Econ-Hub

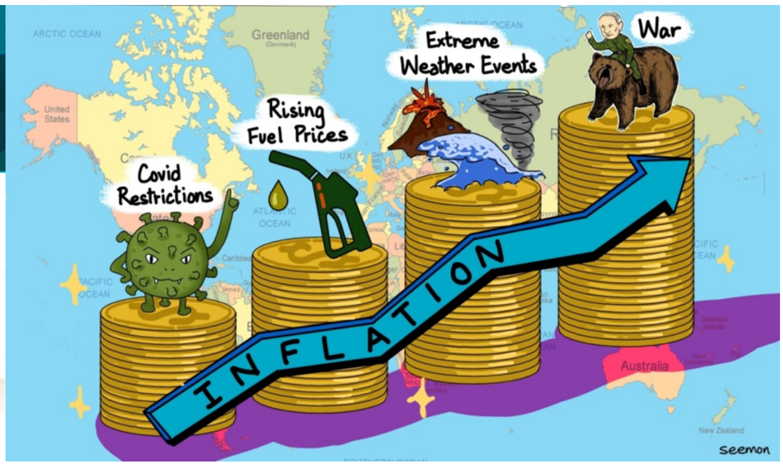
Combined Class Series

[Theory | Application]

Unit [**7**], Chapter [IV]

Price Levels & Inflation Analysis

***2024 A/L** edition*



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Learning Keys

Essentials 05

(01) What in meant by 'Price Stability'

Price stability refers to the process of maintaining general price levels relatively stable without unanticipated, extreme and frequent fluctuations. **Theoretically** price stability is where the **rate of inflation is zero.** Generally, policy makers refer to price stability as attainment of **'low and stable inflation'.**

In other words, this is a situation where the general price levels mainly of consumer goods remain relatively unchanged or if subject to change such change takes place at a rate where it does not affect the routine economic decisions of households and business units of an economy.

Concept Outline:

PRICE [P]

Price refers to the money cost of a good, service or factor (asset). Price is measured in monetary units per unit of the good. The term price is also defined as the monetary value of the satisfaction received when consuming or using a good or service to fulfill certain need. In the study of economics price is classified in to two main categories or is presented in two different methods as given bellow.

- Relative Price
- Absolute Price

RELATIVE PRICE

Relative price is presenting the price of one product or good in comparison to the price of another good. This represents the price ratio or price relationship between two goods. This is an important dimension of price specially in the process of making efficient consumption and production decisions (resource allocation decisions) with regards alternative choices.

As an example, if the price of a pen (Pp) is Rs.20.00 and the price of a book (Pb) is Rs.40.00. The price of a book is twice as a pen, or a pen is half the price of a book.

ABSOLUTE PRICE

Absolute price is presenting the market price of different goods and services individually. This price represents how low or high is the price of a certain good or service. When the weighted average, absolute price of all goods are estimated and presented using the technical method of an Index (price index) it is known as 'General Price Level'

It is also noteworthy, even if relative price between two goods has remained the unchanged, the absolute price may in fact have changed. Therefor relative price is deemed not suitable in the process of estimating price movements or changes.

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(02) What is meant by a 'Consumer Price Index' ?

- A consumer price index is a statistical instrument which uses 'index numbers' to indicate the weighted average price change of a basket of goods and services which represent all goods and services consumed by consumers of a given country, by collecting price of such goods and services in different markets, over a period of time.
- The base year index number is generally 100 (e.g. NCPI; 2013 = 100)
- It is broadly termed as 'the general price level (GPL) or the general price index (GPI), presented on percentage basis from one period of time to another.
- The general price level is commonly identified as an index of **Cost of Living** of a given economy, while also indirectly affecting the **Purchasing Power** of consumers and the **Standard of Living** of the general public.

Outline: **Consumer Price Index**

In computing the average value, the prices of different goods and services included in the basket are weighted by their importance to consumers based on data from a consumer income and expenditure survey. As an example, by each commodity's share of total consumer expenditure per month or any other basis. The base year index number is generally 100 (e.g. NCPI; 2013 = 100)

While the general price level is an index which represents price levels of all goods and services, the absolute price of a certain goods may increase, while the price of other products may decrease and the absolute price of some goods could remain unchanged, during the period of time under consideration.

The general price level of an economy is measured using **'Price Indexes'.** Identifying more permanent and long-term trends or changes in the general price levels is an important prerequisite in formulating medium and long terms economic policies strategies.

The purposes of preparing a CPI

- It is an indicator to measure the changes in the general level of consumer prices and used as one of the key indicators of inflation.
- Consumer Price Index is also used for socio-economic analysis and policy purposes, mainly in the determination of monetary and income policies.
- It is used in the analysis of the trends in wages and other monetary incomes, for indexation of salaries and wages etc.
- Consumer price index is also used to deflate the current values in National Accounts to obtain real values and therefore, a major determinant of the GDP deflator, which is a more comprehensive indicator in the overall inflation in a country.

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(03) **List** the measures (indexes) currently used in Sri Lanka to indicate the changes in general price level

- CCPI: Colombo Consumer Price Index (2013 = 100)
- NCPI: National Consumer Price Index (2013 = 100)
- GDP Deflator: Gross Domestic Product Implicit Price Index
- PPI: Producer's Price Index (2013 Q4 = 100)

Outline: **Price Indexes**

National Consumer Price Index - NCPI

The latest official Consumer Price Index (CPI) released by the Department of Census and Statistics (DCS) is National Consumer Price Index (NCPI).

NCPI has been released monthly commencing from November 2015 with a time lag of 21 days. The NCPI will have weights based on Household Income and Expenditure Survey (HIES) in 2012/13 and will reflect new methods consistent with **international best practices.** Now DCS estimates the rebased NCPI, 2021 is the second series after its first series with the base year 2013.

Update: Official **'Consumer Price Indices (CPIs)'**

The Department of Census and Statistics (DCS), the compiler of official Consumer Price Indices (CPIs) in Sri Lanka updated the base year of official CPIs from the base year of **2013 to 2021**. Rebasing of CPIs at regular intervals in line with international standards and best practices is essential to reflect contemporary consumer spending patterns in a more accurate manner

The weight structure of both CPIs is based on the **Household Income and Expenditure Survey (HIES)** conducted by the DCS in **2019,** Accordingly, the weight reference year of both **CCPI (2021=100)** and **NCPI (2021=100)** is 2019.

Rebasing leads to upgrades of main features of the CPIs especially the weight structure, which indicates the prominence or the representativeness of goods and services in the basket of goods and services. Further, the composition of the basket would also get revised with addition of new items and removal of existing items based on the significance of latest consumption patterns.

Key Comparisons [NCPI Vs. CCPI]

Key Features of Official Consumer Price Indices

Features	CCPI (2013=100)	CCPI (2021=100)	NCPI (2013=100)	NCPI (2021=100)
Index Reference Year	2013	2021	2013	2021
Weight Reference Year	July 2012 – June 2013	January 2019 – December 2019	July 2012 – June 2013	January 2019 – December 2019
Geographical Coverage	Urban areas of Colombo District	Urban areas of Colombo District	All Provinces in Sri Lanka	All Provinces in Sri Lanka
Size of a Household Unit	3.9	3.8	3.9	3.7
Average Monthly Consumption Expenditure (Rs.)	Rs. 60,364.73	Rs. 91,880.34	Rs. 32,142.69	Rs. 50,728.60
Value of One Index Point	603.65	918.8	321.43	507.29
Major Groups	12	12	12	12
Subgroups	105	105	105	105
No of Items	392	426	407	485
Percentage of Total Weight				
Food	28.24	26.23	44.04	39.22
Non-food	71.76	73.77	55.96	60.78
Price Collection Centers	14	10	3 per District Town	3 per District Town

Source: Department of Census and Statistics

Evolution of CCPI [Base year: 1952 – 2013]

Components	CCPI (1952 = 100)	CCPI (2002 = 100)	**CCPI (2006/07 = 100)**	**CCPI ** (2013 = 100)**
Base Period	1952 (Outdated)	2002 (Updated)	2006/07 (Updated)	**2013 (Recent)**
Reference Population	Limited to Working Class	All Urban Groups of Colombo	All Urban Groups of Colombo	All Urban Groups of Colombo
Geographical Coverage	Colombo City (Narrow)	Colombo District (Wider)	Colombo District	Colombo District
Sample Size	455 Households (Lower)	1300 Households (Higher)	1200 Households	1200 Households
Price Collection Centre's	07 (Few)	12 (Increased)	14 (Increased)	14
No of Items	125 (Low)	334 (Increased)	373 (Increased)	**392 (Increased)**
Total Basket Value	702.24	17,996.38	27,972.11	**60,364.73**

Producer Price Index [PPI]

The department of census and statistics (DCS) introduced the Producer's Price Index, in place of the Wholesale Price Index (WPI 1974 = 100), commencing from mid-2015. The DCS believes the PPI (2013 = 100) is more realistic and flexible approach to estimate farm gate price movements.

Reflecting international best practices, the weight, price, and index references have been updated in 2021 and now the base year is 2018 Q4 (PPI = 2018 Q4).

Feature	PPI [2013 Q4 = 100]	PPI [2018 Q4 = 100]
1. Weight Referances	ASI 2010	ASI 2016
2. Price References	2013 Q4	2018 Q4
3. Geographical Coverage	Western, Southern & Central Provinces	Western, Southern, Central, North Western, North Central & Sabaragamuwa Provinces
4. Total Sections	Agriculture, Manufacturing & Utility	Agriculture, Manufacturing & Utility
5. Total Sub Divisions		
I. Agriculture	2	3
II. Manufacturing	13	14
III. Utility	2	2
6. Sections Contribution to total weights		
I. Agriculture	27%	12%
II. Manufacturing	67%	85%
III. Utility	6%	3%

Key Features (Facts):

- Domestic producers are able to accurately identify the average price movements of their output over a period of time
- Used as a more realistic and updated price index in the process of GDP deflation, complementing the rebasing efforts of national accounting
- The PPI has replaced the Wholesale Price Index prepared by the CBSL, in the process of macroeconomic analysis
- Providing accurate and updated information, which enable efficient production or resource allocation decision
- The information provided by the PPI is critical in the process of conducting productivity analysis, evaluating business contracts, present value estimations, asset valuations etc.

GDP (or GNI) DEFLATOR:
Gross Domestic Product (or Gross National Income) **Implicit Price Index**

- This index implies the average or genera price movements of all goods and services included in the process of estimating gross domestic or national product.
- The implicit price index is derived by deflating the different categories of goods and services included in gross national product under current prices using a collection of different price indexes, while the overall base year for this process was considered as 2010 = 100 and now its 2015 = 100, after the rebasing process.
- This is treated as an additional index that can be used to measure the inflation level within the economy.

REF (Background Knowledge): Unit 5

WAGE RATE INDEX

This is an index that measures the average changes in wage rates of employees or workers with in an economy. The wage rate index can be used effectively to compare inflation rates and the rate of increase in wage rates or salaries. In Sri Lanka two main types of wage rate indexes are prepared.

- Nominal wage rate index for workers in all wage boards
- Nominal wage rate index for central government employees

IMPORTANCE
The economic importance of real wages

- An indicator of the living standard that can be achieved through the nominal or money wage (income)
- Represents the effects of inflation on nominal wages or income.
- A bargaining instrument or tool that is commonly used in trade union discussions with the management.
- An important instrument considered in the economic policy formulation process

MEASURES & TYPES OF INFLATION

(04) What is meant by Inflation and Rate of Inflation?

Inflation refers to a **persistent** (sustained) increase in **general price level** of an economy, over a period of time (i.e. an increasing **trend** in general price levels over certain span of time). In times of inflation the general price level continuously increases, and it is not a temporary increase in price levels.

Alternatively, this is a situation where the purchasing power of the domestic currency unit, continuously decreases (real value of money decreases). Inflation is measured using the inflation rate or the rate of inflation.

It is noteworthy, even in an economy experiencing inflation, price of all goods in the economy may not necessarily increase, in fact the price of certain goods may remain relatively constant and certain others may even decrease. Inflation is discussed in context of an average price movement of all goods and services (i.e. weighted average price or general price level) and not in terms each individual product or product category. Inflation is measured using the inflation rate or the rate of inflation.

<u>RATE OF INFLATION</u>

The rate of inflation refers to the percentage (%) increase in the general price level of a given economy during a given financial year or point of time, relative to another financial year or point of time. In other words, the percentage (%) increases in the present year's price index (value) in comparison to the previous year's price index (value). The rate of inflation can be measured using the approach given below

$$\frac{\text{Present year's Price Index Value} - \text{Previous year's Price Index Value}}{\text{Previous year's Price Index Value}} \times 100$$

Key terms

[1] Inflation: A persistent or continuing tendency for the price level to rise (Powell, 1996: 222)

[2] Deflation: A persistent or continuing tendency for the price level to fall.
Broad Meaning: A reduction in the level of activity or output. In this sense, a deflationary policy reduces the level of aggregate demand (AD) of the economy.

[3] Disinflation: A sustained tendency where the rate of inflation falls over a period of time [sometimes economist prefer to use this term, i.e. disinflationary or disinflationary policy; when there is a reduction in the level of economic activity and declining aggregate demand, instead of deflationary policy]

[4] Reflation: Is the opposite of disinflationary policy; this is where economic activity and output level increases. Reflationary policy stimulates aggregate demand. In a sense, inflationary pressure is reflation gone wrong, increasing the price levels rather than real output.

(Powell, 1996: 222)

[5] Stagflation: A situation where both inflation and unemployment rise at the same time [also sometimes termed 'Slumpflation']

(Dr. Perera & Keembiyahetti, 2015: 10 | MVES Special A/L Seminar 2015)

<u>Further Terms [Analysis Tools]:</u>

- Headline Inflation
- Core (Underlining) Inflation

- **Inflation Types** [based on intensity of inflation]
    - Moderate (Creeping) Inflation
    - Galloping inflation
    - Hyperinflation inflation

- **Inflation Rate Measurement** [based on time period]:
    - Monthly Inflation Rate
    - Year on Year Inflation Rate
    - Annual Average Inflation Rate

- **Inflation Types** [based on reasons/sources]
    - Demand pull inflation
    - Supply push inflation

(05) **Distinguish** between **Disinflation** and **Deflation**

Disinflation is a situation where, the rate at which the general price level increases, tends to gradually decrease on a persistent basis.

In other wards the rate of inflation tends to decrease, while the economy may continue to experience inflation, i.e. the absolute price of goods and services shall continue to increase, but at a lower rate

Deflation refers to a persistent decrease in general price level of an economy over a considerable period of time (absolute price levels decrease).

A deflationary situation is generally a result of (AD) decreasing or contracting over a prolonged period of time and can create a number of unfavorable effects within an economy. Some of which can be given as follows.

- Discourages investments
- Macroeconomic instability
- Increases unemployment and poverty
- The optimum or the highest point of a deflationary situation is identified as an economic depression.

(06) Distinguish between **Core Inflation** and **Headline** Inflation

Headline Inflation [Topline or Nominal Inflation]

- Headline inflation refers to the ***actual increase in the general price of goods and services***, as measured by the standard consumer price indexes, before making any adjustments.
- Headline inflation indicates the rate or level of increase in the price of all consumer goods and services, during a given period of time.
- It is important to identify that headline inflation rate is subject to **temporary fluctuations,** due to changes in 'food' and 'energy' prices, caused by variety of reasons: **price changes beyond the control of the financial authority such as bad weather, external world changes, tax policy changes, supply shocks, administered prices etc.**

[B] Core Inflation [Underlining Inflation]

- The concept of core inflation is based on the idea of identifying the ***persistent non-reversible trend of price movements by separating short run fluctuations from the 'headline inflation'.***
- Since the impact of supply shocks is temporary it is inappropriate to base ***long-term inflation and demand management policies, such as monetary policy,*** on such changes without making suitable adjustments.

[Core Inflation is concept introduced by Robert J. Gordo 1975]

Outline: Inflation Rate Measurements

Headline inflation is a measure of the total inflation within an economy, including commodities such as food and energy prices (e.g., oil and gas), which tend to be much more volatile and prone to inflationary spikes. On the other hand, "core inflation" (or underlying inflation) is calculated from a price index minus the volatile food and energy components vulnerable to short run supply shocks. Headline inflation may not present an accurate picture of an economy's inflationary trend since sector-specific inflationary spikes are unlikely to persist.

ESTIMATING CORE –INFLATION

As stated above the most suitable form of inflation in formulating and implementing monetary policy is a measure of inflation which represents aggregate demand. Accordingly, many countries use core inflation.

The most common means of estimating core inflation is the ***exclusion*** or ***elimination method***. In this method a certain number of goods are eliminated from the main index on a consistent basis regularly at the end of each period and the index is re-estimated.

** In line with international standards, recent base year change (2013 = 100) and change in weights for each subgroup included in the basket of goods of the CCPI, the DCS ***excludes fresh food, energy, transport cost, rice and coconuts*** from the CCPI basket of goods when estimating the rate of core inflation in Sri Lanka.

[D] Inflation Rate Measurement [based on time period]:

[1] Monthly Inflation Rate

The monthly inflation rate measured and represented by the percentage change between the price indexes (index numbers) of two successive months.

[2] Year–on–Year Inflation Rate

Year on year (point to point) inflation rate measure refers to the process of comparing the price index (index number) relevant to a specific month or 'point' of time within a given year, with that of the index number relevant to the same month or 'point' of time in previous year.

[3] Annual Average Inflation Rate

The annual average approach to the process of analyzing inflation measures the percentage change between the average price index for 12 months of a given period or year with the average price index for 12 months of the previous period.

(Katukurundha. S, Vidudeya Economics Magazine, vol. 07/05, December 2015, PP19)

TYPES OF INFLATION RATES

(BASED ON **INTENSITY** OF INFLATION**)**

(07) Briefly explain the following

A. Moderate (Creeping) Inflation
B. Galloping Inflation
C. Hyper – Inflation

[A] Moderate Inflation

- This is a situation where a country experiences an average (moderate) and a relatively manageable rate of inflation over a long period of time [an inflation rate the CB might consider as '**Low** and **stable'**].
- In such a situation, the process of forecasting changes in general price levels becomes relatively easy (accurate) and therefore, making interest rate and investment related decisions become highly effective.
- The demand for money (liquidity preference) may increase due to the relatively stable real value of money.

[B] Galloping Inflation

- This is a situation where a country may experience relatively high rate of inflation, which may range from double to a triple digit value (10% – 100%) on **annual** basis.
- The main economic cost of such galloping rates of inflation tends to be the rapid depreciation of the internal real value of money.
- The demand for money (liquidity preference) in this situation shall sharply decrease, while money (currency) will become less attractive, but shall be accepted as a medium of exchange.

[C] Hyper – Inflation

- A situation of extremely high rate of inflation (**monthly** rate of inflation may reach double or triple digit values), where the **internal real value of money rapidly decreases** to a level where the **general public shall reject money as a medium of exchange** and may revert back to a direct barter system.
- An uncontrolled rate of inflation, which leads to an overall **collapse of the monetary economy.**

Concept Summary:

Factor	Moderate	Glopping	Hyper
Inflation Rate [Y] Yearly Or [M] Monthly	3% - 5% [Y]	10% - 100% [Y]	
Value of Money [Internal Real Value]	Stable	Reduces	
Money as a Store of Value/Wealth			
Interest Rate Volatility	Low / Stable	Increases	
Demand for Money [Liquidity Preference]	Healthy / High	Reduces	
Money as a Medium of Exchange	Preferred	Accepted	

(08) State the Negative Economic Consequences or 'Costs of Inflation' **

- Reduction in living standards, due to the increase in cost of living
- Increase in the level of absolute poverty
- Aggravate or create relative disparities in the process of income and wealth distribution, especially among fixed and variable income earners
- Creating a distortion of the economic decision-making process
- Redistribution of income from lenders to borrowers, since inflation unfavorably affects lenders.
- Unfavorable impact on the trade balance, due to the overvaluation of the foreign exchange rate.
- Weakens the export competitiveness
- Breakdown and interruptions on economic activities due to trade union (pressure group) actions
- Discouraging long term capital inflows due to the uncertainty on the future price behavior, and investments being reallocated from productive to less productive investments with more short-term gains.
- Shoe leather and menu cost

Outline: Cost of Inflation

- There will be certain distortions on **relative market price** (price signals and functioning of the price mechanism), which shall lead towards **inefficiency** in **resource allocation** and **output distribution**.
- **Fixed income** earners (pensioners, government servants, salaried workers etc) and **low-income** earning parties will be the most adversely affected due to the rapid **reduction** in their **real income** (high cost of living) caused by inflationary pressure.
- Aggravate or **create** relative **disparities** in the process of **income** and wealth **distribution,** especially among fixed and variable income earners
- Inflationary pressure causes **inefficiency** or an adverse distributional effect on borrowers and lenders engaging in **credit transactions** (benefits borrowers and disadvantages on lenders).
- **Saving** (especially long-term savings) are **discouraged**. If the nominal interest rates remain unchanged, **real interest rates** become **negative,** and savings are discouraged.
- **Long-term productive investment** will be **discouraged,** due to the highly unpredictable economic environment. While **short-term** less productive investments with high potential to earn capital gains will be **encouraged.** This will create a negative impact on long term economic growth prospects.
- **Export competiveness** shall **reduce** (increase in real exchange rate, i.e. increase in cost of producing exports), while the demand for relatively cheaper imports shall increase. Thereby creating an **unfavorable** impact on the **Trade account, Current account** and the overall BOP of the economy.
- In a country with a free-floating exchange rate system, a rapid **depreciation** of the country's **nominal foreign exchange rate (NER)** shall occur, against major trading currencies. **Overvaluation** of exchange rate may occur within a country adopting a fixed or managed floating FOREX system.
- **Income poverty** levels shall **increase**, **reduces** internal **real value of money** leading to **diminishing living standards**
- Overall **negative impact** on the sustainability of the **economic growth** and **development** process
- Shoe Leather Cost (cost incurred due to multiple bank visits to withdraw money, as real value of money decreases) and Menu Cost (increase cost of printing menus and price lists, due to frequent changes)

“ Why Inflation ”

REASONS

The principal reasons or courses for price inflation

The price of a good is decided based on market demand and supply similarly the average price of all goods and services or the general price level of an economy is decided based on ‘aggregate demand supply’. Changes in aggregate demand and supply shall affect or create changes in the general price level of an economy. Such changes can create inflation in two different ways or means.

(01)Demand – Pull Inflation
(02)Supply – Push Inflation

‘Demand Pull Inflation’

This is the tendency for the general price level to increase which is caused by an increase (outwards or rightwards shift of the aggregate demand curve) aggregate demand of the economy in comparison to aggregate supply. The essence of the demand-pull inflation concept is a situation where ***‘too much money chasing after too few goods’.*** The demand pull inflation concept can be illustrated based on two main alternative approaches.

- Quantity Theory of Money Approach
- Keynesian Approach

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(09) What is meant by **‘Quantity Theory of Money’** and how does it explain the creation of inflation

The quantity theory of money was introduced by the American economist Irving Fisher (1867 - 1947), building based on the absolute truth, or the identity presented by the exchange or quantity equation.

Fisher states that an increase in the **money supply** leads to a **direct** and **equal** (proportionate) increase in **general price levels** (inflationary pressure) within the economy, subject to **given** velocity and real output. This theory is essentially built on the belief that the only reason for an increase in price levels or inflation in an economy is an increase in the money supply.

$$\boxed{MV = PY}$$

Cambridge Equation of Exchange

(M): Money Supply
(V): Velocity of Money Circulation

MV = Value of Monetary Transactions

(P): General Price Levels
(Y): Real Output

PY = Economy’s total value of transaction OR Nominal National Income

In the short-run Velocity of Circulation (V) and Real Output (Y) is assumed constant

Essential Theory Background [Unit 7.1, Unit 5]

- **Money supply refers to the total stock of money (currency, bank deposits) in circulation among the public (households and firms) of an economy at a given point of time.** Money supply is a 'Stock Concept'. Which is also termed as 'Monetary Aggregates'.

- **Velocity of circulation** (V) refers to the average number of times a unit of currency is used as a medium of exchange in performing transactions, during a given period of time. The value of velocity of circulation can be estimated by dividing GDP at current market price, by the money supply.

- **Real Output:** This value judgement reflects only **changes in quantities** of **output**, during the given period of time.

  Technically: The money value of final goods and services output or aggregate gross value added of a country, **estimated by revaluating quantities of the current (present) period of time, using the prices of a designated base year** [2015 = 100]. This value judgement reflects only changes in quantities of output during the given period of time.

Back to the Discussion

Quantity (Exchange) Equation Vs. Quantity Theory

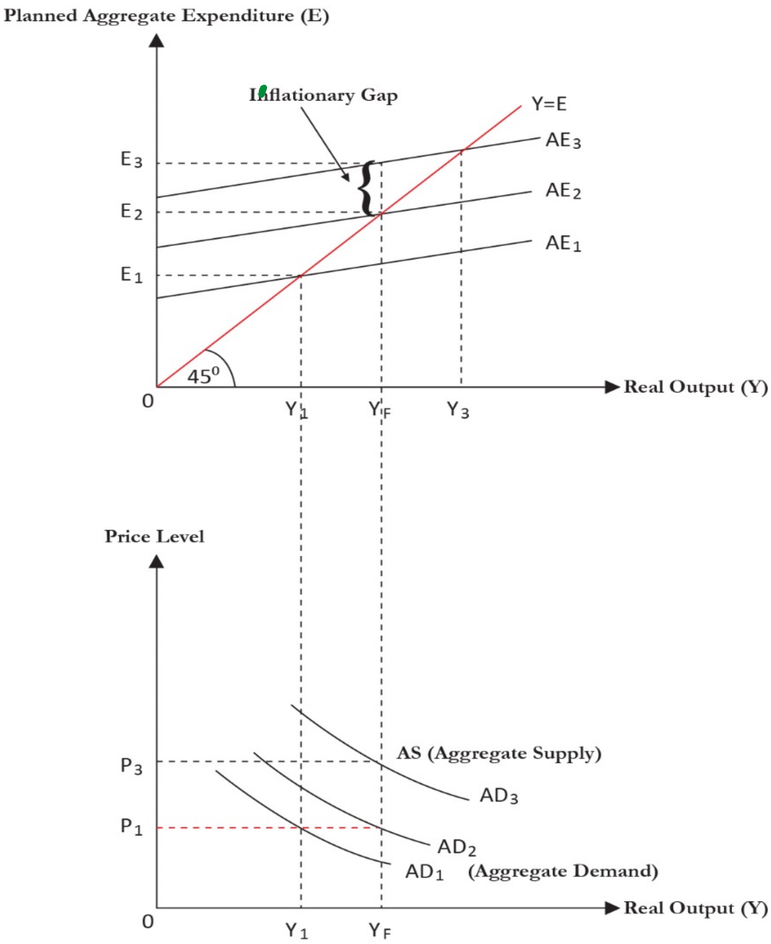
Foundation or basis of the 'Quantity Theory' is the 'Quantity or Exchange Equation', which is an identity or an absolute truth (truism), i.e. the value of transactions performed using money (MV) and the economy's total value of transaction (PT or PY), should essentially always be equal.

The quantity theory essentially explains inflation as caused by a direct and equal relationship between money supply and general price levels. Price level is determined by money supply, and not vice versa [i.e. P = f (Ms)]

As in the case of all theories, the quantity theory of money is also based on assumptions. The fundamental assumption being, the Circulation Velocity (V) and Real Output (Y) is given in the short run. The quantity theory stands or falls purely based on the merit and validity of these assumptions.

(10) Discuss the **Keynesian Approach** for the creation of Inflation

This is a situation where the general price levels of an economy, persistently increases due to an increase in the price of goods and services, caused by aggregate demand increasing, while aggregate supply remains unchanged, during a certain period of time.

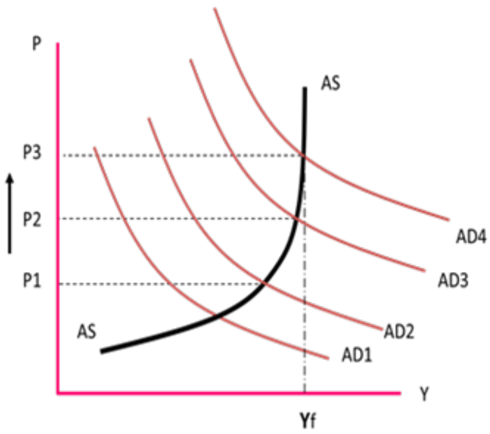


Source: P. Perera, 2021 (P 31)

<u>Demand Pull Inflation Sources</u>

- **Expansion in <u>money supply</u>**
- Government budget deficit financing
- Increase in autonomous components in AD [(a), (I), (G), (NX)]
- Population increase.

Alternative:



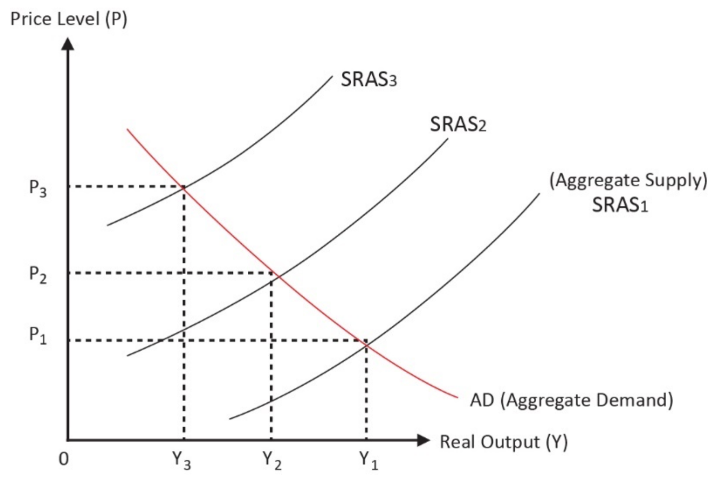
<u>SUPPLY PUSH INFLATION</u>

Supply (cost) push inflation is a situation where the general price levels of an economy, persistently increases due to an increase in the price of goods and services, caused by aggregate **<u>supply decreasing</u>** (relative to the level of aggregate demand), during a certain period of time.

The main reason for the decrease in supply is the **<u>increase in cost of production</u>**, due to an increase in the **price of inputs.**

A decrease in AS: upwards or leftwards shift of the aggregate supply curve (due to increase in the cost of production or inputs).

Cost-Push Inflation [Supply – Push Inflation]



Source: P. Perera, 2021 (P 32)

Cost push inflation Sources

- Increasing Wages
- Increasing cost of raw materials
- High profit margins
- Supply shocks
- Imported inflation

Essential Theory Background [Unit 6]

[A] Aggregate Demand [AD]:

✓ This is the total expenditure flow all economic operators or agents (households, business organizations and government) are planning to incur or spend on real output [goods and services], during a given period of time.

✓ The AD curve represents the total quantities of real output that economic agents plan to purchase at different levels of domestic prices.

✓ The [AD] function pertaining to an open economic model can be presented as:
AD (E) = C + I + G + (X-M)

[B] Aggregate Supply [AS]

✓ This is the total real output [goods and services] flow all production units are planning to produce and sell (i.e. generate 'income' from), during a given period of time.

✓ The AS curve represents the total quantities of real output that businesses plan to produce and sell at different price levels.

✓ There are different possible shapes AS curves, such as the short run aggregate supply (SRAS) curve and long-run aggregate supply (LRAS) curve, mainly due the different assumptions about the economy.

✓ The LRAS, indicates an economy's 'Potential Output' or 'Full employment Level of Output' [Yf].

Supply Shocks

A **supply shock** is an unexpected event that results in a dramatic change in the supply of a commodity, which in turn swiftly results in a change in the commodity's price.

Supply shocks may be brought on by sudden events such as natural disasters, wars, terrorism, or political decisions.

Also Relevant:

- Cost push inflation is said to be a struggle among 'pressure groups' to secure a share of the national income.
- Based on Cost plus pricing approach:
    - Wage –price Spiral inflation [leap frogging process]
    - Profit price Spiral inflation

(11) What is meant by Pressure Groups

This is a concept pertaining to cost or supply push inflation. We have broadly covered both demand pull and supply push inflation, and particular causes leading this form of inflation.

Pressure Groups tends to operate within an economy in two main forms:

- Organized labour groups or societies (trade unions)
- Oligopolistic organizations

- When trade unions exercise their organized bargaining power and push for high wage rates, it will result in wage (cost) pushed inflation.
- When oligopolistic firms exercise their market dominance to increase profits, it results in profit push inflation.
- Cost or supply push inflation can also be created due to external factors such as increase in the world market price of imports (imported inflation)

(12) State the broad Policy Measures to control inflation

1) Controlling (limiting) the growth in Aggregate Demand (essentially controlling monetary expiation using monetary and fiscal policy).
2) Intensifying (promoting) the growth in aggregate supply (using supply side or promoting policies)
3) Direct government interventions (direct price controls to control the rapid increase in the price and wage rates)
4) Eliminating barriers towards efficient allocation of resources

Specific Measures to Control Inflation

- Reducing the cost of production by providing subsidies and granting tax concessions
- Reducing the demand for loans by increasing interest rates
- Reducing the overall budget deficit and financing the deficit using non expansionary means
- Decreasing public expenditure
- Relaxing taxes enforced on goods used in general consumption or essential commodities
- Controlling or reducing the liquidity of commercial banks through open market operations (OMO'S)
- Increasing the statuary reserve ratio (SRR)
- Implementing direct control policies (price controls)

(13) Discuss the concept of **'Inflation Expectations'**

- Inflation expectations, which is generally defined as economic agents' beliefs or perceptions about inflation in the future.
- Inflation expectations influence wage and price setting behaviours, thereby being an important determinant of actual inflation.
- A sustained rise in short-term inflation expectations signal the medium-term inflationary pressures in the economy, which is an important factor to consider in setting the monetary policy at appropriate levels, to maintain price stability.
- In the long-term, inflation expectations indicate the view of the public on the credibility of the Central Bank in maintaining stable inflation.

Historical Behaviour of Inflation Expectations in Sri Lanka

- Inflation expectations in Sri Lanka, particularly that of the corporate sector, have shown to be well aligned with the trends in actual inflation, as measured in terms of both the National Consumer Price Index (NCPI) and the Colombo Consumer Price Index (CCPI).
- As observed over the years, changes in the monetary and fiscal policies are reflected in respondents' expected levels of inflation, however, at times with a lag.
- It is also observed that the gap between near-term and long-term inflation expectations of the corporate sector are being narrowed, thus indicating the expectation of less volatility in future inflation.
- Household sector expectations too, adapt to changes in policy measures, although the magnitude of the expected inflation generally remains higher than that of the Corporate sector

(14) Is an expansion in the money supply always inflationary?

An expansion in a given economies money supply will not always create an inflationary pressure within the economy. If an expansion in the money supply is to create an inflationary situation the following two conditions need to be fulfilled.

1) An increase money supply should result in an increase in the expenditure on goods and services.
2) Increased expenditure should create an excess demand for goods and services thereby increase price.

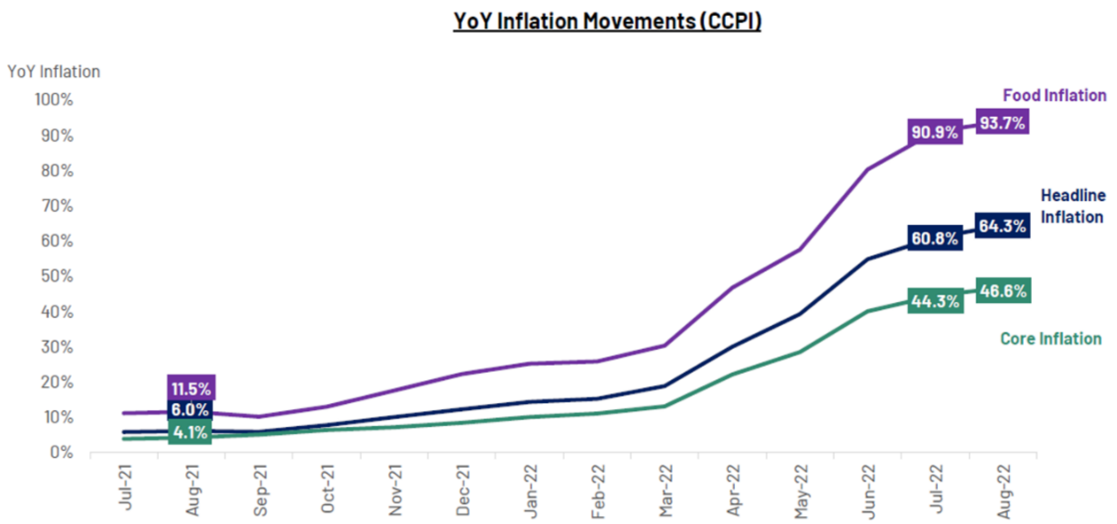
Accordingly in order to create an inflationary effect in addition to the money supply, velocity of circulation and supply of goods and services also play an important role. Although the **quantity theory of money** states that there is a direct and proportional (equal) change in the general price levels in response to a change in money supply, there will **not be such an essential increase** in price levels due to an increase in the money supply.

- Even if the money supply increases the price levels may not increase if the overall demand for goods and services within the economy remains unchanged (without spending on goods and services), that is when consumers hold on to money balances thereby creating a reduction in circulation velocity and the general price levels will not change.
- Even if the money supply expands and increases the demand for goods and services, an increase in price levels may not occur if the overall supply increases at a higher or same percentage.

The Sri Lankan 'High Inflation Crisis'
(A brief Q&A based Case Study)

Complied by: Imran Hasheem **(Supported by the Mind-ventures 'Econ-Hub' Resource Providers)**

[01] Outline the **Inflation status/trends of Sri Lanka** for the period of 2020 – 2022 (August), with specific focus on core and headline, food, and nonfood



- CCPI YoY Inflation for September was 69.8% (in August it was 64.3%)
- YoY food inflation was 94.9% (previous month YoY food inflation was 93.7%)

	Inflation Indicator	**Aug. 2021**	**Aug. 2022**
(1)	**Food Inflation**	**11.5%**	**93.7%**
(2)	**Headline Inflation [CCPI]**	6.0%	64.3%
(3)	**Core Inflation**	**4.1%**	**46.6%**

[Source: Verite Research]

	Inflation Rate Indicator	**2019**	**2020**	**2021**	**2022**
(1)	**NCPI [2013 = 100]**	3.5	**6.2**	**7.0**	**50.4**
(2)	**CCPI [2013 = 100]**	4.3	**4.6**	**6.0**	**46.4**
(3)	**GDP Deflator** [Rebased: 2015]	3.9	**3.3**	**8.5**	**48.8**

CBSL Annual Reports [2020 – 2022]

[02] Briefly outline the **specific reasons for high and rising rates of inflation** in Sri Lanka, especially during the 2021 - 2022 period

- Money printing or sharp rise in the stock of High-Powered Money (to fund the major welfare bill due to the pandemic effects and collapse of government revenue – 2019 tax relaxation)
- CBSL mismanaging and floating the foreign exchange rate (unprecedented depreciation of LKR against the US dollar and other major trading currencies)
- Removing and revising upwards the Maximum Retail Prices (MRPs) on several essential goods
- Public Utilities Commission of Sri Lanka permitting the tariff hikes of electricity, water, LP Gas and telecommunications.
- Food insecurity and shortages (collapse of the domestic paddy and other agriculture sectors), caused by the chemical fertilizer ban (Organic Agriculture initiative) enforced in 2021.
- The continued impact of the increased Aggregate Demand (AD) in 2021 because of relaxed or expansionary monetary policy adopted in 2020 to combat the pandemic recession.
- External sector pressures, follow on of the global supply chain problems from the Pandemic, volatility in petroleum and energy prices, and essential commodity shortages owing to the Russia – Ukraine war/crises.

Reasons for Inflation: **Detailed Discussion**

Money printing

IMF Mission Chief for Sri Lanka Peter Breuer pointed out that the printing of money by the Central Bank of Sri Lanka to finance the government in the absence of any other creditors is fueling inflation.

CBSL continued to print money to finance the government and keep interest rates low in 2020 and 2021; as a result, the growth in money supply led to increased domestic inflation. CBSL printed Rs. 1.2 Tn in 2021.

CBSL floating of exchange rate

In March 2022, CBSL decided to release the artificial exchange rate of LKR 200 per USD and this caused the exchange rate to plummet by 80%. As a result, the exchange rate plummeted to LKR 360 per USD and in May 2022, the CBSL decided to employ a managed exchange rate policy, in which the exchange rate is set at LKR 360 per USD with a fluctuating margin given to commercial banks and authorized forex dealers for selling and buying dollars within a certain range.

As a result of the 80% depreciation of exchange rate in 2022, this had a knock-on effect to prices of imported goods as well as products produced in SL which require imported inputs. This was another significant reason for increased inflation during 2022.

<u>Removing and revising upwards the Maximum Retail Prices (MRPs) on several essential goods</u>

During 2022, GoSL removed or revised upward the MRPs of several goods such as fuel, LP Gas, chicken, eggs, rice, wheat and others.

Furthermore, increases in tariffs for electricity and water as well as tax hikes for telecommunications also added to increasing price levels.
All the above had a resulting impact on inflation in 2022.

<u>Food shortages caused by chemical fertilizer ban in 2021</u>

In April 2021, President Gotabaya Rajapaksa implemented a sudden ban on chemical fertilizers and pesticides in order to promote organic fertilizer. However, without any suitable alternative to chemical fertilizer, the agriculture sector was severely impacted as crop yields dropped drastically. This caused food shortages, and the result of the reduced supply was an increase in the prices of vegetables which added to inflation.

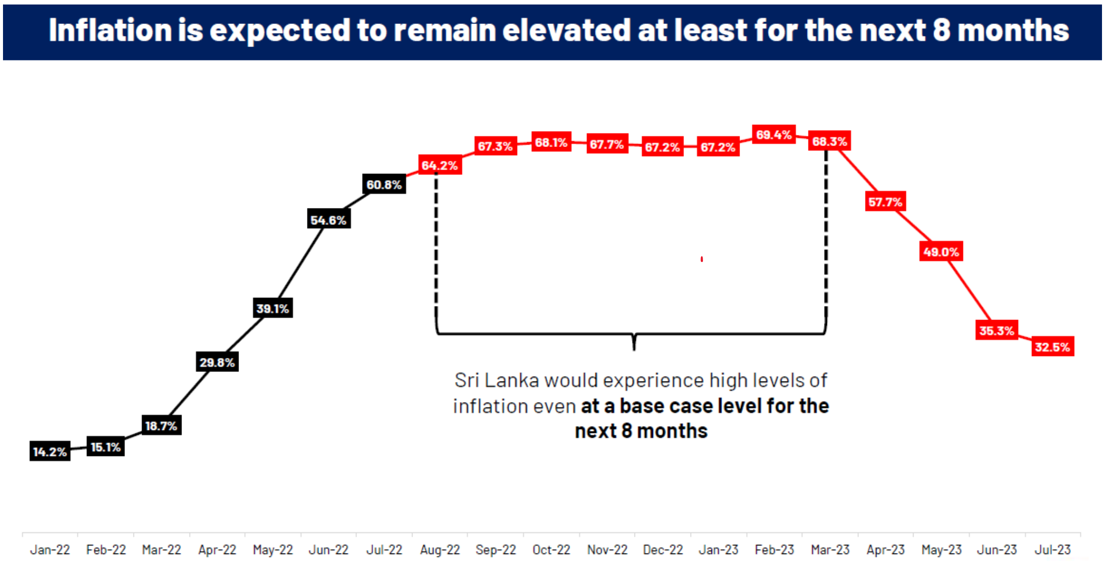
[03] Outline the **main strategy/policy measures** adopted by CBSL to **curb inflation pressure** (2021- 2022)

- CBSL increased its policy interest rates in **April 2022** with a view to curbing inflation by reducing demand pressures.
- In contrast, CBSL had maintained an expansionary policy during **2020** and **2021,** maintaining low policy rates. By **holding down** the **interest rates** and **exchange rate** at **artificial levels** during **2020** and **2021,** this added to **capital flight** (i.e., large scale capital outflow from SL) and **FOREX reserves drain** at the time.
- Finally in **April 2022**, the CBSL's <u>monetary board</u> made the decision to increase its policy rates by **7%**, which was the **largest increase in policy interest rates** at a point of time.
- The reason for this being the need to **curb inflationary pressures**. However, as **inflation in Sri Lanka** is **mostly supply-driven, increasing interest rates** can only have a **limited impact** on reducing inflation (which is why inflation continues to remain high in 2022), while **dampening GDP growth.**
- Reducing the **'Inflation Expectations'**, by ensuring the CB's **'Independence'** and **'Transparency'** in decision making

[04] Briefly Outline the **Inflation Expectations** for 2022 (Q4) and medium term

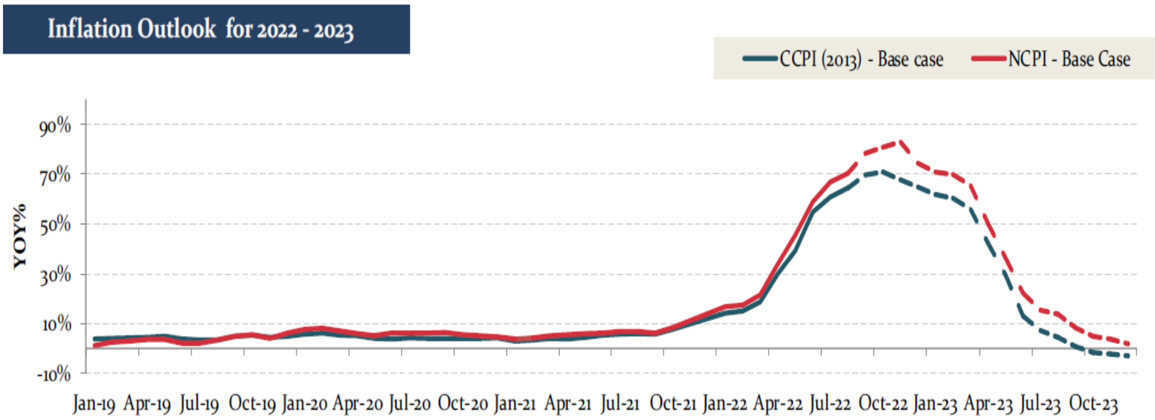
Inflation is anticipated to remain at elevated levels for each month of 2022 Q4 (in the range of 60% YoY) and perhaps for the first quarter of 2023. Thereafter, due to the high base effect, inflation should drop in the latter months of 2023.

However, as businesses increase their salaries to employees to cope with inflation, this may lead to a wage-price spiral, where higher wages lead to higher prices, thus adding to inflation.



Period	Expectation	Period	Expectation
Nov 2022	67.7	April 2023	57.7
Dec 2022	67.2	June 2023	35.3
Jan 2023	67.2	July 2023	32.5

[Source: Verite Research]



Both CCPI and NCPI are in the best-case outlook is expected to indicate inflation rates below ten percent (10%) or in the mid-single digit range by the 3rd quarter of 2023. If the economic contraction persists the economy might be exposed to the risk of a deflationary episode towards the 4th quarter of 2023.

[**Source: Frontier Research**]

[05] **State** the **main social** and **economic implications** (effects) of high inflationary pressure experienced in Sri Lanka

- Sharp reduction (or deterioration) of the real value of money
- Rapid increase in poverty levels (especially income or consumption poverty – income insecurity)
- Marked increase in Malnutrition (Food and Nutrition insecurity)
- Sharp increase in health care costs and shortage of essential drugs
- Increase social and income distribution inequalities
- Negative real interest rates, leading to discouraging long term productive investment (low growth or economic stagnation)
- Macroeconomic, social, and political instability

Detailed Discussion
Socioeconomic Effects of High Inflation:

Reduction in the real value of money

As a result of inflation, people will now be able to buy less goods and services with their same income. As a result, people on fixed incomes will find that they must reduce their consumption and substitute cheaper goods and services. Retired persons living on pensions or fixed incomes will be significantly affected.

Poverty

Due to high inflation and economic crisis, many Sri Lankans have fallen below the poverty line.

Sri Lanka is experiencing its highest poverty rate since 2009 with over 9.6 million Sri Lankans affected by poverty, according to a study by University of Peradeniya; In 2019, nearly 3 million people lived below the poverty line, but that number has increased to 9.6 million in October 2022.The study revealed that 42% of the people living in Sri Lanka are currently suffering from poverty.

According to a study by the World Bank, urban poverty has tripled in the last year from 5% to 15%.

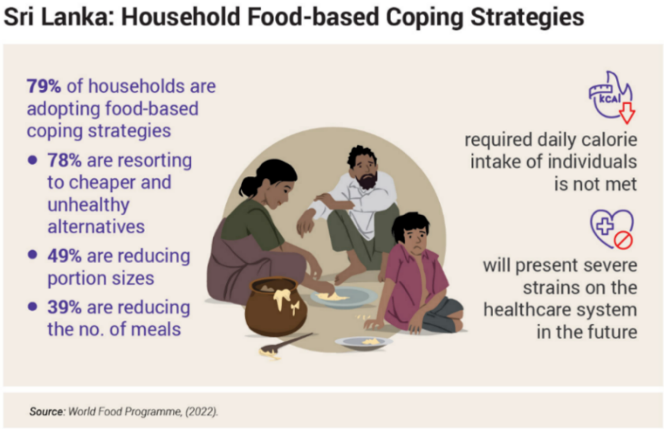
Malnutrition

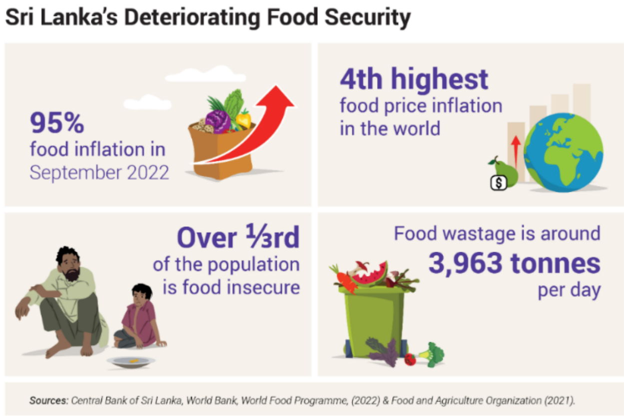
Due to high food inflation, most people can no longer afford meat and fish. A survey by Red Cross found that 50 percent of the households in Sri Lanka have reduced the intake of meat and fish while 11 percent have completely dropped the proteins from their diet. This has led to malnutrition among children.

An estimated 6.3 million people in Sri Lanka are facing moderate to severe acute food insecurity and their situation is expected to worsen if adequate life-saving assistance and livelihood support is not provided, a report by the Food and Agriculture Organization (FAO) of the United Nations (FAO) and the United Nations World Food Programme (WFP) warned last month.

A UNICEF report last month showed that over 5.7 million people, including 2.3 million children, require humanitarian assistance in Sri Lanka, making it among the top ten countries with the highest number of malnourished children with the numbers expected to rise further.

Even with regards to medicine, poorer households have taken to reducing their doses of medicines below the recommended dosage to afford the medicine.





Food for Thought: What kind of Inflation Criss is Sri Lanka Facing?

One school of thought is that Sri Lanka is currently facing **'Stagflation'**; Stagflation occurs when economic growth is stagnant, but prices continue to rise.

Sri Lanka's economy has contracted by 4.8% (negative GDP growth of 4.8%) for the first half of 2022. However, prices continue to increase. As a result, the country is facing stagflation.

Another school thought believes Sri Lanka is facing a rather new phenomenon known as **'Recessionary Inflation'**, since our economy is in a recession, while simultaneously experiencing high and rising inflation

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