NYJC

TUTORIAL QUESTIONS

Key Economic Indicators:
National Income Accounting

National Income Accounting
Essential Questions: **1. What are the economic indicators available to measure the economic performance and standard of living of an economy?** **2. To what extent are the economic indicators effective in measuring the standard of living of an economy and between different economies?**

Review on: National Income Accounting

Below are general issues you need to know before attempting the tutorial questions. Please put a tick in the column, to indicate that you are aware of the issue and understand it clearly. Else do revise the issues before attempting the essay and case study questions.

National Income Accounting	Tick
1. Define GDP and GNP	
2. What is the difference between nominal GDP and real GDP?	
3. What is standard of living?	
4. How is standard of living different from cost of living?	
5. How can National Income Statistics be used to assess the economic performance of an economy, including international comparisons?	
6. What are the problems encountered in measuring standard of living using National Income Statistics?	
7. Are there other better indicators of standard of living other than National Income Statistics?	

SECTION 1 – Economics ALIVE!

Article #1: The GDP myth: The planet's measure for economic growth is deeply flawed and outdated
By business reporter Stephen Letts (Updated 3 Jun 2018)

Just as it has every three months for the past six decades, next week the Australian Bureau of Statistics will unleash a torrent of numbers that make up the national accounts.

The one number that will define the whole exercise, and more importantly Australia's economic health, will be Gross Domestic Product, or GDP. It's the stuff of headlines, political pointscoring and national pride or shame. It is something of an economic speedometer that central bankers use when deciding to squeeze the monetary accelerator or hit the brakes. As such, it has a big impact on interest rates and the cost of the money we borrow. It is also flawed, outdated and a very narrow measure of a nation's economic wellbeing.

The ABS is not alone. Every nation trots out the same thing, although with varying degrees of accuracy. The numbers churned out by China, the world's second biggest economy, is the most obvious example of doubts surrounding the merit of GDP as a measure of economic health and wealth.

"Across the globe, a continuous increase in GDP ranks on top of political and regulatory agendas," said Urs Rohner, chairman of Credit Suisse.

"It has been argued for some time, however, that decision-making ought to reconsider the fixation on GDP, which tends to be imprecise in considering assets and often fail to account for liabilities," Mr Rohner said. "GDP metrics provide no indication of societies damaging their capital, such as withholding education from certain groups or depleting natural resources for immediate economic benefit."

Common criticisms of GDP

- Hopelessly flawed measure of welfare. It ignores leisure and women's work in the home.
- GDP ignores distribution. In the richest country in the world, the US, inequality has risen sharply.
- We should stop looking for policies to raise GDP and look instead for policies that promote happiness.
- Even if higher GDP were a good idea on other grounds, it is not feasible because the environmental damage would be too great.

Source: Nicholas Oulton, London School of Economics

There are two big problems with GDP identified by the Credit Suisse report:

- It is of dubious value in capturing many of the difficult policy issues that governments face, particularly on the environment, health and equality.
- Being backward looking, GDP is of little use to financial markets and investors in making decisions about future cycles.

These days, big investors look at much more idiosyncratic data such as oil rig counts and app download statistics when deciding where to dispatch their capital. Nominal GDP can be measured with reasonable accuracy, but when inflation is introduced for "real GDP" and in volume terms, things can become even more wobbly.

There are not only components of GDP without prices, which need artificial proxies to be created, but inflation data is very slow at picking up the impact of new goods and price-deflating technological breakthroughs.

A narrow measure

But the bigger issue is social capital. As Cambridge University economics professor and one of the report's contributors Diane Coyle says, economic growth is more than important — it is a moral imperative. "Growth is driven by innovations that ultimately improve and lengthen people's lives and wellbeing, reduce infant mortality, and create fulfilling work for more people," Professor Coyle said. "A growing economy is one where people have a sense of possibility for the future, of hope." However, the increase in GDP — as defined now — this year, or this quarter is quite a narrow measure of what matters for people's economic welfare."

GDP may have had its uses, but as Professor Coyle argued, a statistical framework established around 70 years ago is no longer an adequate measure of economic growth.

GDP's anomalies

GDP certainly throws up a lot of anomalies.

Ireland's Central Statistical Office announced Irish GDP was on world record pace back in 2015, growing at an extraordinary 26 per cent. A deeper look showed it was almost entirely due to multinationals shifting subsidiaries to a more tax-friendly environment built on the now infamous "Double Irish Dutch sandwich" tax dodge. It made not a "zonk's" difference to Irish living standards.

Credit Suisse's home is another classic example. Evidently a very wealthy nation, it is a loser in the GDP growth stakes. On OECD figures, the Swiss domestic economy has on average had the lowest price-adjusted GDP growth of all the industrial countries over the past 50 years, plodding along at sub-2 per cent pace.

China, held up as the champion of global growth, has averaged closer to 10 per cent a year over the same period. However, through the prism of Yale University's respected Environmental Performance Index, the Swiss are ranked number one, China comes in at 120 out of 180 nations. Australia sits just outside the top 20.

The Credit Suisse report points out that one of the great paradoxes of GDP growth is that an environmental disaster such as decent sized oil spill — can be a real positive. "Costs associated with cleaning it up are often counted in GDP, thus inflating GDP figures and making the oil spill look like growth," the report observed.

Photo: China has world-beating economic growth, but the liability of pollution does not show up in GDP ledger. (ABC News: Zhang Qian)

Putting it another way, a nation could boost its GDP almost immediately by clear-felling all its forests and shipping out the timber. That would neither be sustainable, nor add much to the overall richness of life.

It is not a particularly original thought. Former Treasury secretary, now NAB chair Ken Henry was bemoaning GDP's limitations almost a decade ago. "GDP does not adequately measure non-market production, such as the quality and quantity of government services," Dr Henry told a National Statistics conference in 2010.

"And GDP deals poorly with environmental matters," Dr Henry, the noted champion of the endangered Northern Hairy-Nosed Wombat, added for good measure. "Difficulties in measuring the value of market consumption and wealth notwithstanding, in a world with readily available market measures of things like employment and commercial asset values, the lack of similarly accepted measures of the value of the environment creates the risk that society will fail to get the balance right," Dr Henry said.

The alternatives

So if GDP is past its use-by date, what could replace it? The Credit Suisse team considers several options, none of them entirely adequate for the big job of becoming the new global benchmark:

Sustainable National Income: Unlike GDP, not only does SNI incorporate sustainability in its income measures, but it can also be used to measure environmental degradation through a simple calculation of the difference between actual and sustainable income. Largely theoretical, at best an adjunct to GDP calculations.

Genuine Progress Indicator: Takes into consideration both environmental and social aspects, which are neglected by GDP. The GPI starts with consumption data similar to that used in GDP calculations. It then adjusts this by costs of crime, environmental degradation and loss of leisure, while adding the impact of items like services and public infrastructure, as well as the benefits of volunteering and housework. Its limitations include a heavy reliance on subjective judgement.

Human Development Index & Inclusion Development Index: Both treat people, rather than the sum of material wealth, as the important assets of a nation as humans are both the means and the ends of economic development. These indicators concentrate on improved health and education, as well as reduced economic and gender inequality. Their adoption could nudge policymakers away from macroeconomic and stability outcomes to more inclusive growth, the Credit Suisse paper argues.

Happiness Index: Complied in the World Happiness Report, the HI is based on theory that happiness among nations can largely (75 per cent) be explained by six variables; GDP per capita, life expectancy, social support, trust (in both government and business), personal freedoms and generosity, with the first three the most important factors. Credit Suisse said this supports the idea that GDP growth can boost happiness, but has to be supported with social factors.

Happiness vs growth

The happiest countries — including Australia, ranked 10th last year — score well across all six categories, but do not necessarily shoot the lights out in their GDP per capita ranking.The Credit Suisse report said China on the other hand is a cautionary example."Despite a startling increase in GDP, Chinese citizens are no happier than they were 25 years ago."This is why, rather than ignoring GDP growth or obsessing over it, it is best to supplement it with other indicators that will provide a better overall picture and more insight for policymakers," the Credit Suisse report concludes.

Country	Happiness Index ranking (2017)	Real GDP per capita ranking (2017)
Finland	1	25
Norway	2	6
Denmark	3	20
Iceland	4	14
Switzerland	5	9
Netherlands	6	13
Canada	7	22
New Zealand	8	31
Sweden	9	16
Australia	10	18

Source: World Happiness Report, IMF

The stakes on getting things right are very high given the importance of the conventional statistics in determining policy across the globe.

"What if [the] statistics are too uncertain to be meaningful? Governments justify politically contentious policies in terms of likely contribution to GDP growth. What if what we think we know about the economy is a chimera?" Cambridge University's Professor Coyle asked.

"The most obvious kinds of change happening in people's lives now are not reflected anywhere in official statistics," Professor Coyle said.

However, Professor Coyle said for the time being GDP should not be tossed out."In thick fog, some light is better than none. For such purposes, GDP serves us reasonably well," she said. But it will take considerable time and effort for any meaningful change. "Nobody wants to change until everybody changes. Statisticians, reporters, policymakers and the public are all locked into the existing standard."

Certainly, it will be the "same old" when the ABS hits the publish button on the National Accounts at 11:30 on Wednesday morning.

Discussion:

1. Why is GDP considered a narrow measure of economic growth?

   Guiding questions:
   - *What is GDP?*
   - *Does GDP measure long-term economic growth? Why or why not?*
   - *Is GDP data accurate?*

- GDP refers to the total money value of all final goods and services *produced within the geographical boundary* of a country within a period of time, regardless of whether they are produced by nationals or foreigners.
- GDP figures are usually calculated on a yearly basis whereas the impact of growth is usually seen from a longer term perspective
- GDP figures does not include the condition of income distribution, leisure time, environmental damage, type of goods etc.
- The extent of accuracy of GDP data also varies across countries

2. The article suggests that although China was "held up as the champion of global growth", their citizens are no happier than they were 25 years ago. Explain why.

   Guiding questions:
   - *What are the broad factors that make people "happy"?*
   - *Can economic growth lead to "happiness"?*
   - *Does economic growth necessarily lead to "happiness"?*
   - *How do you factor in the role of government?*

- Happiness depends on factors like environmental conditions, income distribution, heath conditions, life expectancy, social support, personal freedom besides real GDP per capita (i.e. linked to the intangibles or non-material SOL)
- With economic growth, incomes rise and individuals are better able to afford better health care, education etc. → enhances "happiness".
- However, economic growth may come at the expense of "happiness" → E.g. China's pollution condition is extremely high due to over production, income inequality has been widening sharply etc. which explains the situation in China.

3. Discuss whether the alternative indicators are an effective measure of economic wellbeing.

   Guiding questions:
   - *How are the alternative indicators a better measure of economic wellbeing?*
   - *What are limitations of the alternative indicates in measuring economic wellbeing?*
   - *Does the effectiveness of the alternative indicators vary with different economies?*

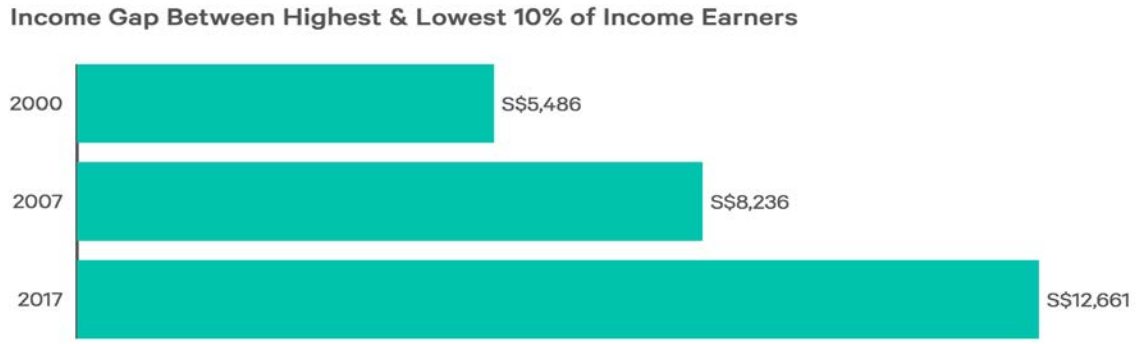
- Alternative indicators (aka composite indicators) measure both material and non-material aspects of economic wellbeing. In this respect, it is more comprehensive than traditional GDP statistics.
- However, there are still limitations in the use of composite indicators (e.g. data accuracy, does not cover all aspects of wellbeing which is not exhaustive)
- Effectiveness of measure could vary with different types of economies (e.g. open vs less open, large vs small, developed vs developing etc.)

Article #2: How Big of a Problem is Income Inequality in Singapore?
Source: William Hofmann, 23 July 2018

With GDP per capita of S$79,697, Singapore is one of the richest nations in the world. However, like many other countries, it faces concerns regarding rising income inequality among its residents. In this study, we analysed publicly available data to determine the severity of income inequality in Singapore.

Income Gap Appears to Be Expanding

At first glance, income inequality in Singapore may seem to be widening. For example, the richest 10% of households saw their monthly income per household member grow from S$8,571 in 2007 to S$13,215 in 2017. In contrast, the poorest 10% of households experienced an income growth of S$219 during the same time frame. This would suggest that the income gap between Singapore's highest and lowest income earners grew by 54% from S$8,236 in 2007 to S$12,661 in 2017.



Source: Singapore Department of Statistics

Lower Income Groups Have Experienced Fastest Wage Growth

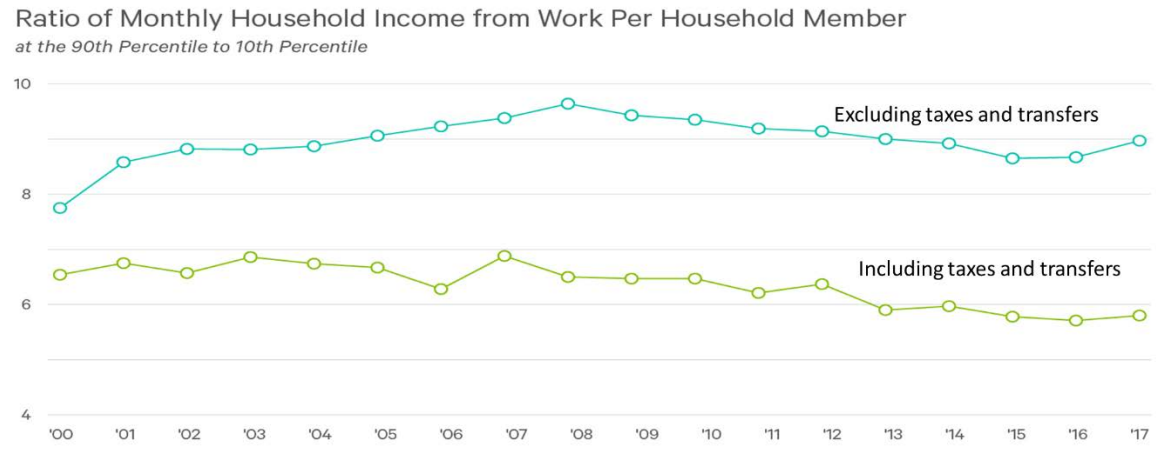
However, there's more to the income gap than meets the eye, and the income inequality situation may not be as bleak as the widening income gap suggests. In fact, while rich Singaporeans have seen more significant income increases in absolute dollar terms, low-income earners have experienced faster income growth in percentage terms. For example, low-income earners experienced 65% - 77% income growth since 2007, higher than 54% - 70% experienced by the top 40% of earners. Therefore, the income gap is actually improving in percentage terms for most income groups.

Source: Singapore Department of Statistics

To illustrate how the income gap can increase in absolute dollar terms while the incomes of low-income individuals increase more quickly, imagine a worker that earns S$20,000 per year compared to another individual that earns S$100,000 per year. Even if the first individual earns a 10% raise and the second receives a 5% raise, the second individual will experience a bigger jump in income (S$5,000) than the first individual (S$2,000). However, if such disparity in their income growth rate persists, the low income group will eventually catch up to the wealthiest group.

Government Taxes and Transfers Have Helped Constrain Income Inequality

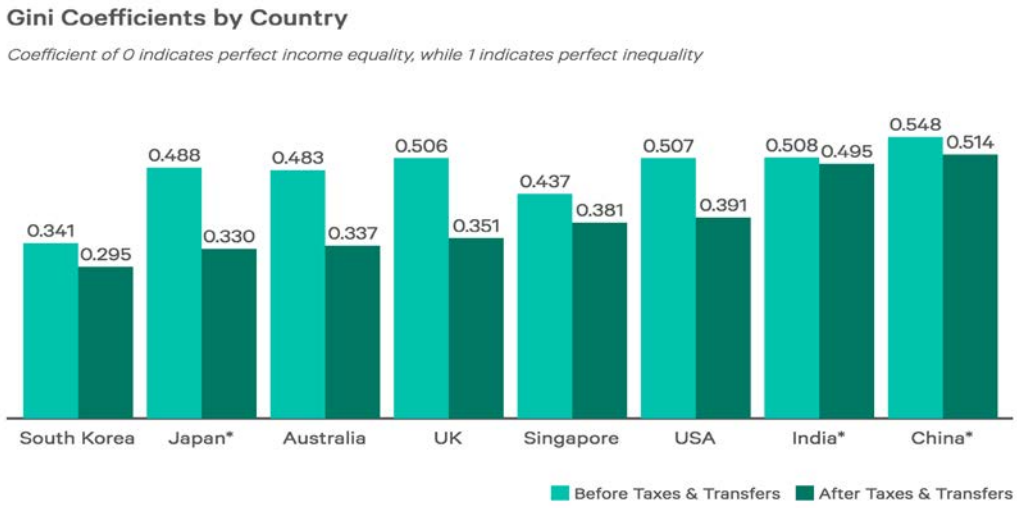
Furthermore, government transfers have helped to mitigate income inequality in Singapore. For example, Singapore's 90/10 income inequality ratio, which measures inequality by comparing incomes of the richest 10% of a nation to the poorest 10%, declines significantly when accounting for government transfers and taxes. This would imply that the government has been effective in reducing income inequality. Additionally, the gap between the 2 ratios (including/excluding taxes and transfers) has widened in recent years, further confirming the efficacy of taxes and transfers in reducing the impact of income inequality.



Source: Singapore Department of Statistics

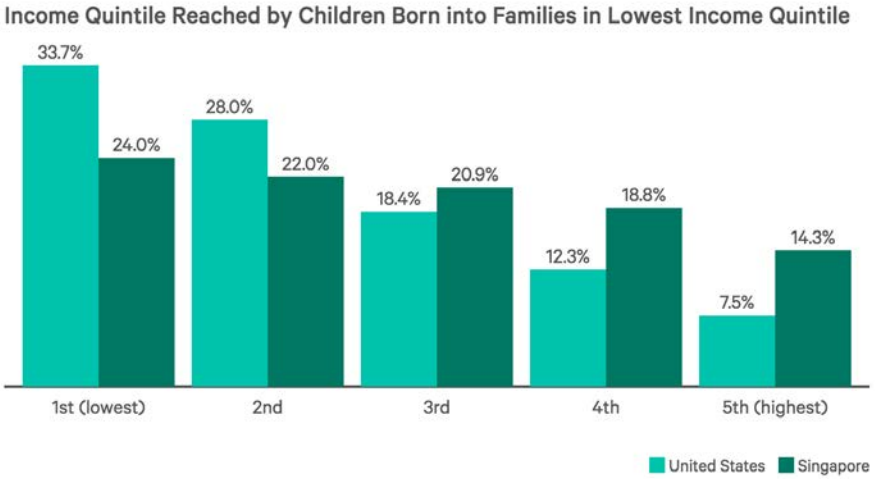
International Comparison: How Does Singapore Compare to Other Countries?

Singapore has a similar level of income inequality as other rich nations and Asian nations, judging by its Gini coefficient, which is a commonly used measure of relative wealth or income distribution. While the country has less income inequality than the United States, China and India, it is significantly more unequal compared to South Korea and Japan. It is also worth noting that the Gini coefficients from other rich nations such as the United States, U.K., Australia and Japan decreased more significantly after accounting taxes and transfers compared to Singapore's. This suggests that these governments might have done a better job containing income inequality through taxation and redistribution.



Sources: OECD, Singapore Department of Statistics

While Singapore does not have the most equal income distribution, there is reason to believe its economy is still relatively meritocratic. For example, a study by the Ministry of Finance found that there is more intergenerational income mobility in Singapore compared to countries including the US, UK, Denmark and Canada. In particular, the study found children born into the poorest families in Singapore were more likely to become top 20% income earners themselves than poor children from other countries. This income mobility suggests that Singapore's economy provides better opportunity for all of its citizens.



Source: Ministry of Finance – Income Growth, Inequality and Mobility Trends in Singapore

Conclusion

The picture of income inequality in Singapore is complicated. On one hand, the country has seen a significant income gap between its richest and poorest residents grow in dollar terms in recent years. On the other hand, Singapore has experienced dynamic growth, which has benefitted all workers, with low-income individuals experiencing faster wage growth than high-income individuals. Additionally, there is reason to believe government measures have reigned in income inequality to some degree, though other countries have been more successful at this. Finally, while Singapore has room for improvement, it compares well to some other major countries in terms of income inequality and mobility. Like any other country with an economy based in capitalism, Singapore will have income inequality. Available data suggests that while the country should monitor and could continue to improve its distribution of income, it is heading in the right direction.

Study highlights:

- Income Gap: The income gap seems like it has increased in absolute dollar terms, but has actually improved as low-income workers have experienced the fastest wage growth since 2007.
- Middle of the Pack: Singapore has lower income inequality than U.S. and China, but higher income inequality than South Korea and Japan.
- Intergenerational Mobility: Singapore has shown better intergenerational income mobility compared to other developed nations like the U.S. and the U.K.

Discussion:

1. Explain some possible causes for the rise in income inequality in Singapore.

   Guiding questions:
   - *How has the structure of Singapore changed in the last few decades?*
   - *Do you think the nature of the Singapore economy has contributed to these changes?*

- Changing structure of the Singapore economy from a low skill based country to a technology driven economy
- Aging population
- Small & open economy –foreign worker depress lower wages + foreign talent shift up the higher wage →gap widens

2. Why is rising income inequality a cause of concern?

   Guiding questions:
   - *What are the short term consequences of income inequality?*
   - *What are the long term consequences of income inequality?*

Increasing income inequality may negatively affects social welfare through
- reduced educational and vocational opportunities for those in lower income groups, poorer health, lowered life expectancy → situation that can reduce workers' efficiency, diverting resources away from productive endeavors like saving and investment.
- strain social cohesion and may impose economic costs on the economy.

SECTION 2 – Case Studies

Mini Case Study 1

[Suggested Answer on Page 5-17T]

Country	GNP per head				Population 1980 (millions)	No. of years to double population
	1980 (US$)	Average Annual Growth 1960-1980 (%)	Projected Growth 1980-1990 (%)			
			High Forecast	Low Forecast		
Malaysia	1620	4.3	6.0	4.3	13.9	36
Singapore	4430	7.5			2.4	59
Brunei	10,640	8.4	4.0	2.9	0.2	29
Sri Lanka	270	2.4	2.1	1.0	14.7	32
India	240	1.4			673.2	28
Indonesia	430	4.0			146.6	34

Questions

(a) (i) Which country had the highest standard of living in 1980 and why? [2]

(ii) Would you have expected the GNP per head of Sri Lanka in 1960 to have been higher or lower than that of India? Explain your answer. [3]

(iii) Which country is expected to experience the greatest projected rate of population increase? Explain your answer. [2]

(iv) Account for the differences in the level of GNP per head. [4]

(b) What evidence is there to suggest that in the future, people living in Singapore will become better off than residents of Brunei? [4]

Mini Case Study 2
[Suggested Answer on Page 5-18T]

Economic Performances of Germany and France

Table 1: Germany's Macroeconomic Indicators

Germany	2003	2004	2005	2006	2007
Inflation rate (%)	1.5	1.6	1.2	2.0	2.3
Unemployment rate (%)	9.3	9.8	10.6	9.8	8.4
Real GDP growth (%)	-0.2	1.2	0.8	3	2.5
Current A/C balance (% of GDP)	2	4.7	5.2	6.1	7.5
Current A/C balance (Billion Euro)	47.3	77.9	95.8	116.1	181.9
Government Budget (% of GDP)	-4	-3.8	-3.3	-1.5	0.1
FDI (US$ m)	32398	-10195	41943	55199	50932
Expenditure on health (% of GDP)	10.8	10.6	10.7	10.6	NA
Life expectancy at birth (years)	78.6	79.2	79.4	79.8	NA

Table 2: France's Macroeconomic Indicators

France	2003	2004	2005	2006	2007
Inflation rate (%)	2.1	2.0	1.8	1.6	1.5
Unemployment rate (%)	9	9.3	9.3	9.2	8.3
Real GDP growth (%)	1.1	2.5	1.9	2.2	2.2
Current A/C balance (% of GDP)	0.8	0.6	-0.6	-0.7	-1.2
Current A/C balance (Billion Euro)	10.3	-4.4	-30.9	-32.6	-28.5
Government Budget (% of GDP)	-4.1	-3.6	-3	-2.4	-2.7
FDI (US$ m)	42538	32585	84887	78198	157974
Expenditure on health (% of GDP)	10.9	11.0	11.1	11.0	NA
Life expectancy at birth (years)	79.3	80.3	80.2	80.9	NA

Source: www.oecd.org

Questions

(a) Describe the trend in France's GDP from 2004 – 2007. [1]

(b) (i) Describe the trend in the government budget balance as a percentage of GDP in Germany between 2003 and 2007. [2]

(ii) Compare this trend with the change in the France's government's budget balance as a percentage of GDP in the same period. [2]

(c) Discuss whether the data are sufficient to assess changes in the standard of living in Germany over the period. [8]

SECTION 3 – Essays

SECTION 3A – Lower-Order Skills

1. What are the problems encountered in measuring GDP? [8]
   [Suggested Answer on Page 5-20T]

2. Explain the necessary information an economist would require to determine whether the standard of living of an economy has improved. [10]
   [Suggested Answer on Page 5-21T]

SECTION 3B – Higher-Order Skills

1. In 2011 Singapore's GDP at 2005 prices grew by 4.9%, the total population grew by 2.5%, inflation (as measured by the consumer price index) was 5.2% and overall unemployment stood at 1.9%.
   Source: http://www.singstat.gov.sg/stats/latestdata.html, accessed 30 January 2013

   Discuss the limitations of these statistics in both assessing the change in the standard of living in the Singapore economy in 2011 and comparing it with that of other economies. [25]
   [Suggested Answer on Page 5-22T]

2. "GNP statistics are useful for comparing the economic welfare of countries like Japan and USA, but not for comparisons of economic welfare between Japan and Indonesia." Discuss. [25]
   [Suggested Answer on Page 5-28T]

3. Assess whether real GDP per capita is the best indicator to measure economic performance and standard of living in Singapore. [25]
   [Suggested Answer on Page 5-30T]

SECTION 3C – Challenging Essays

1. Examine whether a lower circular flow of income and expenditure necessarily mean a lower standard of living. [15]
   [Suggested Answer on Page 5-32T]

2. In 2009, Singapore experienced a negative growth of 1.3% and a current account surplus of US$32 billion while the United States had a negative growth of 2.6% and a current account deficit of US$378 billion.

   Discuss to what extent such economic data indicate that the standard of living for the average person in both countries had declined. [25]
   [Suggested Answer on Page 5-34T]

2017 Other JCs' Prelims - NATIONAL INCOME ACCOUNTING (H2)		
1	CJC	Savings as a percentage of GDP in Singapore has fallen from about 52% in 2010 to 44% in 2015. Discuss the likely effects of the falling savings ratio on the performance of the Singapore economy and the standard of living of the people of Singapore. [25]
2	HCI	(a) Using the circular flow of income, explain how an increase in government spending can lead to a bigger change in national income. [10] (b) In 2015, Singapore's GDP at 2010 prices grew by 2%, the total population grew by 1.2%, inflation (as measured by the consumer price index) was – 0.5% and overall unemployment stood at 1.9%. Source: Yearbook of Statistics Singapore, 2016 Discuss how far the government can use these statistics to conclude if there is an improvement in the standard of living in Singapore. [15]
3	IJC	In 2016, Singapore's GDP at 2010 prices grew by 2%, the unemployment rate rose slightly to 2.1 per cent while the inflation rate stood at negative 0.5%. The external demand, supported by both merchandise exports and services exports, grew at a slower pace of 1.6%. (a) Explain how the above economic indicators can be used to assess Singapore's economic performance. [10] (b) Assess the usefulness of the above economic indicators as measures of changes in standard of living in Singapore. [15]
4	RI	The Singapore economy is expected to grow more slowly which is typical of a maturing economy. Our population is ageing rapidly and our infrastructure needs are rising, as we seek to build new infrastructure and renew old ones to enhance our quality of life and Singapore's economic competitiveness. *Source: Budget 2017 Speech, March 2017* (a) Explain how automatic stabilisers and discretionary fiscal policy work in an economy. [10] (b) Discuss the extent to which the above trends affect both Singapore's budget position and its standard of living in the future. [15]
5	SRJC	In 2015, Singapore's GDP at 2010 market prices grew by 2%, the total population grew by 0.8%, inflation was -0.5% and overall unemployment stood at 2%. Source: http://www.singstat.gov.sg, accessed 17 August 2017 Discuss the limitations of these statistics in both assessing the changes in the standard of living in the Singapore economy in 2015 and comparing it with that of other economies. [25]
6	YJC	In 2015, the Gross Domestic Product (GDP) of the United States of America (USA) was US$17.95 trillion, and US$292.7 billion for Singapore. Using economic analysis, explain why some economies have higher GDP than others, and assess whether this necessarily means that standard of living is higher in larger economies. [25]

A Level Examination Questions – NATIONAL INCOME ACCOUNTING (H2)

1 (2009 H2)

Economic measures of the Singapore economy for 2007 indicate that GDP was S$243 billion. The current account on the balance of payments was S$59 billion in surplus.

(a) Explain how you might use GDP and balance of payments data to measure the performance of an economy. [12]
(b) Assess whether these economic indicators are the best measures of economic performance and standard of livings in Singapore. [13]

2 (2011 H2)

'The Singapore economy is open to the world, in trade and investment. This is both a matter of policy and necessity because of our size and limited resources. In 2008, our trade to GDP ratio was 360%, the highest in the world.'

Ministry of Trade and Industry, Singapore, 2009

Discuss whether the openness of the economy is beneficial or harmful to the standard of living in Singapore. [25]

3 (2012 H2)

(a) How do economist compare the economic performance of different countries? [10]
(b) Assess the extent to which Singapore's economic performance is the main determinant of its population's standard of living. [15]

4 (2014 H2)

In 2011 Singapore's GDP at 2005 prices grew by 4.9%, the total population grew by 2.5%, inflation (as measured by the consumer price index) was 5.2% and overall unemployment stood at 1.9%.

Source: http://www.singstat.gov.sg/stats/latestdata.html, accessed 30 Jan 2013

Discuss the limitations of these statistics in both assessing the change in the standard of living in the Singapore economy in 2011 and comparing it with that of other economies. [25]

5 (2014 H2)

The following data relate to the Singapore economy in 2011.

	$billion
Private Consumption Expenditure	129
Gross Fixed Capital Formation	77
Government Consumption Expenditure	34
Exports of goods and services	531
Imports of goods and services	444
GDP	327

Source: http://www.singstat.gov.sg/stats/latestdata.html, accessed 30 Jan 2013

(a) Economies consist of several key sectors such as households, firms, government and the rest of the world. Explain the relative importance of these key sectors of the circular flow of income in determining the national income in Singapore. [10]
(b) Discuss the likely effects on Singapore's national income and its components when its exchange rate appreciates. [15]

6.	2017 H2	Singapore is considered to have a high standard of living, a high cost of living and a strong overall macroeconomic performance. a. Explain the link between the standard of living, cost of living and the macroeconomic performance of a country. b. Discuss the economic policies which might have resulted in Singapore arriving at this position.

Chapter 5: National Income Accounting Suggested Answers

SECTION 2 – Mini Case Study

Suggested answers to Question 1

(a) (i) Which country had the highest standard of living in 1980 and why? [2]

Brunei had the highest living standard in 1980 because she has the highest GNP per head of US$10640 and also the highest average annual growth of 8.4%.

(ii) Would you have expected the GNP per head of Sri Lanka in 1960 to have been higher or lower than that of India? Explain your answer. [3]

The GNP per head in Sri Lanka in 1960 would have been lower than that of India. The average annual growth rate for the 20-year period was nearly double that of India. Yet, Sri Lanka's GNP per head in 1980 was only US$30 (or 12.5%) higher than that of India. Therefore, Sri Lanka must have started out with a lower GNP per head.

(iii) Which country is expected to experience the greatest projected rate of population increase? Explain your answer. [2]

India will be experiencing the greatest projected rate of population increase because she takes the shortest period to double her population.

(iv) Account for the differences in the level of GNP per head. [4]

Some countries have higher GNP per head compared with other countries because of

- smaller population size
- endowed with natural resources like oil, minerals etc
- better technology, investment in capital goods
- pool of entrepreneurs
- investment in R&D

(b) What evidence is there to suggest that in the future, people living in Singapore will become better off than residents of Brunei? [4]

People living in Singapore in the future could be better off than residents in Brunei because

- the projected growth for 1980-90 is 6.0% compared to only 4.0% for Brunei
- the period taken for the population to double is 2 times that of Brunei→ GNP per head in Singapore will grow faster than that in Brunei

Suggested answers to Question 2

(a) Describe the trend in France's GDP from 2004 – 2007. [1]

General trend: GDP generally increasing from 2004 – 2007

(b) (i) Describe the trend in the government budget balance as a percentage of GDP in Germany between 2003 and 2007. [2]

From Table 1, the government budget balance as a percentage of GDP in Germany has improved [1] from deficit to a surplus [1].

Alternative answers that are accepted: Only mention 'deficit to surplus' [2] or mentioned that the budget is in deficit throughout the period, except 2007 [2]

(ii) Compare this trend with the change in the France's government's budget balance as a percentage of GDP in the same period. [2]

(Tables 1 & 2) Compared to France, both countries' budget balances have improved [1]. However, France's budget balance remains in deficit while Germany's budget balance has improved to a surplus position at the end of the period [1].

Alternative answer accepted as refinement: Germany's budget improves faster than France's

(c) Discuss whether the data is sufficient to assess changes in the standard of living in Germany over the period. [8]

Standard of Living (SOL) reflects the material and non-material well-being of the residents in a country. Some of the macroeconomic indicators presented in Table 1 & 2 and relevant information in the other extracts can be used to indicate the material and non-material well-being of Germany.

According to the data, Germany is enjoying economic growth from 2004 to 2007 (based on real GDP growth rates shown in Table 1). This would mean that Germans are experiencing higher disposal income and slowing down of unemployment which implies greater purchasing power, hence ability to consume more and better goods and services, improving their material standard of living. Moreover, the significant expenditure on healthcare (more than 10% of GDP) and the high life expectancy are evidences of more investment in Germany's healthcare services, better and more advanced medical equipment and facilities, resulting in better overall health of the German citizens, improving their non-material SOL over the period (2004-2007).

However the information largely reflects only the material SOL; more data is needed to accurately reflect the material and non-material SOL. Population growth rate is needed to determine if GDP pc increased. For instance, information about income distribution is important as an increase in income but worsening income distribution implies that only a minority experiences the increase in material SOL but not the majority of Germans. If the increase in real GDP is due to longer working hours, Germans may actually experience lower quality of life due to work-related issues. Moreover, if the high unemployment rates in Table 1 signals structural unemployment, then a significant number of Germans may suffer from lower material and non-material well-being, instead of an improvement in SOL as indicated superficially by the data given. The SOL in Germany may decline further if economic growth is achieved at the expense of a deteriorating environment (eg. pollution or destruction to the eco-system).

Overall, the data is sufficient to assess changes in material SOL in Germany, but insufficient to assess changes in non-material SOL in Germany over time. The data needs to be complemented with other non-material SOL indicators and complementary indicators such as HDI and MEW to holistically assess the changes in non-material SOL over time.

Knowledge, Understanding, Application and Analysis		
2	A well-balanced discussion that considers both thesis and anti-thesis (limitations of data in concluding the SOL). Good knowledge of SOL is shown.	4 - 6m
1	Limited discussion, reflecting a one-sided view and/or with errors that show misconception (limited understanding) of SOL	1 - 3m
E	For an evaluative judgement that reaches a conclusion/stand based upon consideration of the analysis. Evaluation should also suggest other complementary indicators for a holistic assessment of the SOL of a country.	2m

SECTION 3A – Lower-Order Skills

1. What are the problems encountered in measuring GDP? [8]

Suggested Answer

a. Illegal transaction
b. Unreported but legal transactions
c. Self-consumed output
d. Inability to differentiate between final and intermediate goods
e. Availability of data
f. Reliability of data

2. Explain the necessary information an economist would require to determine whether the standard of living of an economy has improved. [10]

Suggested Answer

Define material standard of living: the bundle of goods and services available for consumption to an average citizen

Material Standard of Living information:

- Measurement of Economic Growth: Choice between GDP or GNP with valid reasoning [Growth rate preferred (reflects relative improvement) to value of GDP or GNP]
- Population statistics to compute GDP or GNP per capita – reasoning for why per capita measurement is more reliable.
- Measurement of Inflation: Consumer Price Index over time to adjust material SOL measurement for inflation - determine real GDP or GNP – explanation of the difference between real and nominal values and its impact on data interpretation is required.
- Important to emphasise that the information required has to be over a period of time and that data from the consistent time period is required.

Evaluation of material standard of living: It only reflects the measurable/ qualitative aspect of standard of living. However, it is a potentially misleading indicator as it ignores non-income indicators which are important signal of the overall performance of an economy. Hence there is the need for non-material standard of living information.

Non-material Standard of Living (Quality of Life) information:

- Pollution data (carbon dioxide emissions per capita) reflects environmental quality that influences one's quality of life.
- Inequality trends (Gini Coefficient values) to depict extent that changes in income distribution among individuals or households within an economy deviates from perfect equal distribution. Tensions and unhappiness created with a widening income gap.
- Education levels of the population (literacy rates)
- Life expectancy data (Demography Index, mortality rate)

Conclusion:

It is hard to find a single comprehensive measurement. Suggested complements include:

- Use of Human Development Index – a composite statistic based on life expectancy, education levels and per capita GDP at PPP
- Use of Measure of Economic Welfare – adjusted measure of total national output which considers the value of leisure and the underground economy, with deductions (such as environmental damage).

An alternative is the use of Green GDP (advocated by Stiglitz) to measure environmental degradation.

Knowledge, Understanding, Application and Analysis		
L3	A comprehensive answer that considers specific data needed to measure standard of living (both quantitative and qualitative) as well as measurements that compound selected qualitative data to complement current quantitative data.	8- 10
L2	A detailed answer that considers relevant data to measure quantitative standard of living and some qualitative indicators that can be used.	5 - 7
L1	For an answer that lists some relevant data required to measure quantitative standard of living with acknowledgement of the need for data to measure qualitative standard of living without details.	1 - 4

SECTION 3B – Higher-Order Skills

1. In 2011 Singapore's GDP at 2005 prices grew by 4.9%, the total population grew by 2.5%, inflation (as measured by the consumer price index) was 5.2% and overall unemployment stood at 1.9%.

Source: http://www.singstat.gov.sg/stats/latestdata.html, accessed 30 January 2013

Discuss the limitations of these statistics in both assessing the change in the standard of living in the Singapore economy in 2011 and comparing it with that of other economies. [25]

Suggested Answer

Synopsis: Students are to briefly explain the relevance of the statistics given in the preamble to show how they help in assessing the SOL & then explain in details the limitations of these data for comparing the SOL over time and space.

Command:	**Discuss** – two sided answer. Discuss how the given statistics help/ are limited to assess the change in SOL over time/space
Content:	Compare (material and non-material) SOL over time/space
Context:	Singapore, Singapore and other economies

Introduction: Define SOL, material SOL & non-material SOL:

Standard of living (SOL) reflects the material and non-material well-being of the residents in a country. The term Standard of living (SOL) is broad and is usually examined in terms of material SOL and non-material SOL. The material SOL measures the availability of goods and services accruing to each person in the country. The non-material SOL measures the intangibles and encompasses the level of literacy rate, infant mortality rate, the quality of living environment, the level of stress level etc.

Body 1: Explain how the given statistics help to assess the change in the standard of living in the Singapore economy in 2011

The material aspects of life can be measured by the real income per head as it reflects the purchasing power. The higher the real income per head, the higher the real disposable income and purchasing power, the higher the amount of goods and services that can be purchased for consumption and hence a higher material living standard of living.

Given that the real growth rate in 2011 was high (4.9%) and the the total population growth rate was 2.5% (less than GDP growth rate) it can be concluded that real GDP has increased faster than population and hence there is an overall increase in real income per capita. This means that there is an improvement in the material living standard of Singaporeans. In other words, they should experience an increase in their purchasing power and real disposable income, and can consume more goods and services, ceteris paribus. Moreover, with unemployment rate of only 1.9%, more people will have the disposable income to spend and hence improving the overall living standard.

Although the inflation rate is a bit high which means that the cost of living is rising yet since real GDP increased (GDP is measured at 2005 prices) people would experience a higher purchasing power and hence higher material living standard. Also, a rise in country's income means an increase in tax revenues for the government which increases the government's ability to spend on items that improve household's SOL.

Body 2: Explain the limitations of these statistics in assessing the change in the standard of living in the Singapore economy in 2011.

Other factors have to be considered before we can conclude that there is a rising standard of living (both material and non-material aspects of life) in 2011.

- An increase in the real national income over time may not benefit all individuals equally if **income distribution** becomes more unequal. This may be because of the fact that Singapore faces structural unemployment because of the structural changes caused by Singapore's export driven growth. This means that while GDP per capita is rising, for some households whose members are employed in the declining sectors, their income would be rising slowly or may be stagnant or may actually be falling. The Gini coefficient is normally used to supplement the Real NYpc as it measures the distribution of income in a country. In recent years Singapore's Gini shows a rising trend and hence to comment on whether the SOL for average Singaporeans has improved or not in 2011 the Gini coefficient value needs to be checked as well.

- Another factor is the proportion of **national expenditure spent on defense.** The composition of the change in GDP needs to be taken into account when assessing the change in SOL in the Singapore economy in 2011. The expenditure on military equipment is counted exactly the same way as expenditure on consumer and producer goods in national income accounts. But it could hardly be fair to say that increased production of instruments of war increase the satisfaction of people. Ceteris paribus, the more war goods and services produced in an economy, the fewer consumer goods and services can be produced, hence lowering the material standard of living of the people. Bearing in mind this point, the trend of spending on defense must be established before we can assume an increase in living standards.

- **Component of Expenditure** is another factor that needs to be looked at before concluding that SOL has improved. The assumption that the increase in income is because of increased expenditure on domestic consumer goods may not always hold true. For example in Singapore people spend a lot in buying imports and this may actually lower GDP but this indicate better SOL. Similarly more expenditure on Investment goods may mean a better SOL in future although current SOL may be lower. Thus whether the expenditure is on Consumer goods or Investment good or imported goods needs to be looked upon before assessing the SOL.

- **Source of Growth** needs to be also looked at before commenting on SOL: In Singapore there is high dependence on FDIs and foreign labour and hence not all earnings (profits, wages & salaries) are retained by residents and may be remitted back to their home country, hence GDP growth rate may overestimate the improvement in SOL. Real GNPpc may be a better indicator to assess the material SOL of Singaporeans in 2011.

- There may be **overestimation due to shrinking of non-marketed sector** :For example as more S'pore women join the workforce, more HH services such as laundry and food preparation, are done by a hired domestic assistant or purchased in the market. These goods and services are now included in the real NYpc, and hence the

rise in GDP overstate the actual increase in output produced (and hence consumed).This also needs to be carefully adjusted.

Impact on Non-material SOL should also be looked upon to assess the overall SOL:

a) **Presence of negative Externality -** An example of a negative externality of production is pollution. An increase in real NYpc can result in greater pollution level due to the increased levels of non-environmentally friendly production. A higher pollution level if unaddressed may reduce the quality of life. So, although a larger real NYpc from increased production of goods would imply a higher material SOL, the increasing negative externality due to the increased production could result in a lower non-material SOL. Hence in concluding whether SOL in 2011 has really improved or not, it would be necessary also to consider the pollution level. Pollution levels can be measured by pollution indices such as the Pollution Standard Index (PSI). A higher PSI reading overtime would obviously imply a worsening non-material SOL. However, since Singapore's growth is not fuelled by growth of heavy or extractive industries and the anti-pollution laws are quite strictly imposed, the damage to environment is not so severe compared to other countries.

b) **Average Working Hours**: - An increase in Real NYpc could be the result of an increase in the working hours of the population. The opportunity cost of increasing working hours is leisure time. The fall in leisure time may result in more people falling ill due to being overworked as well as less likely to gain access or enjoy the available goods and services or spend time with family and friends. This may have social implications. Thus the quality of life i.e. the non-material aspect of life may be affected. Similarly the working hours may not have changed but the **working conditions** could have gotten better (or worse) which may have an impact on the non-material aspect of life as well. Hence when making comparisons the average working hours per week and their working conditions should also be considered.

Body 3: Explain the limitations of these statistics in comparing the standard of living in the Singapore economy with that of the other economies. :

Comparing the standard of living in the Singapore economy with that of the other economies may not accurately reflect the true SOL because of the following reasons.

- Since **different countries use different currencies** for their domestic transactions, there is a need to convert their real national income (real NY) to a common currency for a fair comparison. However, the exchange rate is influenced by trade i.e. export and import and even speculation which may have very little to do with the valuation of resources in the different countries. The exchange rate does not consider the relative prices of goods in both countries. Thus attempts to convert the NY statistic from one currency to another may make the conversion subjected to undesirable influences (like speculation) resulting in a distorted representation regardless whether the converted value is higher or lower than it truly should be.

  In order to reflect the true domestic valuation in the different countries, the Purchasing Power Parity (PPP) is generally used. The PPP uses the relative prices of a basket of homogeneous goods to determine the country's exchange rate. However, there may still be the difficulty of choosing a common representative of basket of goods and services as the consumption patterns of the countries in comparison may differ widely.

- **The GDP distribution may vary substantially from country to country.** For example from a survey conducted in 2008, the NYpc in Singapore was US$55,200 whereas the NYpc in Norway was US$58,600. From the figures it could be argued that the SOL of an average person in Norway is valued at about US$3,400 (or 6.14%) higher than the average person in Singapore. However, the Gini coefficient for Singapore is 0.48 whereas for Norway 0.25. Taking the Gini coefficient into consideration to supplement the NYpc in making SOL comparisons, it is evident that it is very probable that a greater majority of the Norwegians has access to the reported NYpc whereas the same cannot be said for the Singapore case due to the relatively greater unequal income distribution. This when making comparisons of SOL. between countries the Gini coefficient should be employed to supplement the conclusions drawn from the Real NYpc.

- **The composition of GDP may also vary from country to country and affect SOL both in the SR & LR.**When making comparisons the composition of GDP must be looked at to determine whether the expenditure is made more on the consumer goods or on investment goods as this also affects the current & future SOL. Similarly percentage of expenditure made on defence will also affect SOL.

- Statistics like Real GDPpc ,inflation rate, unemployment figures also do not convey the non-material aspect of **SOL** and hence when making comparisons between countries **data of working hours, presence of external costs** measured by PSI and like needs to be looked upon.

- Also, when comparing SOL across countries difficulties may **arise because of measurement issues** due to :

  Changes in the statistical coverage, reliability of data, different accounting conventions adopted by countries Different countries may use different accounting definitions and conventions in a particular year which makes conclusions about SOL less reliable. For example in some countries, certain items are treated as transfer payments or income received not from productive activity involvement (& therefore omitted from the accounts) while other countries treat the same item as income to be included in the accounts.

  Similarly differing amounts of marketed output make comparisons difficult across countries. For e.g. in the US, the self-consumed items grown by farmers are included in the “non-marketable” items. In the third world countries where self-sufficiency is common, self-consumed products normally remained unrecorded. In this respect, the inclusion of the value of self-consumed items would increase the NY statistic for the US whereas it has no impact at all for third world countries’ NY statistics. However, it could not be said that there is no well-being improvements in the third world countries from self-consumed items (assuming they are of the same nature and amount) as much as those in the US, even though these are unrecorded. In less developed economies, self-consumed output, payments in kind and do-it-yourself work are significant towards well-being despite often being unrecorded and should be considered in SOL comparisons between countries.

Conclusion

Although Singapore's GDP growth rate is positive, population growth rate is lower than the GDP growth rate, inflation is low and more jobs are created, it **DOES NOT** necessarily mean better SOL of Singapore over time or space. These data may show that there is an improvement in material living standard, however, we need more information like income distribution ,number of hours worked ,presence of negative externality before we can ascertain it more accurately. Moreover, it fails to measure the non-material aspects of life. Other indicators like measure of welfare (MEW), physical quality of life (PQLI) and human development index (HDI) are needed to supplement the above statistics to measure the SOL in a country as well as to compare across countries.

For example MEW is an adjusted measure of total national output, including only the the *Measure of Economic Welfare* (MEW) to better understand the relationship between economic growth and welfare consumption and investment items that contribute directly to economic well-being.

The measure is derived as additions to gross national product (GNP), including the value of leisure and the underground economy, and deductions such as environmental damage. It is also known as net economic welfare (NEW).

MEW = NNP + value of leisure activity + value of underground activity – costs of pollution – cost of disamenities.

NNP is used so as to exclude depreciation. Items which contribute to welfare are added such as leisure activities. More leisure activities may actually result in lower production. Items which reduce welfare are deducted such as pollution, criminal offences and stress. However, in reality, these items are difficult to compute due to a lack of information.

Despite the inherent shortcomings and limitations, the above statistics are nonetheless to a certain extent useful indicators for comparing SOL both over time and space. But, they may give a truer picture when making comparisons between developed countries because of their greater similarities than between developed and developing countries because of their greater differences. These statistics need to be also complemented with other statistics like Gini - coefficient, working hours, PSI readings etc. to get a better picture.

Knowledge, Understanding, Application and Analysis		
L3	A comprehensive/balanced analysis that shows a good depth of knowledge of the usefulness & limitations of the given statistics in comparing SOL over time and also between countries (with examples). Awareness that the statistics may be useful in comparing SOL over time and between similar countries but there are still common problems in using these statistics to compare SOL.	15 – 20
L2	For an analysis that displays some knowledge of the usefulness and limitation of the given statistics in comparing SOL **over time OR over Space.** Answer did not clearly explain both time and space difficulties .(Not elaborated with examples)	9– 14
L1	Answer shows lack of understanding of question requirement, e.g. listing of uses of the given statistics. Some knowledge of concepts but containing errors or inaccuracies.	1 – 8
E3	An evaluation/conclusion that is supported with analysis eg. a brief discussion on the other composite indicators that can be used instead of the ones mentioned in the question..	4 – 5
E2	An evaluation/conclusion that is not supported by analysis eg. mere mention of preference or inclination to the arguments posed without explanation.	2 – 3
E1	For an answer that gives unsupported evaluate statement(s) about the limitations of statistics in assessing changes in SOL over time and space.	1

2. "GNP statistics are useful for comparing the economic welfare of countries like Japan and USA, but not for comparisons of economic welfare between Japan and Indonesia." Discuss. [25]

Suggested Answer

Command:	**Discuss** – a two sided answer should be given. Discussions on whether GNP statistics are useful/not useful for comparing economic welfare between 2 developed countries/1 developed and 1 developing country
Content:	Compare (material and non-material) SOL over space (developed countries, between developed and developing countries)
Context:	Comparing SOL between 2 developed countries – Japan and USA Compare SOL between developed and developing countries – Japan and Indonesia

a. Define GNP. State that one of the most important uses of GNP statistics is to compare economic welfare between countries.

b. Define economic welfare - a concept that aims at providing a measure of the living standards of the population as well as the well-being of the country. This concept looks at the material and non-material aspects of life.

c. State that Japan and the United States of America are examples of developed countries whilst Indonesia is an example of a developing country.

d. Briefly comment that GNP statistics can be quite useful for comparing the economic welfare between developed countries as there tend to be a direct relation between GNP and SOL. However, the usefulness of GNP statistics is limited when comparing developed and developing countries. This is attributed to the greater similarities between developed countries and greater dissimilarities between developed and developing countries in terms of:
   - development levels;
   - coverage of items;
   - sources and reliability of data;
   - sizes of marketed output;
   - quality of output produced;
   - less unequal income distribution, etc.

   (Note that the context of Japan and Indonesia should be brought in the explanation of the dissimilarities for L3 mark)

e. However, the extent of the usefulness of GNP statistics in making comparisons between developed and developed countries or developing and developing countries may be affected more by the following reasons:
   - consumption patterns;
   - differences in defence spending (composition of GNP expenditure);
   - non-material factors i.e. quality of life e.g. conditions and hours of work,
   - negative externalities, etc.

   *(Students should raise common problems in using GNP statistics to compare SOL over space. **Note** that the contexts of Japan and USA/Japan and Indonesia should be brought in for a L3 mark. Students should explain the similarities/ dissimilarities of the countries which makes the GNP statistics useful/less useful when comparing economic welfare over space.)*

f. Conclusion.

Despite the inherent shortcomings and limitations, GNP statistics are nonetheless to a certain extent useful indicators for comparing economic welfare. The statistics may give a truer picture when making comparisons

between developed countries because of their greater similarities than between developed and developing countries because of their greater differences.

Knowledge, Understanding, Application and Analysis		
L3	A comprehensive/balanced analysis that shows a good depth of knowledge of the usefulness & limitations of GNP statistics in comparing SOL between countries. Awareness that although GNP statistics may be useful in comparing SOL between similar countries than between dissimilar countries, there are still common problems in using GNP statistics to compare SOL over space.	15 – 20
L2	For an imbalanced/one-sided analysis that displays some knowledge of the usefulness of GNP statistics in comparing SOL between similar countries as opposed to comparing SOL between dissimilar countries.	9 – 14
L1	Answer shows lack of understanding of question requirement, e.g. listing of uses of GNP statistics. Some knowledge of concepts but containing errors or inaccuracies. Answer did not distinguish between the type of countries mentioned	1 – 8
E3	An evaluation/conclusion that is supported with analysis eg. a credible explanation of the preference or inclination to the arguments posed or the difficulty in finding the correct balance between the two arguments.	4 – 5
E2	An evaluation/conclusion that attempts to support with analysis eg. mention of preference or inclination to the arguments posed with undeveloped explanation.	2 – 3
E1	For an answer that gives unsupported evaluate statement(s) about the usefulness of GNP statistics between countries.	1

3. Assess whether real GDP per capita is the best indicator to measure economic performance and standard of living in Singapore. [25]

Suggested Answer

Command:	**Assess** – 2 sided answer with an evaluative judgement
Content:	Compare (material and non-material) SOL and economic performance (4 macroeconomic goals) over time
Context:	Singapore

Intro:
Define GDP, Define Real GDP per capita, state assumptions, context.
Explain economic performance of a country.

Body:
Thesis:
Yes it is the best indicator.
- It measures the economic growth of an economy.
- Most commonly used indicators by most nations to judge the economic performance and standard of living.
- Growth can be the used as the only measure for economic performance of a country, as it is the most important.
- Material comfort is measured by the goods, services, and luxuries available to an individual, group, or nation.
- A rise in GDP indicates economic growth (better economic performance) also showing the extent to which more goods and services are becoming available to the Singaporeans over the years due to increase in real disposable income and purchasing power of Singaporeans, thus raising the material standard of living as well.

Anti Thesis:
No. Real GDP per capita does not tell us anything about
- Unemployment rate
- Inflation rate
- Balance of payment
    - o Current Account
    - o Capital Account
- Budget balance

To have an accurate idea of economic performance in an economy, you would need all these indicators: unemployment rate, inflation rate, current account balance, capital account balance, budget balance.

Also, give limitations in using GDP as an indicator of non-material standard of living & economic performance overtime in Singapore.

→ Give and explain the problems involved in calculating GDP
- o Problems in measuring the GDP figures
- o Problem of non-reported and non-marketed transactions
- o Illegal transactions
- o Omission of legal but unreported transaction
- o Issue of availability of data

→Real GNP would be a better indicator to judge the performance of the open economy like Singapore as the net factor income from abroad can be accounted for.
→ The living standard of a country should be a consideration of both material and non-material aspects
→Non- material part of SOL is not accounted for by the GDP per capita data

- Even if Real GDP per capita rises, it does not mean the standard of living in Singapore has risen. The following factors have to be taken into consideration to measure standard of living overtime:
    a. Distribution of income
    b. Averag working hours
    c. Externalities
    d. Qualitative change of goods

Evaluation

To get a good measure of the material SOL, it is better to use **real GNP per capita**. Despite having many shortcomings, the economic indicator mentioned is still the most relevant indicator measuring the economic performance and SOL.However, other indicators are useful to **complement** the GDP figures such as **Unemployment rate, Inflation rate, BOP**, **Gini Coefficient**, **PSI,** and indicators of non-material SOL like **MEW, HDI, GPI** and **GNH** index.

→Ranking of other indicators which best suits Singapore context and explain why.

*(**Note**: Answers should be contextualized, and not just theoretical regurgitation from the lecture notes)*

Knowledge, Understanding, Application and Analysis		
L3	A comprehensive/balanced analysis that shows a good depth of knowledge of the usefulness & limitations of real GDP per capita statistics in measuring SOL.	15 – 20
L2	For an imbalanced/one-sided analysis that explain & elaborate on the usefulness of real GDP per capita in measuring SOL. Or able to explain the usefulness & limitations in using real GDP per capita to compare SOL but inadequate elaboration.	9 – 14
L1	Answer shows some understanding of the lack of question requirements but contains errors or inaccuracies. Weak elaboration of answers.	1 – 8
E3	An evaluation/conclusion that is supported with analysis eg. a credible explanation of the preference or inclination to the arguments posed or the difficulty in finding the correct balance between the two arguments.	4 – 5
E2	An evaluation/conclusion that attempts to support with analysis eg. mention of preference or inclination to the arguments posed with undeveloped explanation.	2 – 3
E1	For an answer that gives unsupported evaluate statement(s) about whether real GDP per capita is the best indicator.	1

SECTION 3C – Challenging Essays

1. Examine whether a lower circular flow of income and expenditure necessarily mean a lower standard of living. [15]

Suggested Answer

Command:	**Examine**– 2 sided answer which discuss whether a lower circular flow of income and expenditure necessarily mean a lower / not necessary lower standard of living.
Content:	Circular flow of income and expenditure, material and non-material SOL
Context:	No context, but real world examples should be given

Standard of living in a society is a broad concept that refers to the well-being of the population. It encompasses both the quantitative and qualitative aspects of life. The quantitative aspect focuses on the material well-being whereas the qualitative aspect focuses on the non-material well-being.

A lower circular flow of income and expenditure can imply deterioration in the quantitative aspect of standard of living since it indicates a lower amount of goods and services people can enjoy. However, it does not conclusively mean that the quantitative aspect of standard of living is lower. In fact, it is possible for SOL to be higher or remained at the same level despite the lower circular flow of income and expenditure, given a more accurate data collection, a lower population (hence similar/ higher GDP per capita), a lower price level, and a more equitable distribution of income or an improvement in the qualitative aspect of life.

First, given that NY per capita measures the level of material well-being of the average citizen, it can be a more comprehensive indicator to measure material SOL. Hence, another possible argument that SOL may not have fallen even though the NY is falling is because the population could have fallen at a more rapid rate, culminating in an increasing NY per capita. Population in a country could have fallen because of some successful family planning program being introduced. This will subsequently lead to a higher level of quantity of goods and services available to each person on average and thus, does not necessarily mean a lower standard of living. This is **especially true for developed economies where the birth rates seem to be at record low. However, on the other hand, it seems unlikely that population will decline at a rapid rate given the modern developments in healthcare services, as evident by a low infant mortality rate worldwide.**

Second, prices could have fallen more than the fall in nominal income, resulting in a rise in real income. (real income = nominal income – price) This is especially applicable to the situation of a recession when the economy may face periods of deflation as well. It does not necessarily mean that SOL has deteriorated when real NY has fallen because real income of the people could have increased and they can buy and consume more goods and services than before.

In addition to the above quantitative aspects, improvements made in the qualitative aspects can also bring about higher non-material SOL. These include better quality of goods and services, shorter working hours, better working conditions, a more politically and socially stable society and higher quality of lifestyle, which cannot be inferred from the NY figure.

A lower circular flow of income and expenditure does not necessarily mean a lower non-material standard of living. The quality of goods and services consumed may have improved even though the NY has decreased. Such improvements in products and customer services

help bring about a higher level of satisfaction which contributes to the well being of the society. For example, although NY of a particular country may have decreased, the consumers may still get to enjoy a wider range and better quality of the goods like hand-phones and laptops etc as the producers continue to innovate in the hope of stimulating the economy. **This is highly probable given the level of high competition in the market. When the level of consumption is declining, producers may seek to develop their products instead so that they can retain their market share.**

A lower circular flow of income and expenditure does not necessarily mean a lower non-material standard of living. Non-material standard of living can also improve if shorter working hours are implemented. For instance, 5- day workweek for the civil service recommended by the Singapore government some years ago has certainly help to improve the quality of life. In addition, quality of life can also improve if the relevant authorities of the country ensure better working and living conditions in terms of safety and cleanliness. This result in higher non-material SOL

A lower circular flow of income and expenditure does not necessarily mean a lower non-material standard of living. Another aspect that can cause non-material SOL to improve despite a lower NY is a more environmentally friendly community and greener society. This can come about by a higher literacy rate and society being more aware about green issues. In addition, with a better environment, it helps increase life expectancy, bringing about higher quality of life. Regulation like clamping down on motorists emitting large amounts of fumes can also help bring about a better environment.

To conclude, a lower circular flow of income and expenditure does not necessarily mean a lower SOL. This is because the figures fall short of being good indicator in measuring the quantitative aspect. In addition, the figures have neglected the qualitative aspect. Other indicators like the **Gini ratio, pollution index and length of working hours should be supplemented to better interpret the statistics especially for standard of living**. Alternatively, **other indicators like the human development index and measure of economic welfare can be used instead.**

Knowledge, Understanding, Application and Analysis		
L3	For a developed answer that shows a lower NY does not necessarily mean a lower SOL. Answer should include both quantitative and qualitative aspects.	8-10
L2	For an undeveloped answer that shows a lower NY does not necessarily mean a lower SOL. Answer should include both quantitative and qualitative aspects. For a developed answer that shows a lower NY does not necessarily mean a lower SOL, but the answer only covers one aspect of SOL	5-7
L1	Smattering of valid points.	1-4
E3	For an evaluative assessment based on good economic analysis	4-5
E2	For an evaluation that attempts to support with some economic analysis	2-3
E1	For an unexplained assessment or one that is not supported by analysis	1

SECTION 3C – Challenging Essays

2. In 2009, Singapore experienced a negative growth of 1.3% and a current account surplus of US$32 billion while the United States had a negative growth of 2.6% and a current account deficit of US$378 billion.

Discuss to what extent such economic data indicate that the standard of living for the average person in both countries had declined. [25]

Suggested Answer

Command:	**Discuss:** 2 sided answer on whether the economic data indicate that the SOL for the average person in both countries had/ had not declined
Content:	Comparison of (material/non-material) SOL over space
Context:	Singapore, USA

Introduction: Definitions + Overview

Define standard of living (SOL):

- Material well-being: The bundle of goods and services available for consumption to an average citizen. Basic indicator is the real GDP per capita for the country.
- Non-material well-being: Intangibles/ Quality of life indicators.

Define key concepts:
Growth rate is derived from a change in GDP over time. Define GDP.
Briefly explain what current account is made of and it is part of the balance of payment.

Thesis: ↓SOL	**Anti-thesis: Not necessary**
Negative growth rate	
Real or Nominal growth rate? Negative real growth rate => fall in national output => fall in disposable income and purchasing power ie less goods and services for consumption - ↓material SOL. Composition of output? Consider the source of the negative growth is important: The negative growth in US was a result of a fall in C & I. The fall in C has a direct adverse impact on current SOL, while fall in I will only affect future SOL adversely.	Fall in X? The negative growth in Singapore was mainly due to a fall in NX by our top trading partners such as US and EU (27), not a direct fall in C so not a ↓SOL. The bundle of goods and services available for consumption to an average citizen did not fall, hence material SOL of the citizens was not affected due to a fall in C. ***Evaluation:*** *But ultimately, this would lead to a fall in RNI by k and increased cyclical unemployment as there would be a fall in derived demand for labour. This would lead to a fall in disposable income and purchasing power of citizens. This leads to a fall in goods and services consumed by citizens, leading to a ↓ material SOL.* Fall in nominal growth rates? Negative growth means a possible falling of inflation rate or even drop in GPL – lower cost of living, may mean a rise in real income ceteris paribus. This would mean a rise in material SOL.

Synthesis:
It is a more serious problem in US as compared to Singapore as the negative growth rate was worse (-2.6% as compared to -1.3%) and also the source came from ↓C & I.

Need to have other economic indicators to better assess the (material and non-material) SOL holistically.

Inflation rate
To assess the material SOL, it is important to account for the increase in the bundle of goods and services available to the average citizen. The effects of change in general price levels (eg. Inflation or deflation) should be excluded. Hence the growth rate in this case would be more accurate if it is the real growth rates compared to the nominal growth rates.

Population size
To assess the material SOL of 'an average person' – crucial to have population growth. Theoretically, if the population growth rate falls less than the growth rate, nominal/real GDPpc can improve, this means that the average citizen can enjoy a greater share of the increase in real GDP. With a higher GDPpc, real disposable income and purchasing power of the average citizen increase, material SOL can improve. Nonetheless, justify this is unlikely to happen, unless there is a large scale natural disaster or war.

Gini-Coefficient: Income Distribution
For Singapore, even though the growth rate of – 1.3% had fallen by a lesser extent than US (- 2.6%), Singapore's GINI Coefficient had increased, indicating that distribution of income had worsened. This would mean that the fall in national income had affected the majority group of wage earners (low/ middle income workers) more adversely than entrepreneurs or capital & land owners (high income workers). Hence, a fall in national income would cause the real disposable income and purchasing power of the majority of the Singaporeans to fall, leading to the fall in goods and services that are consumed by the majority of Singaporeans. With a higher income inequality in Singapore, the overall material SOL would fall for larger proportion of Singaporeans as compared to the Americans in the USA.

Current Account Surplus (Singapore)

If the bulk of the current account of surplus is due to high X, it does not really contribute to SOL in terms of more consumption of goods and services.

If the current account surplus is due to fall in M, material SOL may worsened if there was a decrease in the availability of imported consumer goods.

In the case of Singapore, a surplus might not mean the economy has performed better as we have surpluses for most of the years.

Evaluation
But need more info regarding the <u>change</u> – In 2009, this probably was a shrink from previous years since there was a fall in global income.
Singapore is an export-driven economy with X=2.5 GDP and a fall in trade will mean a fall in SOL due to higher unemployment rates when NI shrank.
This indicator should be used together with GDP growth and unemployment rate figures for a more holistic measurement.

Synthesis:
On the other hand, assuming this surplus is due to a BOT surplus leading to higher AD and thus an increase in NI by k –A higher NI → higher real disposable income and purchasing power → higher amount of goods and services available for the average citizen for consumption → material SOL has improved. But the fact is there is a negative growth rate, material SOL more likely to deteriorate.

Current Account Deficit (US)

This suggests that US was not doing well in her export market or/and she was importing too much.
If imports were mainly consumer goods - ↑SOL and not deteriorated.

Evaluation
A prolonged current account deficit indicates a loss in export competitiveness and will decrease NI and rising structural unemployment and thus ↓SOL. SOL falls when NI shrank. This indicator should be used together with GDP growth.

Synthesis:
US main engine of growth is its domestic market rather than its external demand. Nonetheless, it is crucial for US to restructure the economy to reap the benefit of their CA, rather than clinging on to those in which they have lost to low-cost economies. A healthy balance of payment is crucial to a country's SOL.

Note: Contextualize for L3 answers

Intangible or Quality of Life

Need more information on the non-material well-being: indicators regarding quality of life.

Generally, negative growth/recession will mean ↓non-material SOL since it is stressful without a job involuntarily.

In assessing SOL, economists can use a wide range of indicators including number of consumer durables such as TV per household, energy use per household and measurement of non-material aspects such as infant mortality rates. Measurement of SOL such as Net Economic Welfare (NEW) seeks to give a fuller picture of SOL by adjusting GDP figures to take into account other non-material factors which have an impact on the quality of people's lives. Factors which improve non-material SOL such as increased leisure hours are added to the GDP figure, whilst factors which reduce non-material SOL, including rising crime and pollution levels, are deducted. However, in practice, it is difficult and expensive to measure the value of non-marketed economic 'goods' and 'bads'. The Human Development Index (HDI) is another measurement of SOL which take into account real GDP per head (PPP$), life expectancy at birth and educational attainment as measured by adult literacy. These are included to show that people's welfare is influenced not only by the goods and services available to them but also by an increase in their choices and abilities to lead a long and healthy life and to acquire knowledge.

Conclusion

The negative growth rates in both countries generally indicate that the material SOL had declined. However, the extent of the decline in SOL can be influenced by the relative fall in the various components of AD/composition of fall of AD. A greater fall C in US versus fall in net export in Singapore in 2009 would have different repercussion on SOL in the two countries respectively. Any conclusion on SOL for the average person in both countries must be made after taking into consideration of other macroeconomic indicators such as inflation and unemployment rate as well as non-material aspects used in alternative measurement of SOL such as Net Economic Welfare and Human Development Index (HDI).

Knowledge, Understanding, Application and Analysis		
L3	15-17 (Lower)	• Able to address all requirements of question with **balance** coverage of factors affecting SOL in **both** countries • Ability to link **both** indicators (negative growth rate & current account) to SOL with **elaboration**.
	18-20 (Upper)	• For a **good** answer that is able to describe and analyse related concepts in a precise, logical, reasoned manner. • New illustrations to the material discussed and **application to relevant current situations.** (e.g. context of recession in 2009)
L2	9-11 (Lower)	• Conceptual framework **lacking in breadth**: address question **partially** with regards to only **ONE** economic indicator: either negative growth or current account; or focus mainly on **ONE** country, Singapore or US (**Imbalanced** approach) • Analysis **lacking in depth**: fail to provide Economic analysis linking fall in growth rates & current account to SOL (ie only relate ONE indicator to SOL).
	12-14 (Upper)	• Ability to discuss **both** economic indicators and how it affects SOL in **both** countries (sufficient breadth) • Ability to link **both** indicators (negative growth rate & current account) to SOL
L1	1 - 8	• Answer is **generic** without application to **context** of question • Analysis **lacking** in elaborations and clarity.

Level	**Descriptors**
E3 4-5	Judgment based on sound economics analysis, synthesis & evaluation on whether SOL has declined in the context of Singapore & US
E2 1-2	Judgement that attempts to support with some explanation and analysis.
E1 1	Judgement that is unsupported about whether SOL has declined