International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 • Website: www.ijfmr.com • Email: editor@ijfmr.com

Time Value of Money: Causes, Effects, and Methodology

Mr. Mazedul Islam

ABSTRACT:
In the present time inflation is the very common word in economics. It's going to uncontrollable for every country. A country can be insolvent due to higher inflation. Present USA and Iran war increases inflation. Mainly inflation occurs for non availability of specific product.
Time Value of Money is one term of inflation.
Time Value of Money is one of those economic terms especially when prices rise of specific goods. At its core, Time Value of Money refers to the increase in the general level of prices for goods and services over a specific time.
While moderate Time Value of Money is a normal part of a poor economy, high or unpredictable value can create serious challenges for households, businesses, and governments.
Time Value of Money shows the development of a country.

Keywords: TVM (Time Value of Money), ALTV (Average Last Time Value), APV (Average Preset Value)

INTRODUCTION
Inflation is the main problem of Economics. Most of countries Governments are unable to control it. Most recent highest inflation rate 33.1% at Argentina and lowest inflation rate 0.1% at Switzerland.
Current dollar rate of Argentina peso 1388 and Switzerland frank .80. An inflation kills the people slowly. In very recent Argentina may have to face scarcity. Where GDP rate of Argentina 4.5%, highest GDP rate at South Sudan 243% and lowest GDP rate at Palestine -26.6%**.** Argentina's Economy is living due to this GDP rate. Bangladesh GDP rate is 3.8© and inflation rate is 9.13%.
Time Value of Money is easier to calculate inflation.

DEFINITION
If other condition is unchanged present value of money compared time to time and determined by any daily necessary goods. The value will declare time value of money. Other condition includes: utility of that goods, Suddenly higher supply and higher demand, Over pricing etc.

WHAT CAUSES TIME VALUE?
Time Value which is a part of inflation may cause with several reasons. Described below:

a. Syndicate This occurs when Markets are controlled by specific some people.

b. Money Print

Money Print is the common and real cause of inflation. Most of the countries Government prints money when they need but they don't think about inflation or impacts

c. Gold reserve/value

Lowest Gold reserve and value.

d. Higher import

If a country has higher import and a little export. The country will face higher inflation rate.

e. Natural disaster

Natural disaster might be another cause of inflation due to unequiblilim of demand and supply ratio

f. War:

World war is another cause of inflation due to unequiblilim of demand and supply ratio. Present USA Iran war faces higher inflation rate Iran inflation rate increased at least 4% and USA inflation rate increased 2.4%due to war. Source says it will increase to 6% due to debt. Total losses during the present war of USA and Iran for 40 days was $100 billion of Israel, $50 billion of USA and $140 billion of Iran. It means this huge amount reduced from reserve and. GDP. The two factors affect the inflation.

g. Money Laundering:

Money Laundering is another cause of inflation. Due to laundering foreign reserve reduces and inflation increases

h. Great epidemic:

Great epidemic like Corona. Plague also the cause of inflation.

i. Rumor:

Rumor is another reason to increase inflation. It may cause through Media, Newspapers, Mobile Communication. Say “X” TV broadcasting live value of commodity of one region but other regions commodity value is lower than that region. It may affect the price.

j. Waste:

Many years ago, a news was published that USA wasting extra wheat in the sea. It’s to control inflation. They can give it to lower developed countries but they made it waste. On the other hand, a countries rich people eating less but purchasing more and extra they are wasting It may cause inflation.

How Time Value Affects the Economy

Time Value of Money has wide-ranging effects, some positive and some negative, depending on its level and stability.

Time Value of Money provides earlier inflation rate. On the basis of this rate Government can be aware about the prices and could take necessary steps to control it.

Impact on Consumers

Rising prices reduce purchasing power, meaning people can afford less with the same income. Fixed-income earners are often hit the hardest unless their income is adjusted for time value.

Impact on Savings and Investment

Time Value erodes the real value of money saved. If savings earn less interest than the time value of money rate effectively loses value over time. On the other hand, moderate time value of money rate can encourage spending and investing rather than hoarding cash.

Impact on Businesses

Businesses may benefit from time value of money rate if they can raise prices faster than costs. However, high time value rate creates uncertainty, making it harder to plan, invest, or set long-term contracts.

Impact on the Economy as a Whole

Low and stable time value rate is generally seen as a sign of a growing economy. But high rate can slow growth, reduce consumer confidence, and, in extreme cases, lead to economic instability or recession.

Measuring Time Value of Money/ METHODOLOGY

A Review and example: TVM is needed because foreign exchange rate does not show the clear view because of Internal contract with business magnet or Investment by foreign country.

Time Value of Money shows the development of a country.

A few days ago, Taka 5 was valued but now it has no value. It makes us tensed what will be the next. But the present Income level of people is not enough for this lower trend of Time value of money.

TVM (Time Value of Money) = One goods actual /average value (Milk, Rice, Egg Wheat, Chocolate and others) in the market last time (ALTV) /Those goods actual/average value this time (ATV).

1) Milk price was Tk.8 per kg in the year 1995 In the year 2026 the price is increased to Tk.100.

Then,

TVM=ALTV/ATV

TVM=8/100=.08 i.e.Tk.1=.08 for 31 years. It means: for Tk.1

A) (1-.08) =Tk..92 was printed.

B) Tk. value Undervalued for Tk..92

2) Egg price during 1995 was Tk.1 and it is now 2026 at Tk.8.

TVM=1/8=.125

It means Tk. 1

A) (1-.125) =Tk..875 was printed

B) $1 value undervalued for Tk..875

3) Rice price was Tk.16 in 1995 and Tk. 95 at 2026

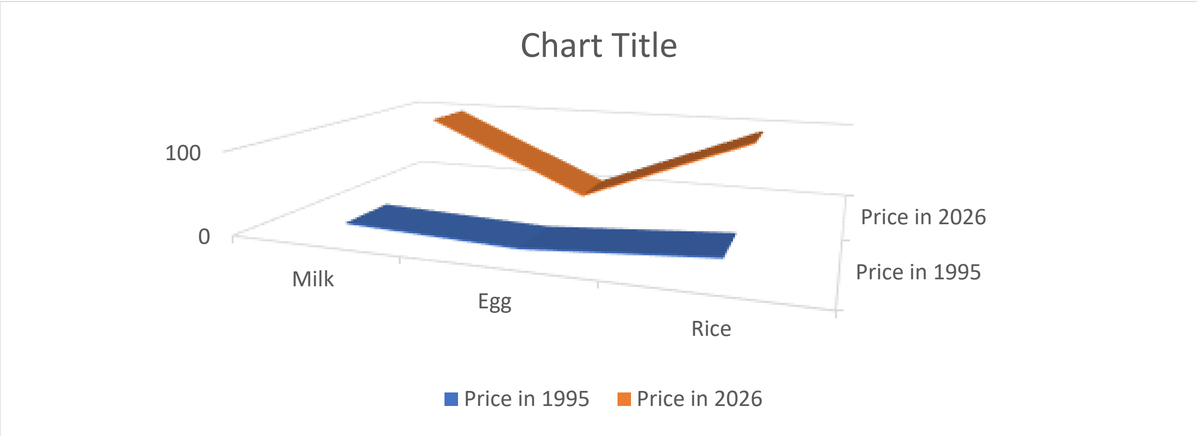
TVM=16/95=.16

It means Tk.1

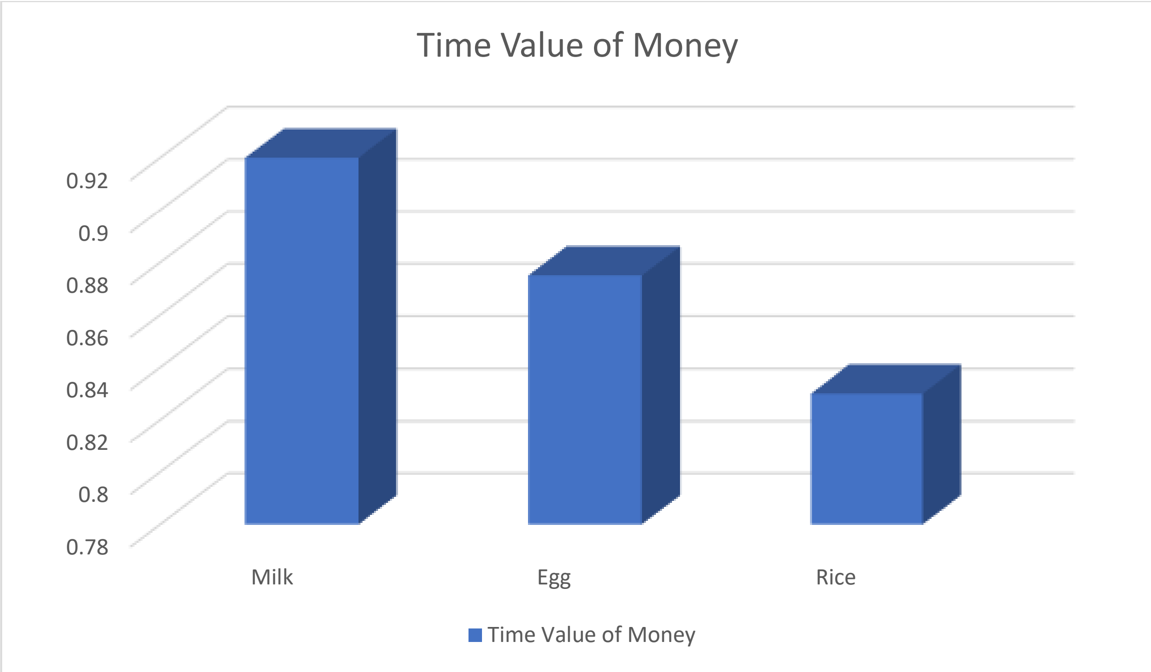
A) (1-.16) =Tk..83 was printed

B) Tk.1 value was undervalued forTk.83

Price Chart of Commodities:



If we averaging three result i.e. (.92+.875+.83)/3=$.875 was undervalued.



It will show the result of Time Value of Money.
I used the prices of goods practically collection from the market of one country.
Money Print and Time Value:
If one country prints money to meet the countries expenditure except purchase asset the time value effects the matter.
Suppose Tk.1 printed against total reserve Tk. 100 then
TVM=1/100=.01
It means
Tk.1 is undervalued to (1-.01) =.99
It is included with previous method.
On the other hand, if excess money printed suppose, Demand Tk.1 but printed Tk. 2 but supply of goods are same i.e. For Tk.1. Then the inflation occurs for Tk.2-Tk.1=Tk. 1 i.e. 100%.
Foreign currency reserve $ 1000 and dollar rate Tk.122 for Tk.1 print.
If we print Tk. 2 the result comes to
122/1000X2X1000=Tk.244.
It means dollar rate becomes doubled due to print (return regarding print has not been counted).

Is Time value of money Always Bad?

Yes, it is always bad for people.

Necessity:

A. Control internal market value: To control internal market value of goods i.e. syndicate TVM is very necessary. Because Govt. Are printing money whenever they need to control foreign exchange rate through gold or other things.
B. Control foreign exchange rate: Most of the countries Govt. are using equilibrium of foreign exchange rate through gold or other way but if TVM rate calculated they could not be able to equilibrium it.

C. Control Money Print: When TVM is calculated the Govt. Could control their money print. Because money print will decrease the value of TVM Rate.
D. Control higher import: TVM is needed to control higher import.
E. Disaster Management: Disaster Management is also very necessary to control inflation Most of the countries are facing higher inflation due to disaster.
F. War Management War management is very necessary to control inflation.
G. TVM is needed because foreign exchange rate does not show the clear view because of Internal contract with business magnet or Investment by foreign country. In one country we have seen a lot of gold has been seized from Airport. As I know the Gold smugglers are not fool that after seized gold for several time, they will smuggle the Gold by Airport. This gold reserve balancing the foreign exchange rate. Investment by third country also balancing FE rate. However, Investment comes but the salary range or daily lifestyle is not changing of some countries.
H. Control Gold Value: Some countries are controlling inflation to revalued the gold value i.e. increase the gold value to the market. To. Control the gold value TVM is necessary.

INFLATION VS TIME VALUE RATE:

Inflation: In economics, inflation is the sustained, **broad increase** in the prices of goods and services over time, which means money loses its purchasing power, so you can buy less with the same amount of money. It's measured as a percentage rate, typically using indices like the Consumer Price Index (CPI), reflecting how much more expensive the average basket of household items has become.
Inflation rate calculates through the below theory
Inflation rate= (current value of good-previous value of goods)/previous value of goods X100.
Time Value Rate: If other condition is unchanged present value of money compared with **time to time** and determined by any daily necessary goods will be declared time value of money. Other condition includes: Suddenly higher value, Over pricing etc.
TVM (Time Value of Money) = One goods average value (Onion, Salt, Fish, Meat, chocolate or others) in the market last time (ALTV) /Those goods average value this time (ATV).

PRESENT VALUE VS TIME VALUE RATE:

Present Value: PV Rate shows a products Present Value.
Time Value: Works with Present Value.

CONCLUSION

Time value rate affects nearly every aspect of economic life, from the price of daily essentials to long-term financial planning. To control the whole economy of a country Time Value Money measurement is very necessary.

References:

1. https://www.imf.org/en/publications/fandd/issues/series/back-to-basics/inflation
2. `https://www.worldometers.info/gdp/gdp-by-country/
3. https://en.wikipedia.org/wiki/Present_value#cite_ref-Moyer_1-5
4. https://www.bddata.org/db/Prices_of_selected_consumer_goods
5. https://tradingeconomics.com/country-list/inflation-rate?continent=asia