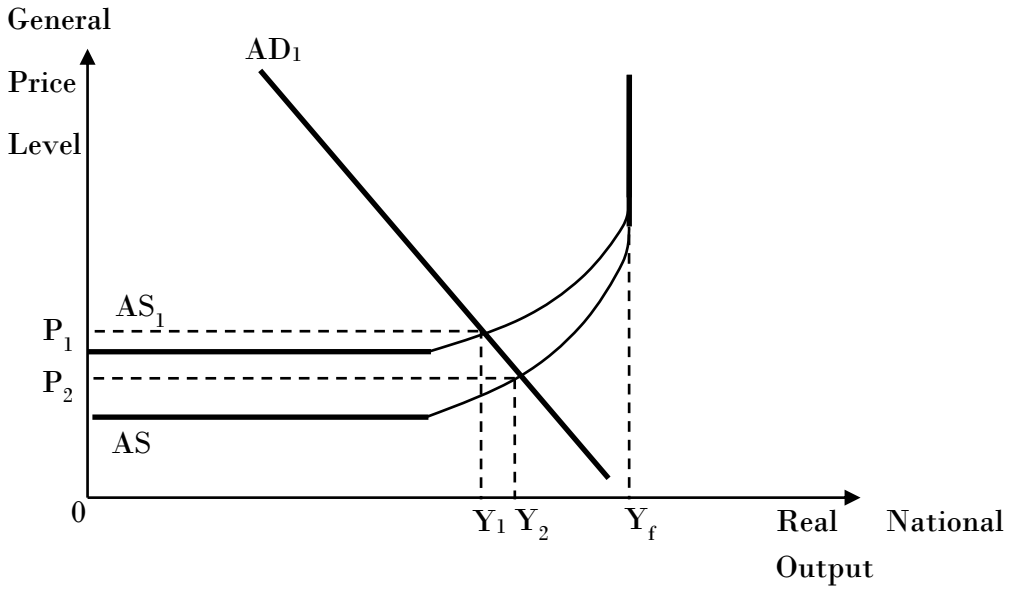

Fig 4.1b: An increase in SRAS

Recall that an increase in SRAS is represented by a downward shift of the SRAS curve. A fall in cost of production leads to the downward shift of the SRAS curve from AS_1 to AS_2 in Fig 4.1b above, leading to an increase in real national output from Y_1 to Y_2 in equilibrium, ceteris paribus. This demonstrates actual economic growth.

4.3. Factors affecting Long-Run Aggregate Supply

Any change to the **quantity/quality of factors of production** would shift the LRAS.

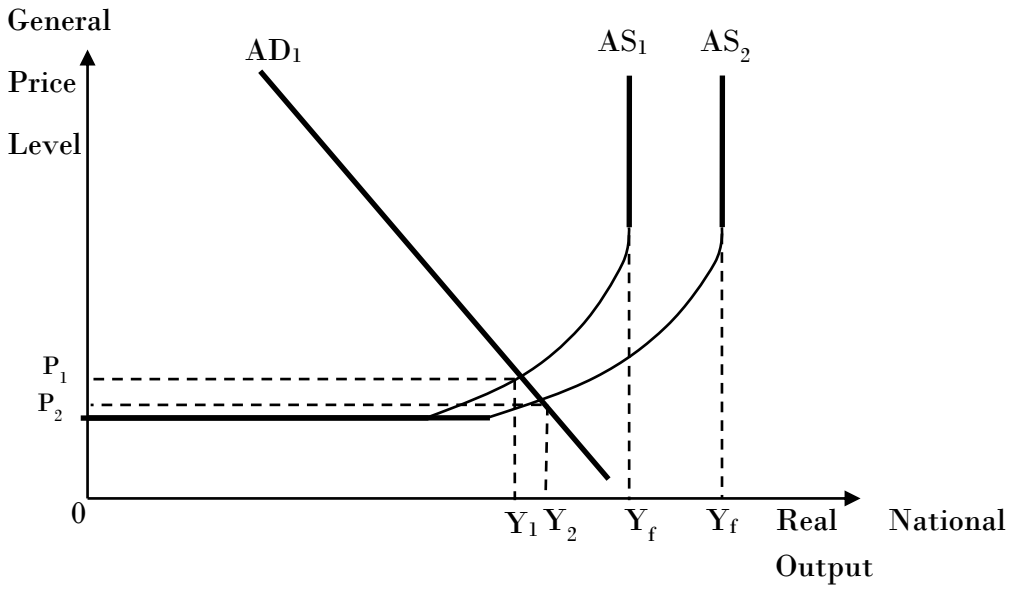

Fig 4.1c: An increase in LRAS

For example, an increase in the amount of natural resources (e.g. discovery of mineral deposits such as shale oil and gas in the USA) or land (e.g. fertile land formed by new volcanic formation over time) will lead to potential economic growth, as shown from an increase of LRAS from AS_1 to AS_2 in Fig 4.1c above. Similarly, an increase in technology or capital stock would also cause LRAS to increase.

- At level of aggregate demand AD_1, this leads to an increase in real national output from Y_1 to Y_2, resulting in actual economic growth.
- But there is no guarantee that Y_2 can be increased to Y_f' because the additional resources may not be used.

In summary, the factors contributing to economic growth can be explained by factors that may:

i. increase C, I, G and/or (X-M) resulting in an increase in AD
ii. increase SRAS
iii. increase LRAS

Only (iii) has a direct effect on potential economic growth, although an increase in I can lead to an increase in LRAS, resulting in potential economic growth. All three (i – iii) may lead to actual economic growth. Note that the ultimate impact on actual economic growth of each of the above depends on the current level of equilibrium national income. For example, if equilibrium national income is close to Y_f, then increases in AD will have only a small impact on actual economic growth.

5. Evaluation: Should Countries pursue Happiness rather than the pace of Economic Growth?

Measuring happiness has gained greater popularity among politicians in recent years. Different measures of happiness and well-being have emerged. Among the measures are the **Happy Planet Index** produced by the New Economics Foundation, **Better Life Index** produced by the OECD, and the United Nations uses **World Happiness Report**.

According to some economists, money can buy happiness. Their research show that the relationship between income and happiness hardly changes as income rise; people do not really grow tired of earning more. There is little doubt that wealthier nations are more pleasant places to live. Higher quality housing, clean water, relatively low crime rates, higher standard of education and so on are all results of greater wealth and income. The pursuit of economic growth has been the objective of most developed economies for the last hundred years.

However, as one economist Andrew Oswald of Warwick University said:

"Economic performance is…a means to an end. That end is not the consumption of beef burgers, nor the accumulation of television set…but the rather enrichment of mankind's feeling of well-being. Economic things matter only as they make people happier."

For those living in developed countries, economic growth has been successful in raising well-being. For developing economies, GDP remains a key objective as a means of raising 1 billion people who live on $1 a day out of poverty.

Are happiness and economic growth mutually exclusive? The answer is "NO". However, the unwavering ambition to simply seek economic growth is unsustainable given the scarce resources of the earth. As an economist puts it:

"To resist growth is to risk economic and social collapse. To pursue relentlessly is to endanger the ecosystems on which we depend for long-term survival."

Adapted from Economics Today. September 2013

Appendix A

Why does inclusive growth matter?

Poverty is bad for growth

So say the IMF and OECD. This is partly because they weaken the 'consumption engine' - the amount of money people have to spend on goods and services in the economy. Even more critically, unequal countries have lower levels of social mobility and are failing to take full advantage of their most prized asset – human capital (people). To drive up innovation, creativity and productivity we need a more dynamic, socially mobile labour market built around an effective education and skills system. Whether it's young people entering the labour market for the first time, unemployed people seeking work or under-employed workers whose skills are not being utilised, an inclusive growth agenda seeks to enable people to fulfil their own potential, and in doing so the potential of the economy they are a part of. Poverty can also generate a vicious cycle whereby people are not motivated to invest in their own education, skills and careers if they perceive their job prospects to be a low-paid, 'dead-end' job, or worse still, no job at all.

https://www.jrf.org.uk/blog/what-inclusive-growth-and-why-does-it-matter

Isn't simple growth enough?

The push for economic growth in recent decades has led to substantial increases in wealth for large numbers of people across the globe. But despite huge gains in global economic output, there is evidence that our current social, political and economic systems are exacerbating inequalities, rather than reducing them.

A growing body of research also suggests that rising income inequality is the cause of economic and social ills, ranging from low consumption to social and political unrest, and is damaging to our future economic well-being.

https://www.weforum.org/agenda/2016/01/why-does-inclusive-growth-matter/

Inequality can be a signal of lack of income mobility and opportunity—a reflection of persistent disadvantage for particular segments of the society. Widening inequality also has significant implications for growth and macroeconomic stability, it can concentrate political and decision making power in the hands of a few, lead to a suboptimal use of human resources, cause investment-reducing political and economic instability, and raise crisis risk.

Why is rising inequality a concern? High and sustained levels of inequality, especially inequality of opportunity, can entail large social costs. Entrenched inequality of outcomes can significantly undermine individuals' educational and occupational choices. Further, inequality of outcomes does not generate the "right" incentives if it rests on rents (Stiglitz 2012). In that event, individuals have an incentive to divert their efforts toward securing favoured treatment and protection, resulting in resource misallocation, corruption, and nepotism, with attendant

adverse social and economic consequences. In particular, citizens can lose confidence in institutions, eroding social cohesion and confidence in the future.

More importantly, we find an inverse relationship between the income share accruing to the rich (top 20 percent) and economic growth. If the income share of the top 20 percent increases by 1 percentage point, GDP growth is actually 0.08 percentage point lower in the following five years, suggesting that the benefits do not trickle down. Instead, a similar increase in the income share of the bottom 20 percent (the poor) is associated with 0.38 percentage point higher growth.

Increasing concentration of incomes could also reduce aggregate demand and undermine growth, because the wealthy spend a lower fraction of their incomes than middle- and lower-income groups.

https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf