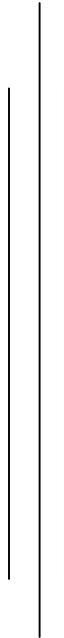


Comparative Analysis of Inflation in Nepal and India



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30 November 2011

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Background:

Year-on-Year monthly variation of inflation, both in Nepal and India, seemed to be higher than expected at present situation. Inflation in Nepal is largely affected by rising food price in the country, which is a global phenomenon also in the present context. However, inflation in food component has come down to single digit after a long time in October 2011. Non food inflation would go higher in the future if the present exchange rate trend (especially USD exchange rate appreciation) still goes to upward direction. Overall consumer price inflation in Nepal has been influenced by rising prices of food and petroleum products and rising inflation India.

Inflation data¹ for the past few years (August 2007 to October 2011 of Nepal and August 2007 to July 2011 of India for the analysis of monthly annual variation) have been taken into consideration for a review. Observations and suggestions extended by a report (IMF Country Report No. 11/319, November 2011- Nepal: Selected Issues) of International Monetary Fund (IMF) have also been referred.

Consumer Price Inflation in Nepal:

Overall Inflation:

- Overall consumer price inflation was moderate between August 2007 and March 2008 having an approximate range of 5 percent to 6 percent changes.
- Inflation started to escalate and reached to double digit (10.1 percent) in June 2008. Afterwards, overall inflation remained either in double digit (highest peak 13.8 on January 2009) or higher side single digit till to date within the review period.

Food Price Inflation:

- Very few months (August 2007 – March 2008 except in September) observed a single digit food price inflation ranging from 6.6 percent to 9.2 percent. Rest of the periods observed double digit inflation with a record of 21.5 percent hike in June 2009.
- Thus, increased food price has been one of the decisive forces for maintaining higher level inflation in Nepal.

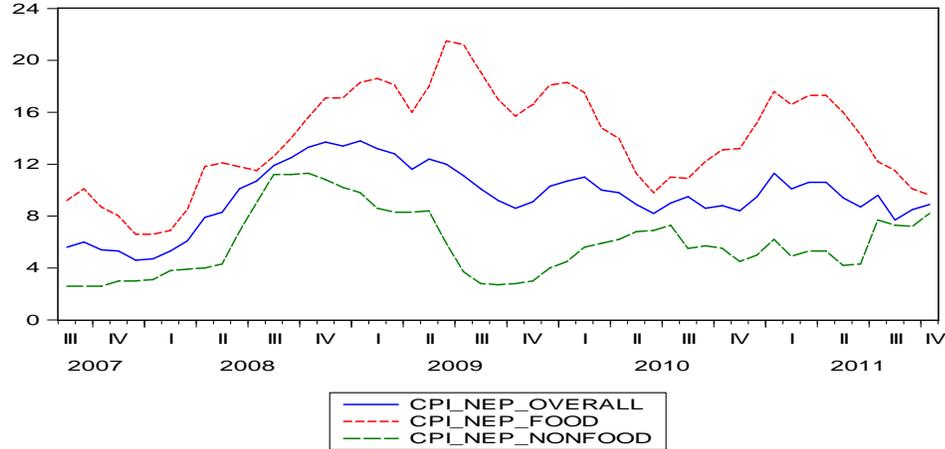
Non-food Price Inflation:

- On the contrary, Non-food inflation showed a comfortable situation during the review period registering single digit increment ranged from 2.6 percent to 9.0 percent except in August to December, 2008.

In order to capture an ‘inflation trend’ in Nepal, time plots of overall consumer price inflation and its principal components have been presented in the following graph:

¹ Data Source: Nepal Rastra Bank and Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India.

Chart - 1
Consumer Price Inflation (change in %)



The time plots displayed in chart – 1 (CPI_NEP stands for Consumer Price Inflation in Nepal) also support aforementioned discussions as food price inflation was always at higher level to overall inflation during the entire period taken under review. On the contrary, non-food inflation always maintained lower side compared to overall CPI changes.

Wholesale Price Inflation:

- Overall wholesale price inflation showed a mixed trend within the review period. It was recorded as low as 4.3 percent (February 2008) to as high as 18.9 percent (December 2009) within the review period.
- Sub-components of WPI (agriculture commodities, domestic manufactured commodities and imported commodities) showed a parallel run in the beginning until 2nd quarter of 2008 and periods after 2nd quarter of 2010 only. Rest of the periods, they had a visible deviations with the overall WPI inflation.

In order to have a look at historical trend, time plots of the WPI and its principal components are exhibited in the following chart:

Chart - 2
Wholesale Price Inflation (change in %)

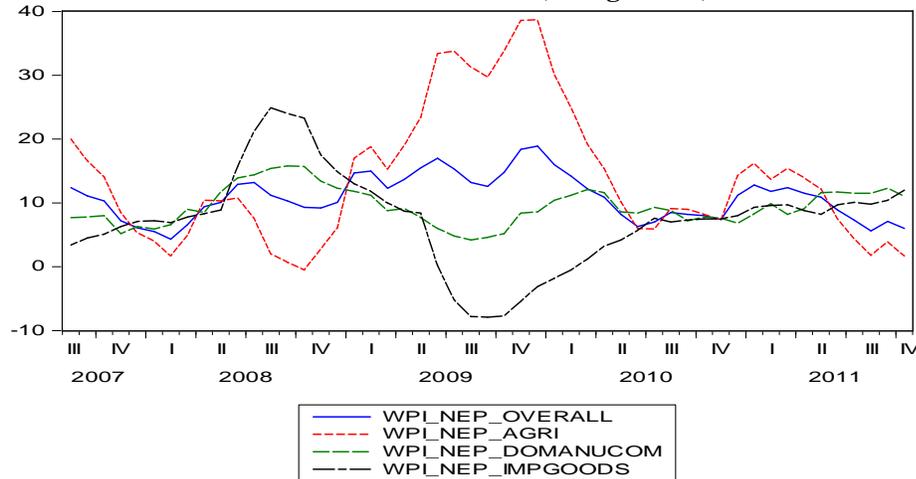
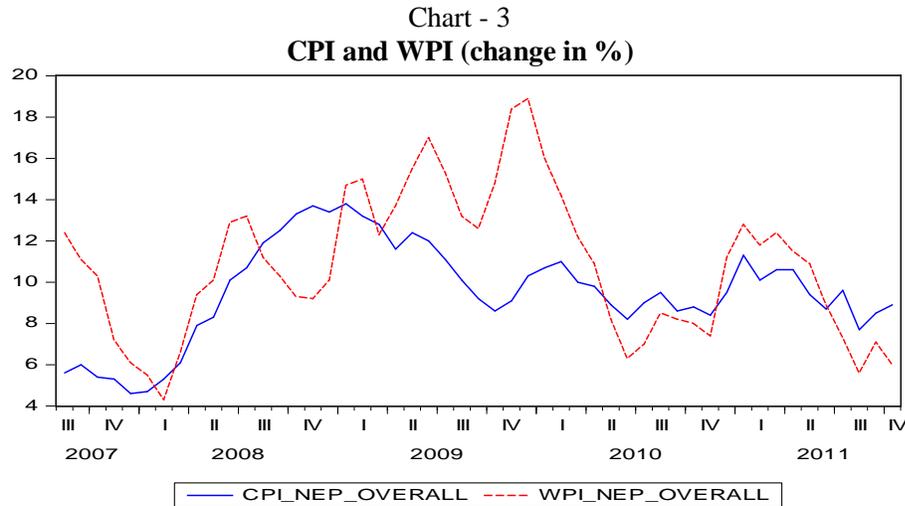


Chart - 2 (WPI_NEP stands for Whole Price Inflation in Nepal) provides a unique picture of divergence of inflation of sub-components (agricultural commodities, domestic manufactured commodities

and imported commodities) between 3rd quarter of 2008 to 2nd quarter of 2010 compared to overall WPI. Rest of the periods, sub-components seemed more stable and hovered around the overall WPI inflation.

CPI and WPI in Nepal – Comparison:

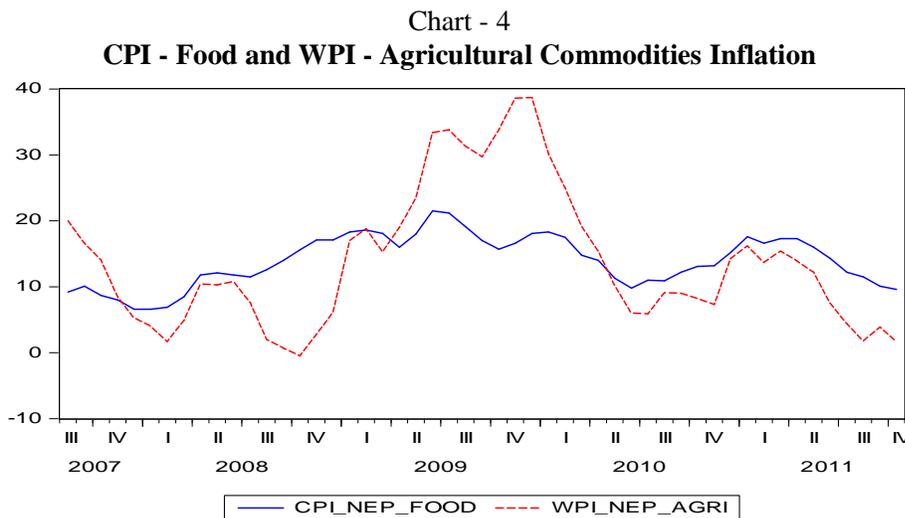
Even though, the weight and the basket are not similar in CPI and WPI, an indicative comparison is made regarding their changes. In order to have a general idea, trend of the CPI and WPI inflation is presented in the following chart:



Plots of the WPI and CPI together give us an idea that their co-movements are not similar during the entire period. Rather they follow same direction in some time horizon (descending at the beginning and ascending after 1st – 3rd quarter of 2008) and opposite walk in other time (from the 3rd quarter 2008 to 2nd quarter 2010) registering more volatility. After 2nd quarter of 2010 to date, both of the indices seem almost unidirectional with more stability than previous periods.

CPI - Food and WPI - Agricultural Commodities Inflation – Comparison:

Likewise, the weight is not exactly similar and the commodities basket is also different in between CPI and WPI, as an indicative analysis, CPI - Food and WPI - Agricultural Commodities inflation has been compared in the following graph:



The graph in the chart - 4 gives an idea that CPI - Food inflation has caught a consistent path of fluctuation but remained almost in lower side double digit. On the contrary, WPI - Agricultural

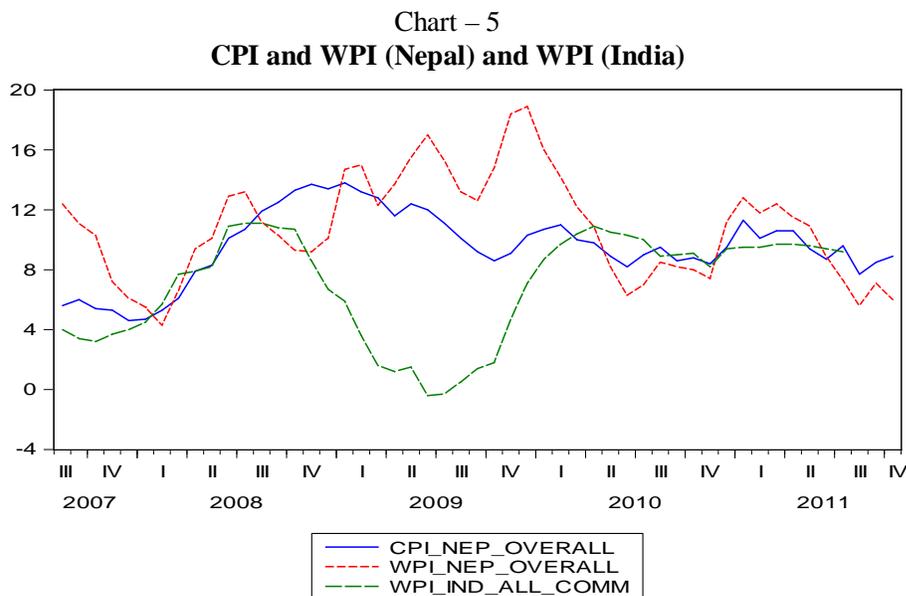
Commodities inflation peaked as high as 39 percent too in December 2009. However, majority of the times, it remained below the CPI Food inflation except in the 2nd quarter of 2009 to 2nd quarter of 2010.

Major Reasons for Price Rise in Nepal:

Rising inflation has been a serious concern to NRB and necessary steps are taken to contain it at reasonable level. However, Nepal has witnessed several constraints for the past few years. Even having the food surplus in the country, there was problems of proper supply side management due to hoarding and cartels. Price of petroleum products had been adjusted several times on the higher side. Such adjustments helped pushing the cost of freight and carriages and cost of other goods and services. Rise in the wages and salary in agriculture and industry further pushed the inflation up. Several seasonal constraints also prompted to push the inflation up in the past. For example, price rise on sugar and sugar made products, vegetables, fruits etc. Heavy and continuous rain in the last year helped the prices of seasonal vegetables partially to go up due to the damages in vegetable production thereby shortfall in supply. Furthermore, rising inflation in India also transmitted in Nepal through imports. Thus, inflation in Nepal is affected by several factors.

Inflation: Comparison between Nepal and India

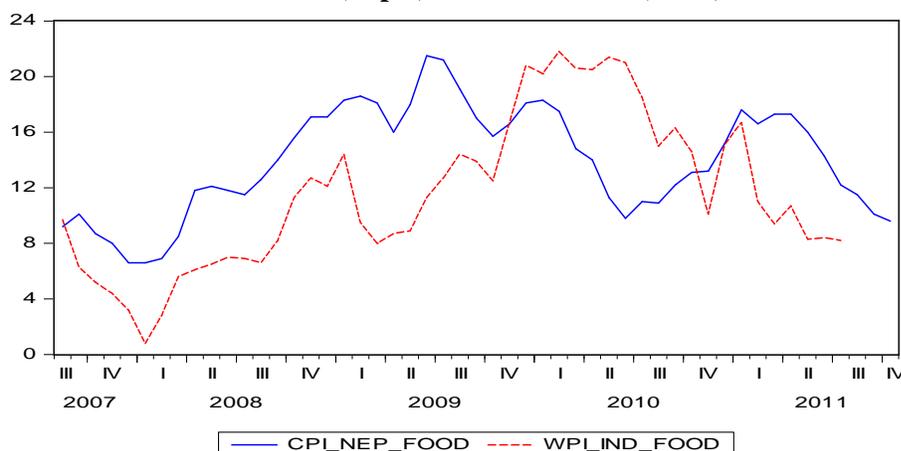
Time plots of CPI and WPI inflation of Nepal and WPI inflation of India have been presented in the following chart:



It is normally believed that the rising inflation in India is also one of the reasons of rise of inflation in Nepal through imports. However, if we compare the inflation trend lines displayed in the chart above, this opinion does not hold all the time. It is seen form the time plots that the Nepali and Indian inflation were mildly correlated in the period of 3rd to 4th quarter of 2007 and reasonably correlated in the periods of 1st quarter to 3rd quarter of 2008 and 1st quarter of 2010 to 2nd quarter of 2011. Contrast to the general expectation, CPI and WPI in Nepal was noticeably higher side and rising while inflation in India was on the lower side creating huge gap between inflation rates. For example, CPI and WPI in Nepal were beyond 10 percent rise while such inflation rate was below 5 percent in India especially in the year 2009.

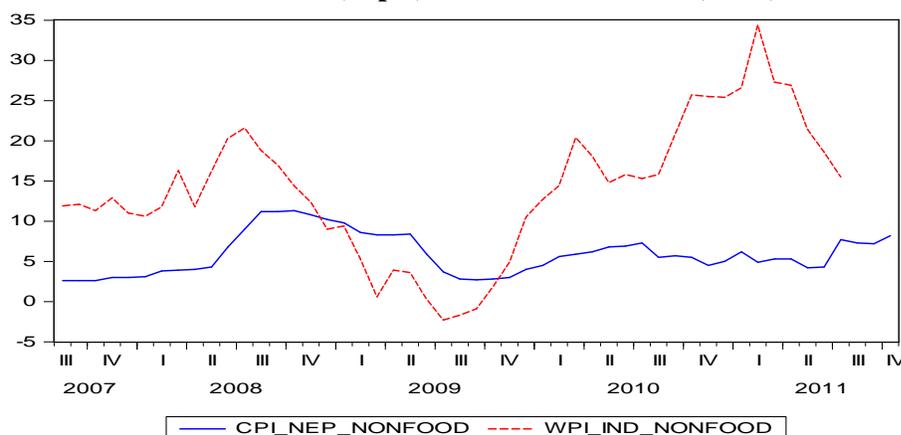
For further comparisons of important components of price indices of Nepal and India, time plots of inflation on *food* and *non-food* have been presented in the following chart:

Chart - 6
CPI – Food (Nepal) and WPI - Food (India)



Nepal-India food to food comparison suggests us that inflation in both countries moved almost in the same direction. However, Nepalese food inflation was on higher side to India between 3rd quarter of 2007 to 4th quarter of 2009 and 4th quarter of 2010 to 3rd quarter of 2011. The periods of 1st quarter to beginning of 4th quarter of 2010 had a reverse trend having higher inflation in India and lower in Nepal.

Chart - 7
CPI – Non-food (Nepal) and WPI – Non-food (India)



Comparing the non-food to non-food inflation between Nepal and India, the scenario seems opposite to food inflation. Lower inflation observed in 2007 and 2008 and in 2010 and 2011 in Nepal. Such inflation was on higher side compared to India in the year 2009. These comparative scenarios also suggest that not all the time inflation in Nepal is influenced proportionately by the inflation of India.

Inflation Outlook in India²:

It is expected that the emerging markets, including India, will perform well despite having challenges like higher inflation as well as the rising prices of the oils. It is expected that the price of the commodity will continue to maintain the upward march since the developing countries are maintaining a very strong growth momentum motivated by increased consumption. Indian economy is expected to grow at 8 percent in this fiscal year 2011-12. The rising price of oil in the country is the factor behind the growth of the price of all other commodities in India even if it is achieving a good supply situation.

² Please refer the link <http://business.mapsofindia.com/inflation> for the details.

Inflation Outlook in Nepal:

Taking into consideration of the major factors like current Indian inflation outlook, likely scenario of agriculture product, further adjustments in petroleum product, cost associated other factors (wages, interest rates, exchange rates) and improvements in supply situation would jointly determine the future path of the inflation in Nepal. Concerned to these likely causes, Indian inflation is predicted to fluctuate depending upon the international fuel price. Agriculture production in Nepal is forecasted to improve and expected a food surplus this year. Wages and salaries would not rise further for few years because these are adjusted this year. Some of the items like fruits and vegetable prices started to come down especially from late September 2011. Price of rice and other grains remained almost stable form the past few months. Inflation of non-food group is at reasonable level. However, current USD appreciation trend would impact on price, especially to the non-food index in the future. Thus, if the supply situation is improved and there is no further upward adjustments of the petroleum product; as a net effect, inflation would come down to the level of 8 percent in this fiscal year, provided exchange rate remains stable.

A Study Findings and Policy Suggestions of IMF on Inflation in Nepal:

IMF Country Report No. 11/319 (November 2011) also put forward the following opinions on inflation situation and likely policy initiations required in Nepal:

Stylized Analysis:

- Although Nepal maintains an open border with India and pegs its currency to the Indian rupee, Nepal's inflation rate does not go in lockstep with that of India.
- Rising inflation in Nepal has been mainly driven by food price inflation.
- Nepal's price level has also co-moved with international commodity prices and certain domestic policy factors (correlation among movements in broad money, private credit and overall CPI inflation), however energy sub-index parallels its movements in international oil prices, though the magnitude of the spillover is relatively low, reflecting a lagged and partial adjustment of domestic fuel prices.

Econometric Analysis:

- VAR results indicate that the main driving forces behind Nepal's inflation - food and nonfood - are India's inflation and movements of international oil prices.
- Both India's inflation and international oil prices have strong spillovers to Nepal. India's inflation has a quick spillover effect, while the impact of international oil prices is slower but more persistent.
- The nominal effective exchange rate has a significant negative effect on inflation in the study of the subset data only. This result indicates increased responsiveness to movements of nominal effective exchange rate in recent years, which may reflect rising imports as a share of GDP.
- Food price inflation responds significantly and quickly to spillovers from India's food inflation and international oil price movements. The oil price has a more persistent impact than India's food inflation, and the impact intensified in recent years. The response of food price to oil price may be due to the correlation between oil price and those of chemicals and fertilizers used in agricultural production, transportation cost of agricultural products and use of energy in irrigation.
- Broad money also has a lagged and temporary effect on inflation, but its magnitude falls short of the other factors such as India's inflation and international oil prices.

- The impulse responses of Nepal's food inflation are similar to those of the overall CPI inflation, albeit stronger.
- Monetary conditions also have a significant impact on food price inflation in the study though it fades out quickly. The increased responsiveness to monetary conditions calls for attention of policy makers.
- The nominal effective exchange rate has a negative effect on food inflation with a lag of about three months in the study of the subset series only.
- In the studies on both the full dataset and the subset series, monetary conditions have a strong impact on nonfood price inflation, and the largest impact in the study of the full dataset. But the monetary effects remain short.
- Nonmonetary factors play an increasing role in recent years as reflected in the study of the subset series. Namely, Nepal's nonfood price inflation responds to Indian food and nonfood inflation as well as international oil prices to a larger extent since 2007.
- The nominal effective exchange rate has a negative effect on nonfood price inflation, but in the study of subset series only.

Policy Implications:

- Nepal faces upside inflation risks given the still high food price inflation in India. If risks were to materialize, actions should be taken to contain second-round effects and inflation expectations.
- Since food price inflation has been higher and more volatile than nonfood price inflation, there is merit to pay attention to both headline inflation and core inflation.
- The changing pattern of inflation may reflect structural changes in Nepal's economy including, for example, rising imports as a share of GDP, and policy makers should be alert to these changes as they may cause inflation to be more volatile and persistent.
- Despite strong spillover from outside, domestic monetary conditions matter for inflation, but monetary policy tools have not been actively used to curb inflationary pressures. In this context, more active conduct of monetary policy in light of the existing high inflation should be considered.

Summary and Conclusion:

While making a comparison about inflation in Nepal and India, figures of year-on-year (monthly) changes of inflation were taken into consideration for the past four years now. Summarized analysis indicated that overall price in Nepal and India are in rising trend. However, food inflation is in higher order in Nepal compared to Indian food price inflation and non-food inflation is in lower side in Nepal compared to India at present. Moreover, Nepal's inflation is influenced by Indian inflation also despite the other several factors like price of petroleum product, supply condition and other internal variables. In this context, International Monetary Fund's recent study report also had been reviewed. This study also revealed that the major factors influencing inflation in Nepal are the spillovers of Indian price and international petroleum price. On the whole, with all efforts of policy variable adjustments, international shock adjustments and supply situation improvements; as a net effect, inflation in Nepal is expected to come down to 8 percent during this fiscal year, provided exchange rate remains stable.

