CHAPTER I

INTRODUCTION

1.1 Background of the Study

Nepal is a small landlocked country, sandwiched between China in the north and India in the south, east and west. It is roughly rectangular in shape and has a territory of 147,181 sq. kms. Geographically speaking, the country can be divided into three regions, namely: Mountainous, Hilly and Terai. All these three regions extend from east to west. The mountainous region covers about 35 percent, the Hilly region 42 percent and the Terai region 23 percent of the total area of the country (CBS, 2011).

According to the census of 2011 A.D. the total population of the country is 26,494,504. Annual population growth rate (exponential growth) stands at 1.35%. The total number of households is 5,427,302 and the average household size is 4.88. Out of the total population, 6.73% reside in Mountainous region, 43% in Hilly region and 50.27% in the Terai region. The total male population is 12,849,041 (48.5%) and the female population is 13,645,463 (51.5%). The highest population density is in Kathmandu district (4,416 person per sq. km.) and the lowest is in Manang district (3 person per sq. km). There are 125 caste/ethnic groups and 123 languages are spoken as mother language with Nepali as the largest (44.6%) followed by Maithali (11.7%) and Bhojpuri (6.0%) (CBS, 2011).

A report by NRB (2012) states that GDP for FY 069/70 increased by just 3.6%. Sector-wise, Agriculture saw growth of 1.3%, Industry of 1.5% and Service of 6.0%. Within the last decade, the highest growth rate of 5.8% was seen in the FY 064/65, which was the only time the economy saw growth rate above 5% and the lowest was 2.8% in FY 063/64. The GDP for FY 069/70 was NRs. 1701.2 billion (at current prices). Out of the total GDP, the total contribution of Agriculture is 38.1%, of Industrial sector is 15.3 % and of the service sector is 46.6 %. Ironically, 75 % of the working population is engaged in Agriculture sector. Agriculture in Nepal is mainly at a subsistence level and is in dire need of commercialization. Main agricultural

products are rice, pulses, corn, wheat, sugarcane, jute, root crops, milk, water, buffalo meat, etc. Similarly, main industries are tourism, carpets, textiles, small rice, jute, sugar, oilseed mills, cigarettes, cement and brick production. Total tourist inflow for FY 068/69 was 8,03,142 (NTS, 2012).

For FY 069/70 the total debt of the country was NRs. 511.1 billion, out of which internal debt was NRs. 211.7 billion and foreign debt was NRs. 299.4 billion. It can be inferred that total debt per capita is NRs. 18,780 for the same FY. Gross National Income is NRs. 1709 billion. For the FY 069/70, the ratio of total exports to total GDP is 4.0% and the ratio of total imports to total GDP is 29.0%. Main import commodities are petroleum products, machinery and equipments, gold, electrical goods, medicine, etc. Similarly, main export commodities are clothing, pulses, carpets, textiles, juice, pashmina, jute goods, etc. Main trade partner of Nepal is India. Out of the country's total exports, 57.4% and out of the total imports, 57% is with India. Other import partners are China (25.9%) and export partners are US (9.6%) and Germany (5.4%). Labor force by occupation is as follows. Agriculture-75%, Industry-7% and Service – 18%. The taxes and other revenues is 17% of the Total GDP whereas, total tax revenue is 14.8% of the GDP (NRB,2012).

According to Nepal Living Standard Survey (NLSS) 2009/10 people with annual income below Rs. 19,261 are defined as the ones below poverty line. On that basis, 25.16% of the total population is found below the poverty line. Gini coefficient, which is a measure of income inequality for 2009/10 is 0.32. Gini coefficient in urban area is 0.35 whereas in rural area it is 0.31. In terms of employment, 19.9 percent of Nepal's total population is economically inactive and the rest 80.1 percent are economically active which can be defined by labour force participation rate. Of the total economically active population, 78.3 percent are employed.

About 56 percent families in Nepal have received remittance income in one year. The average household remittance receipt is estimated at Rs. 80,436 at current prices. Calculation of average remittance receipt per person comes out to Rs. 9,245. Of the numbers receiving such remittance, 58 percent is from within the country, 19 percent from India, and 23 percent from other countries. The number of families receiving

remittance has been rising since last 15 years. The first survey showed that only 23 percent families had received remittance while the recent third survey showed 56 percent are receiving remittance. The share of remittance in total income of families is on increase. The share of remittance to household income in 1995/96 was 27 percent, which has gone up to 31 percent by FY 2010/11. Change has occurred in the remittance structure by sources as well. For instance, the share of remittance received from India has come down to 11 percent with a decline of 24 points in the last 15 years, whereas the share of remittance received from countries other than India has increased to 69 percent from 22 percent in the same period (NLSS 2010/11).

Of the total 2,358,710 Nepali workers going for foreign employment, Malaysia happens to be the first destination providing foreign employment to 742,363 (32 percent) Nepali workers followed by Qatar with 661,555 (28 percent), Saudi Arab with 478,716 (20 percent), and UAE with 301,072 (13 percent). Likewise, 55,222 (2 percent) are in Kuwait, 28,723 (1 percent) in Bahrain, 17, 674 (1 percent) in South Korea and 57089 (3 percent) in other countries (NLSS 2011). This figure does not include those who are informally employed in India.

The BOP recorded a surplus of Rs. 79.90 billion in the first eight months of the FY 2012/13 compared to a deficit of Rs. 11.29 billion in the same period last year. Current account situation has also improved with a surplus of Rs. 37.51 billion in the review period compared to a deficit of Rs. 8.79 billion in the same period last year. This is mainly due to the growth in remittance income and grants, and notable improvement in services income. In dollar terms, BOP surplus and current account surplus reached $1,175.0 million and $469.7 million respectively in the first eight months of the current fiscal year. In the same period of the previous year, there was a BOP deficit of US $152.4 million and current account deficit of $119.2 million (NRB 2012/13).

The official figure of remittance inflow to Nepal for FY 2069/70 was NRs. 434.58 billion, which is about 25% of the GDP. This shows how substantial remittance is to the economy of the country. In fact, Nepal is third among the countries receiving the

highest proportion of remittance in terms of GDP. The percentage of all households receiving remittances has more than doubled from 1995/96 to 2010/11 A.D. The nominal average amount of remittances per recipient household has also increased by more than five folds in the same period. One of the most interesting trend is the increasing share of remittances from countries other than India (NRB 2069/70).

It is to be noted here that the official figures regarding remittances do not include the money sent through unofficial means like *Hundi*. Large numbers of migrant workers from the rural parts of the country work in India who usually does not send the money through official means thus remaining unaccounted for in the records of the government. Some speculate that the money received through unofficial channels are in par with the figures in official records.

According to the census of 2011, the number of migrant workers with work permit is 19,17,903 which is 7.2% of the country's total population. The total number of males is 16,63,237 (86.7%) and that of females is 2,54,666 (13.3%). Talking in terms of geographical distribution, 8,11,880 are from Terai; 9,98,087 are from Hilly and 1,07,936 are from Himalayan region. District-wise 97,626 migrant workers, which is the highest figure, are from Kathmandu. Likewise, more than 60,000 workers from each of Jhapa, Morang, Rupandehi and Kailali district work aborad. (NLSS, 2011)

The following table depicts the growing role of remittance in the Nepalese economy.

Table 1.1 Increasing role of remittance in Nepalese households.

Description	Nepal Living Standards Survey		
	1995/96	**2003/04**	**2010/11**
Percent of all households receiving remittances	23.4	31.9	55.8
Nominal average amount of remittances per recipient household (NRs.)	15,160	34,698	80,436
Share of total amount of remittances received by household %			
From within Nepal	44.7	23.5	19.6
From India	32.9	23.2	11.3
From other countries	22.4	53.3	69.1
Share of remittances in total household income among recipients %	26.6	35.4	30.9
Nominal per capita remittance received for all Nepal (NRs.)	625	2,100	9,245
Nominal total amount of remittance received (million NRs.)	12,957.8	46,365.5	259,088.5

Source: Nepal Living Standard Survey, 2011

Inflation is an increase in the overall level of prices in the economy. In simple terms Inflation means increase in general level of prices. Due to the increase in general level of price, the value or purchasing power of money declines. The macro economic data published by Nepal Rastra Bank reveals that inflation for the year 2010/11 and 2011/12 are 9.6 and 8.3% respectively. However, price rice felt by common citizens in the market is even higher than what the official reports say. Inflation at such high rates not only negates the earnings of the common man but also the interest rates offered by the banks and financial institutions. With not much prospective investment

with better returns in sight, people are forced to deposit their earnings in banks with interest rates lower than the actual inflation rate, resulting in negative real interest rates.

Inflation can be classified into different types on the basis of speed, nature and causes. On the basis of speed, inflation is divided into creeping, walking, running and galloping inflation. On the basis of reason, inflation is broadly divided into two types- demand pull inflation and cost push inflation. Similarly, on the basis of coverage, inflation is of two types- comprehensive and sporadic inflation.

The data from 2007/08 onwards shows that inflation is relatively higher especially in the later years. The highest overall inflation in terms of percentage change was seen in the FY 2008/09. Except for the FY 2011/12, the inflation for Food and Beverage saw larger increment than the Non-food & Services section. Within the Food and Beverage section also, the highest increment in prices are in Vegetables, Milk Products & Eggs, and Fruits. In the Non-food & Services section, the highest increment was seen in Clothing & Footwear and Transport, especially for the last two consecutive years. (NRB,2012)

In reality, the increment in prices felt by the consumer is much more than shown by the official records as above. In a fragmented economy as ours, there are several structural factors and hidden contingencies that might amplify inflation. For example: middlemen and the influence of black marketers artificially hike the prices and sometimes create artificial shortages. Similarly, cartelling and monopoly in supplies also causes inflation. Given the current political instability and lawlessness, there is ample opportunity for such people to take advantage of the situation and unnecessarily increase the prices of the products.

1.2 Statement of the Problem

Every now and then it is heard how remittance has done wonder for our country and how it has become a life saver. But while its positive impacts are overplayed, it seems all the stakeholders are blinded by the glare of the advantages it has brought to

otherwise troubled economy. Nobody seems to notice the price we are paying in terms of the negative impacts that comes along with it.

Although there are lots of social and economic negativities that our society has started to feel as a result of remittance, here we focus only on a single economic impact i.e. inflation. When inflation gets out of control then we all know what a big trouble it becomes for common citizens like us.

The problem is that we do not know to what extent does remittance contributes to the inflation. Just making a wild guess regarding the impact on inflation based on some anecdotes or opinion is not sufficient and sometimes even misleading. Hence the study tries to find whether remittance influences inflation or not.

1.3 Purpose of the Study

The purpose of the study is to analyze the causal relationship between remittance and inflation in Nepal on the premise of the theoretical inter-relation. This general objective is attained through these specific objectives.

i. To identify the factors affecting inflation.

ii. To describe pattern of remittance and inflation.

iii. To measure the statistical relationships between remittance and inflation based on historical data.

As mentioned in the title itself, two major economic issues are at the centre of the study here. They are: Remittance and Inflation. How are these seemingly different economic issues inter-related? If there is any inter-relation, what is the extent and direction of it? These are few fundamental questions that this report attempts to answer.

1.4 Significance of the Study

This study is designed to be useful to not only specific groups of people. Hopefully it will be understandable to the common citizens also. The significance of the study lies in the fact that it will be insightful of the underlying inter-relation between remittance and inflation. With the help of this research, future estimates of inflation caused by remittance using correlation coefficient can be made. It can be helpful while formulating national and regional level economic policies. This study adds extra dimension to relevant topics and provide a different perspective. This study is helpful in planning any precautionary measures well in advance. This study might be useful for other scholarly works of similar nature or even for simple academic purposes.

1.5 Limitations of the Study

i) Accuracy of Data

This study is based on the macro-economic data as published by Nepal Rastra Bank and other authentic resources. However, not all the data on the related topics might be inclusive. For example: the remittance figure for each year obtained represents only those coming through the formal channel. But on the other hand remittances coming through unofficial channels, which also contribute to inflation, but are not counted in the official records, are not accounted in this study by default. Another major concern is how well does the official figure represent the ground reality? For example: the real inflation felt in day to day lives by common citizens of the country is much severe than depicted by the related data of the government bodies.

So it should be kept in mind that the results of research are only as good as the quality of the data (Gujarati, 1995). There is no choice but to depend on the available data.

ii) Adequacy of Data

It is obvious that the study becomes inclusive if data of as many periods as possible are taken into calculation. However due to lack of adequate data of early years, that

was not possible in this case. For eg: the remittance figures entitled "Worker's remittance" were available only from FY 1999/2000 onwards. Before that, only partial remittance figures under sub-headings "Gorkha remittance", "Private remittance" were available which could not be undertaken in this research study. Similarly, the salary and wage index before 2004/05 could not be obtained as it had not been systematically compiled by the related government authorities.

iii) Unavailability of data

The study can become more and more comprehensive if the data on not only the main variables but also on other linking factors such as Aggregate Demand, Cost pushing factors, etc. can be obtained. Lack of published data has hampered the comprehensiveness of this analysis. For example: there aren't any indicators that represent aggregate demand in the NRB reports. So any statistical relationship between the dependent variable and aggregate demand or between the independent variable and aggregate demand could not be derived. Similarly, historical annual data on all the cost pushing factors could not be found.

iv) Budgetary, and time limitations

This is not a funded research study thus limiting its nature only to a scholastic level. Had there been sponsorship of any kind and longer duration for research, then this study would have become more comprehensive.

1.6 Organization of Study

This study has been divided into five chapters, sequentially, Introduction; Literature review; Research Methodology; Data Presentation and Analysis and finally Conclusion and Recommendations. The first chapter is concerned about general introduction of Nepalese Economy with emphasis on Remittance and Inflation. It also briefly explains about the objective of the study, statement of the problem, data limitations, significance of the study, etc. Chapter two deals with the literature review of related topics. This chapter has been roughly categorized into inflation part, remittance part and the third part which deals with the common issue of remittance

and inflation. Literature reviews from studies as old as those from the 1970s up until now have been included in this chapter. Theoretical reviews of the related topics precede the past reviews. This chapter concludes with explanation in research gap between this study and the previous studies. Chapter three is all about the research methodology. Topics like research design, theoretical framework, variables, their sources, linkage between the variables, statistical analysis tools, etc. have been described in details. The data presentation and analysis chapter makes use of the statistical analysis tools to present the findings. This chapter has been roughly grouped into two portions, i.e. data presentation and statistical analysis. Finally the thesis concludes with the fifth chapter of Conclusion and Recommendations based on the findings and analysis of the whole study. Bibliography and appendices are given at the end of the thesis.

CHAPTER II

LITERATURE REVIEW

This chapter has been broadly classified into two sub-headings, namely theoretical review and related research review. In the theoretical review, all the theories associated with remittance, inflation, their economic linkages, etc. have been discussed. Some established theories and their explanations in the related topics will help to better understand the analysis part of this research work. In the related research review portion, related national and international researches, articles, etc. have been mentioned. Due to the practical limitations, full effort has been made to include only the abstract or the conclusions of those researches and articles. However, wherever necessary brief elaboration has been done to clarify the subject.

Both theoretical and the related literature review portion has been categorized into the following headings: Inflation, Remittance and Remittance & Inflation.

2.1 Theoretical Review

Under this heading, some of the basic theoretical concepts regarding the two variables undertaken i.e. Inflation and Remittances have been discussed.

2.1.1 Inflation

In ordinary language, inflation means a process of rising prices. In the Keynesian sense, true inflation begins when the elasticity of supply of output in response to increase in money supply has fallen to zero or when output is unresponsive to changes in money supply. When money supply increases it results partly in the increase of output (GNP) and it partly feeds the rise in prices. When the supply of output lags far behind, as a result price rises, which is described as inflationary. In Coulborn's words, it is a case of "too much money chasing too few goods."

Basically, inflation represents a situation whereby the pressure of aggregate demand for goods and services exceeds the available supply of output (both being counted at the prices ruling at the beginning of a period). In such a situation, the rise in price

level is a natural consequence. Now, this disparity between aggregate demand and aggregate supply may be the result of more than one force at work. As we know, aggregate demand is the sum total of consumer's spending on current goods and services, government spending on current goods and services and net investment being contemplated by the entrepreneurs.

The ordinary functioning of an economy should result in distributing and using income in such a manner that aggregate demand for output including profits and taxes. At times, however, the government, the entrepreneurs or the households may attempt to secure a larger part of output than would thus accrue to them. If other sectors are not prepared to acquiesce in this increase in the share of output used by any one sector, all the sectors together will be trying to get more of the national output than production has provided. This is the basic framework for the inflationary process, when aggregate demand for all purposes- consumption, investment and government expenditure- exceeds the supply of goods at current prices.

i) Demand pull inflation

This represents a situation where the basic factor at work is the increase in demand for resources either from the government or the entrepreneurs or the households. The result is that the pressure of demand is such that it cannot be met by the currently available supply of output. If for example, in a situation of full employment, the government expenditure or private investment goes up this is bound to generate an inflationary pressure in the economy.

ii) Cost-push inflation

Even though there is no increase in aggregate demand, prices may still rise. This may happen if the costs, particularly the wage costs, go on rising. Now, as the level of employment increases, the demand for workers rises progressively so that the bargaining position of the workers is enhanced. To exploit this situation, they may ask for an increase in wage rates, which are not justifiable either on grounds of a prior rise in productivity or of cost of living. The employers in a situation of high demand and employment are more agreeable to concede to these wages claims, because they hope

to pass on these rises in costs to the consumers in the shape of higher prices. If this happens then another inflationary factor comes into play.

Inflation theories can be grouped under two labels, viz. the monetarists and the structuralists. The monetarists attribute inflation to monetary causes and they rely on monetary measures to control it. On the other hand, the structuralists are of the opinion that inflation is due to maladjustments in the economic system and they question the efficacy of monetary and fiscal measures alone to tackle the problem. Some of the main theories of inflation are as follows:

i) Market Power theory of inflation
ii) Conventional Demand-Pull inflation
iii) Mark-up theory
iv) Bottle-Neck inflation
v) Demand-Composition inflation

2.1.2 Remittance

A remittance is a transfer of money by a foreign worker to his or her home country or simply sending an amount of money from one country to another.

Money sent home by migrants constitutes the second largest financial inflow to many developing countries, exceeding international aid. In 2012, $401 billion new remittance record went to developing countries with overall global remittances (including developed countries) topped $514 billion. Remittances contribute to economic growth and to the livelihoods of people worldwide. Moreover, remittance transfers can also promote access to financial services for the sender and recipient, thereby increasing financial and social inclusion. (WB, 2012)

As remittance receivers often have a higher propensity to own a bank account, remittances promote access to financial services for the sender and recipient, an essential aspect of leveraging remittances to promote economic development.

The stability of remittance flows despite financial crises and economic downturns make them a reliable financial resource for developing countries. As migrant

remittances are sent cumulatively over the years and not only by new migrants, remittances are able to be persistent over time. Remittances are often sent by circular migrants, migrant workers who move back and forth between their home and host countries in a temporary and repetitive manner. These workers have the benefit of working in a high-income country and sending their remittances to a low-income country, thus benefitting financially. At the state level, countries with diversified migration destinations are likely to have more sustainable remittance flows. From a macroeconomic perspective, remittances can boost aggregate demand and thereby GDP as well as spur economic growth. However, some research indicates that remittances may also have adverse macroeconomic impacts by increasing income inequality and reducing labor supply among recipients.

Nepal has seen exponential increment in the remittance inflow specially after the turn of the century. Political instability, lack of employment opportunities and comparatively low wages are some of the contributing factors that have led to continuing outflow of manpower from the country. Correspondingly, the remittance inflow has also increased. Nepal is third in receiving remittance in terms of GDP, i.e. 25% of GDP (WB, 2012).

Remittance has done good to our economy but there are some disadvantages also. Heavy dependence on remittance means anytime this sector faces difficulties, then our economy also goes into trouble. Not only that, there are several socio-economic impacts that evidently arises due to remittances. For example: with remittance income in hand, migration from rural to urban areas has been observed. This has led to increasing population pressure in urban areas on one hand and lessened the economic activities in the rural areas on the other. Several cultivable land have been left barren, as the income from agriculture is felt no more necessary after alternative significant income from remittance. Several housewives who were previously active to supplement their husband’s income have opted to become passive because of remittance income. Dealing with the negative aspects has become a serious issue.

2.1.3 How remittance induces inflation?

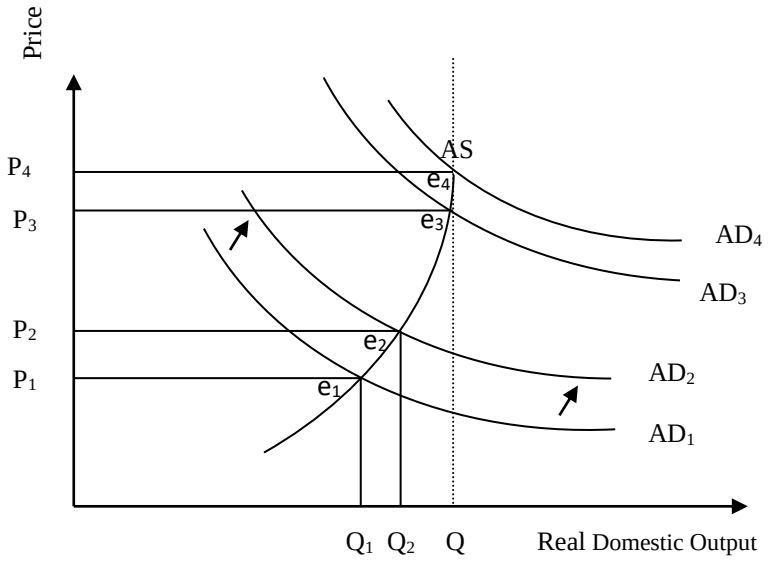
Remittance induces inflation via three linking factors. They are demand pull factors, cost push factors and money supply.

i. Demand Pull factors

According to the traditional Keynesian model, the interaction between Aggregate Demand (AD) and Aggregate Supply (AS) shows how prices and output are affected. In short run, the AS curve is upward sloping rather than vertical. So when the AD increases, price increases along with the output. If the AS is vertical then change on the demand side of the economy affects only prices. Or in other words, it can be said that if the output does not increase to match the increment in aggregate demand then the only thing that increases is price.

For example, with sizeable income from remittance people might want to migrate to cities for better life. They might want to purchase properties in the cities in order to permanently settle there. As a result aggregate demand for land and apartments in cities increases but on the other hand the supply does not match the demand, especially in the heavily urbanized areas for obvious reasons. Therefore, the land and properties prices go up.

Fig 2.1: AD-AS curve interaction



From the above figure, it might seem that price rise is not so bad, if it is accompanied by economical growth. However, for the last decade in Nepal's case, GDP growths have been very slow (less than 5%) in comparison to the inflation (which is almost at double digits). One plausible explanation for this predicament is that the money from remittance have been mostly used for consumption and diverted to non productive sectors. As Nepal's case is that of an import based economy, especially from India, most of the remittance income has been used for purchasing consumables from across the border. So price rise in any of the materials imported from India is directly reflected here as inflation. Besides, since income from abroad is not being utilized in productive sectors, the real domestic output remains lower than necessary, if not stagnant. However, aggregate demand continues to rise thus fuelling inflation.

ii. Cost push factors

For any kind of production of goods or services several inputs are required. For agricultural sectors those inputs can be land, irrigation facilities, seeds, chemical fertilizers, agricultural labor, processing costs, etc. For manufacturing sector those inputs can be raw materials, machineries, utilities like fuel and electricity, labor, etc. For service sectors the main inputs are human capital although there are other inputs also which depends on the type of service business.

If the cost of any of the inputs mentioned in any of the sectors mentioned increases then most likely the selling price of that particular product or service also rises.

For example, when the wages of the labor engaged in some production process increase, then the cost of production also increases. If the profit margin is not to be compromised then the selling price is increased accordingly. In other words, the consumer will have to pay more to get that product or service than before.

With the lure of higher income in foreign countries many skilled and semi-skilled manpower have left the country, creating a shortage of capable manpower here. Again demand-supply interaction comes into play and as a result of shortages of manpower, their wage demand increases. Not only that but also because of the absence of those who previously worked in agriculture sector before, and no substitute to fulfill that

gap, agricultural land have remained barren thus reducing the agricultural production. Again with lowered agricultural production the price rises.

Inflation through cost push factors is like a vicious cycle. Due to inflation in raw materials, cost increases, thus increasing the price of the final product. Again that leads to higher cost of living for which the wage and salary rise pressure increases and the cost of production again goes up. This finally reflects in the form of inflation in the market. In short, "Inflation leads to further inflation".

iii. Money Supply

Quantity theory of money states that the quantity of money is the main determinant of the price level or the value of money. Any change in the quantity of money produces an exactly proportionate change in the price level. In the words of Irving Fisher, "Other things remaining unchanged, as the quantity of money in circulation increases, the price level also increases in direct proportion and the value of money decreases and vice versa". If the quantity of money is doubled, the price level will also double and the value of money decreases and the value of money will be one half. On the other hand, if the quantity of money is reduced by one half, the price level will also be reduced by one half and the value of money will be twice. Fisher has explained his theory in terms of his equation of exchange: $PV = MV + M'V'$

Where, P = price level, or 1/P = value of money

M= the total quantity of legal tender money

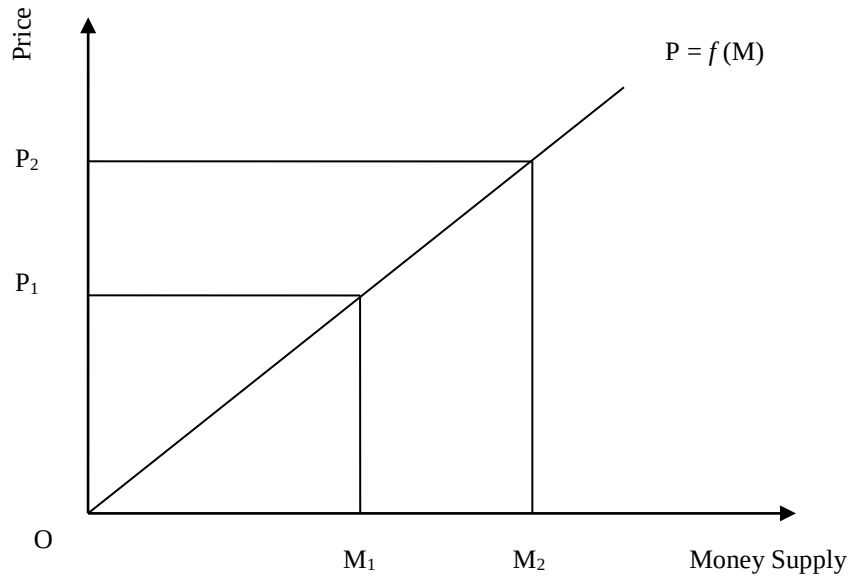
V= the velocity of circulation of M

M' = the total quantity of credit money

V' = the velocity of circulation of M'

T = the total amount of goods and services exchanged for money or transactions performed by money

Fig2.2: Graphical representation of Fisherian theory



As shown in the figure above, Price level is the function of Money supply. Although Fisher's equation is too simple to exactly hold true in today's complex economic scenario, it nevertheless rightly indicates that when money supply increases, liquidity increases, which if not controlled in time, will ultimately lead to inflation.

As remittance income increases, so does the money supply. The families of the migrant workers use the remittance money in either consumables or in buying assets or simply deposit it in the banks. Either way, more money is pumped into the economy. If there are no additional productive economic activities where this additional money is used up for further economical growth, or increased money supply is not controlled by the regulating authority through various tools, then that fuel inflation instead. When the currency depreciates in comparison to foreign currencies, then the amount of remittance income increases, thus sending the economy into frenzy by accelerating money supply.

2.2 Related Research Reviews

2.2.1 Inflation

Khatiwada (1981) in his study pinpoints seven factors determining the price level in Nepal. Among the independent variables are money supply (narrow and broad), price level in India (i.e. the wholesale, consumer, import and export price), Gross Domestic Product, Government expenditure, Foreign exchange reserve, petroleum prices and expected rate of inflation.

His deduction of the stepwise simple regression of rate of inflation shows that one year lagged money supply, current Indian consumer as well as wholesale prices, government expenditure and petroleum prices have significant impact on inflation whereas GDP and expected rate of inflation have relatively lower impact upon the general price level. Foreign exchange rate has minimal role in raising the price level directly. Its effect may be reflected in the price level indirectly through the change in money supply as foreign exchange reserves (net) increase the monetary base and then the money supply.

The main findings of his thesis were that, 10% change in one year lagged narrow money supply leads to 5.32% change in price level. 49.33% of the variation in price level is explained by one year lagged narrow money supply.10% changes in one year lagged broad money supply brings about 6.15% change in price level. About 33.8% variation in price is explained by one year lagged broad money supply. Similarly, the coefficient on current Indian wholesale prices (IWP_t) shows that 10% change in Indian wholesale prices causes 4.26% change in Nepalese price level. 28.9% variation in the price level is explained by it. The coefficient on current consumer's price index for India (ICP_t) shows that 10% change in ICP_t causes 4.203% change in Nepalese price level with 31.43% of variation explained by the explanatory variable. The coefficient on government expenditure explains that 10% change in government expenditure causes 4.105% change in the price level with 27.9% explanation of the variation in the price level. Also, 10% change in petroleum prices changes the price

level by 2.04% and 41.9% variation in price level is explained by petrol price changes.

Sharma (2000) opines that prices are market signals in a perfectly competitive market situation. Markets of goods, foreign exchange and factor services are so interlinked that efficiency in on will have its impact upon others. But the market imperfections caused by bottlenecks, rigidities, malpractices and the infrequent intervention of the state in the price regulating process make the gaps in the markets of foreign exchange, capital fund, labor and goods-consumer, capital and intermediate inputs the most likely cases in every society. The problem is even more serious in a country like Nepal where supply bottlenecks, rigidities and geographical and other fragmentations also cause the market imperfections.

The prices are pulled up either from the supply side or from excess demand pressure in Nepal. The gap between the demand for and the supply of goods and services is aggravated by the presence of open border with India.

From the supply side the factors that push price include high cost of production, high tax rate, high transportation cost, high import value, high profit margin, high factor prices, expectational forces and devaluation of NC.

In order to suppress these factors, Sharma, including other measures, has suggested for the increase in the production efficiency and physical flaws. According to him the demand side price pull factors include high power money, increased consumerism, donation from government to political groups, growing size of government recurring expenses, etc. For the management of the demand side price problem, the important measures suggested are as follows:

i) High taxes on luxurious goods and unproductive expenses.
ii) Control of money supply and government deficit within certain limit.
iii) Stress on capital budgeting of foreign aid, loan and foreign exchange.
iv) Reduction in government donations and transfers to the political groups and public enterprises, etc.

Regarding the structure of prices in Nepal the study mentions primarily the demand side and the supply side forces. The demand side force of inflationary trend includes high rate of population growth, increase in money supply, high growth of government expenditure, growing size of government budget deficit, growing foreign aid and increasing consumerism, while the supply inflation arises out of inelastic supply of goods and devices as caused by the low response of the productive forces at home and the high external dependencies. The other factors are taxes, raw material costs, import price and the supply bottlenecks which have led the economy further to generate inflationary expectations even for future years. This has resulted in black marketing systems also.

Pant (1978) has attempted to develop a model of general price level for Nepal and shows that not only Indian prices but also domestic factors are responsible for price rise in Nepal. In the model the explanatory variables are money supply (current as well as one year lagged; M_t and M_{t-a}), real income (Y_t), expected rate of inflation (P_t*), Indian wholesale prices (IP_t) and the dependent variable is the general level of prices. Narrow definition of money supply has been considered to define money supply. He also uses the GDP at constant prices as a proxy for real income with base year 1964/65. He uses three months lagged Indian wholesale price index as Indian prices into the model. He calculates the expected rate of inflation by using the following formula.

$$P_t^* = P_t \frac{P_t}{Pt-1}$$

Where, P_t* = expected rate of inflation

His main conclusions were that rising money supply has no significant impact on the current price level but with a lag, 10% rise in the money supply causes 1.3% rise in the price level. Growth rate of GDP and the price level are inversely related and every 10% increase in GDP reduces the price level by about 10%. Direct effect of Indian price is very little. A 10% increase in the Indian price causes 1.2% rise in Nepalese price index. Regarding the expected rise in prices he concludes that rise in domestic price level brings about rise in the level of expected prices. Rise in price will create

artificial shortages of goods in the markets. This will raise the level of prices further which makes a rise in price expectation and again increase the expected cost of holding money balance, which in turn, a further rise in prices. Every 10% increase in expectation produces 6.5% rise in actual price index.

According to Neupane (1992) in order to determine whether the inflationary process in Nepal is adequately explained by the monetarist hypothesis or the analysis needs to be further supplemented by a study of the structural factors, he has examined both the monetarist and structuralist hypothesis.

Covering the period of 18 years from 1971 to 1988, he got the empirical results by using the ordinary least squares method. In the empirical findings the monetarist model suggests that one year lagged money supply and cost of holding real balances are the important explanatory variables to explain the causes of inflation in Nepal. So it has been suggested that monetary policy can be an important instrument to control inflation.

Regarding the structural reasoning of inflation in Nepal, he has selected one year lagged changes in output in commodity producing sectors, change in the import price index lagged one year, change in government budget deficit and the change in the cost of holding money as the explanatory variables.

The regression results of the monetarist model are as follows.

$P_t = 1.75 + 0.13M_t + 0.38M_{t-1} – 0.52M_{t-2} – 0.11Y_t + 0.33C_t$

(0.51) (0.88) (2.68)* (-1.51) (-0.34) (2.79)*

$R^2 = 0.71$; F= 5.88 ; DW = 1.41

*denotes statistically significant at 99% confidence level.

Figures in parentheses are t statistics.

Khatiwada (1994) has studied the inflationary situation in Nepal by choosing CPI and GDP deflator as the dependent variable and money supply, real income, Indian

wholesale price index, import price index, government expenditure, per capita output as explanatory variables. Taking data from FY 1965/66 through FY 1989/90, and considering FY 1974/75 as the base year he has done the analysis taking all the time series in first difference of the natural logarithms of their values.

He regards two main competing groups- monetarist and structuralists- that explain the inflation in developing countries. In order to study the long run relationship between the dependent and the explanatory variables and to examine the exact length of lag and the nature of impact distributed long-run analysis has also been done by the method of moving averages and Almon distributed lag model.

His short-run analysis including the rate of inflation and money supply reveal the following most predictable and stable relation.

$\Delta \ln P = 0.016 + 0.462 \Delta \ln M_1$

(0.66) (2.96)*

$R^2 = 0.244$; F=8.76; DW = 1.78

*denotes significant at 5% level.

Dividing the period into 1965/66 – 1976/77 and 1977/78 – 1989/90, he has performed Chow-test to examine whether the coefficients were significantly different over the two periods. The results have shown that the coefficients differed significantly for the two periods. From this he has concluded that money price relation is weak and unstable in the short-run.

The results of his short-run analysis can be summarized as below:

i) Of the two definitions of money supply, narrow money (M_1) explains inflation better than broad money (M_2).

ii) The relationship is more stable and predictable with rate of inflation measured by changes in CPI. M_2 has a stronger relation with GDP deflator than with the CPI.

iii) Real output has an insignificant dampening effect on rate of inflation measured by CPI. The conclusion of his long- run analysis is that the maximum length of the time lag that money continues to have positive impact is of two years and for a longer lag the effect is negative.

The study accommodates the influence of world inflation by taking import price index, Indian wholesale price index and exchange rate as the explanatory variables and the rate of domestic inflation as the dependent variable.

The regression result including Indian wholesale price index (WPI) is

$\Delta \ln P = -0.008 + 0.464 \Delta \ln M_1 + 0.330 \Delta \ln WPI$

(-0.32) (3.19)* (2.39)*

$\bar{R}^2 = 0.377$; F = 7.95 ; DW = 1.91

*significant at 5% level.

The coefficient of WPI is significant at 5% level and the explanatory power has also been improved thereby indicating WPI also as an explanatory variable for inflation in Nepal and it is considered as a cost-push factor. When weighted average exchange rate index (WXR1) is included the estimating equation modifies to

$\Delta \ln P = -0.007 + 0.355 \Delta \ln M_1 + 0.446 \Delta \ln WPI + 0.193 \Delta WXR_1$

(-0.33) (2.45)* (3.2)* (2.1)*

$\bar{R}^2 = 0.456$; F =7.42 ; DW = 2.12

*significant at 5% level of significance

Figures in parentheses are t ratios.

Since the coefficient on WXR_1 is significant and the explanatory power has increased, it has been concluded that exchange rate is also one of the major determinants of inflation in Nepal.

As for the structural variables, Khatiwada has mentioned per capita real output (QPC) as a variable representing per capita supply of food grain, government expenditure and lagged rate of inflation. The empirical results of the regression of rate of inflation on growth rate of money supply, per capita output, import price index and government expenditure is

$$\Delta \ln P = -0.013 + 0.374\Delta \ln M_1 - 0.456\Delta \ln QPC + 0.274\Delta \ln IPI + 0.114\Delta \ln GE$$

(-0.53) (2.24)* (-1.46)* (2.51)* (0.92)

$\bar{R}^2 = 0.41$; F =4.93 ; DW = 2.2

*significant at 5% level of significance

The above result shows that GE and QPC have insignificant effect on inflation.

To study the direction of causality between money and prices, two types of causality tests, viz Granger and Sims tests are performed and the results derived have shown that the direction of causality is unidirectional from money to prices and there is no feedback effect from prices to money.

Pandey (2005), based on various theoretical and empirical analysis about historical background, determinants of inflation and controlling measures of inflation in Nepalese context using many econometric models, has drawn some conclusions. A review of price movement during the period 1973 to 2004 revealed that inflation in Nepal stood at an average of 9.0% with a standard deviation of 5% out of this period, 12 years witnessed double digit inflation and only in one year (1975/76), inflation was found to be negative. Cumulative inflation has been more than 288% during the same period.

An econometric analysis has identified that the domestic structural factors have been the major causes of inflation in Nepal. Empirical results confirm that the Indian prices, money supply and exchange rate changes are the most significant determinants of inflation in Nepal. Moreover, inflation in Nepal has long run relationship with money supply, Indian wholesale price index (WPI), government expenditure, real

GDP and exchange rate. The conventional measures of price consumer price index (CPI) cannot, however be isolated from the supply shock effect on the price movement with which monetary policy has negligible relationship. For the accountability and credibility of the policy with regard to price stability objective, there should be measurement of core inflation, eliminating discretionary effect of supply shocks. Hence, monetary policy needs to set a single goal of price stability, adopting inflation targeting regime.

Khatiwada (1994) has also made various empirical studies about Nepalese monetary policy and its impact on key macroeconomic variables by using reliable statistical models. In this study, he has concluded that changes in the money stock are a stable function of changes is disposable high-powered money. As excess reserve ratio has remained crucial on the growth of money multiplier and money supply is almost independent of interest rate changes, which affect currency ratio. The strong explanatory power of narrow money over broad money in the regression of nominal income with monetary variables indicates the superiority of narrow money over broad money as an appropriate policy variable.

The growth of money stock has not been found to exert one-to-one positive effects on the growth of price level due to open nature of the economy and non-monetarization, which indicates Nepales inflation, is related to Indian inflation and devaluation of NC. The one-to-one negative domestic credits on reserve inflow apparently indicate that any monetary disequilibrium will be self correcting and any increase in real income and prices would lead to positive impact on reserve inflow and consequently higher money supply. The study indicates that net domestic assets are the major monetary policy indicators because a large chunk of high powered money comprises of net domestic assets and M1 and net domestic assets are mostly autonomous of other monetary developments.

Sutihaar (2069) has used the GDP deflator as inflation indicator which has been found to vary from 100 in base year 2000/01 to 229.5 in current year 2011/12. The rate of inflation has been estimated to fluctuate from 3.1% to 16.3%. It has been estimated minimum 3.1% in FY 2003/04 and maximum 16.3% in FY 2008/09. The annual

average rate of inflation has been calculated as 7.95% during the study period. The paper recommends that more efforts be taken to produce more goods services to neutralize the rate of inflation on creeping motion.

Gokal and Hanif (1994) concluded as follows. The literature survey provided some useful insights into the effects of inflation on growth, including the magnitude. In Michael Sarel's paper (1996), he found a structural break at 8 percent, where after inflation impacted negatively on growth. Khan and Senhadji (2001) found that the threshold inflation levels for industrial and developing countries at 1-3 percent and 11-12 percent respectively. These results amongst others provide useful insights into the relationship between the two variables and to determine the advantages of maintaining price stability.

Looking specifically at Fiji's economic and inflation performance, the less than robust link between the two variables is not surprising, given the current structure of the economy and factors which influence inflation. Correlation coefficients showed only a weak negative link, while causality was shown to run from economic growth to inflation. With the majority of Fiji's inflation being imported, the influence of domestic factors (being unit labour costs and to a lesser extent the output gap) is limited.

2.2.2 Remittance

Ojha (2013) has mentioned increasing contribution of remittance in Nepalese Economy. Nepal, after becoming a member of the UNO in 1955, extended its cordial relationship with the rest of the world and rapid pace of globalization paved the way for Nepalese workers to go aborad for employment and with advent of 1990 A.D., thousands of Nepali workers began going abroad for employment and sending money home. The amount of remittance received by Nepal in 1975/76 was Rs. 231.3 million which rose by twice in 1985/86. According to the Department of Labor (G)N) more than 55000 Nepali youths had gone to foreign countries other than India in 2000/01. This number rose to 241 thousand in 2007/08 and it further increased to 325 thousand in the year 2008/09. The amount of remittance received by Nepal in 2000/01 was Rs.

42.68 billion and in the first six months of 2007/08 this amount rose to Rs. 57.06 billion while in first six months of 2008/09 it increased to Rs. 94.3 billion which registered a growth rate of 65.3%.

Albeit, an ever increasing volume of export trade is a reliable source of foreign exchange and capital inflow for a growing economy like Nepal but owing to various inside and outside factors the Nepalese export trade has remained sluggish since year ago. However, the increasing inflow of remittance is contributing to maintain a bit satisfactory BOP position of Nepal. Remittance money is contributing about half of the volume of foreign exchange earned by tourism and one fifth part of Nepal's total export trade (NRB 2062).

Table 2.1: Ratios of Remittance vs. GDP and Exchange earnings

Year	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	09/10
Remiitance/ GDP ratio	10.7	10.5	11.5	11.8	12.2	15.6	14.2	18.0	18.7	19.1
Remiitance/ Exchange earning ratio	30.0	35.0	39.5	39.6	43.0	49.8	50.1	50.0	55.3	56.6

Source: NRB, Reports of various years and Ministry of Finance, Economic Surveys of various years.

According to the table above, some years ago export trade was the principal source of Nepal's foreign exchange earning though it was not sufficient, but in recent years inflow of remittance has taken its place. In the year 2000/01 the contribution of remittance to Nepal's foreign exchange earning was approximately 30% which increased to 50.8% in 2007/08 and the share of remittance in Nepal's total foreign exchange earnings rose to 54.8% in the first six months of 2008/09. This growth rate of remittance sheds light on its importance for an import based economy. Moreover, remittance has contributed a great deal to the growth rate of GDP of Nepal. The first row of the above schedule shows that the ratio of remittance to Nepal's GDP is increasing since some years here. In 2000/01 this ratio was 10.7% which increased to 17.4% in 2007/08 and again to nearly 19% in 2008/09 (NRB, 2068). This ratio reached to 18.7% in 2008/09 and 19.1% in 2009/10.

Prior to 2005 the time series of labor employment in most of the countries, especially in the USA, Japan, Malaysia, South Korea and gulf countries was increasing where several Nepali migrant workers were getting job. But after 2006/07 an economic havoc overlapped the smoothly going investment and employment trend in those countries owing to which they cut off the demand for foreign workers in a large scale. The global recession influenced Nepal too. According to Department of Labor (GON), more than 23 thousand workers had left Nepal for foreign employment in 2009 but this shunned down to 17 thousand in the following year, since Malaysia, South Korea and other gulf countries are major destination for the Nepali workers. The recessionary wave experienced by these countries compelled them to cut off labor employment. As a consequence thousands of Nepali migrant workers working abroad lost their job and returned home. Consequently, Nepal's remittance earning squeezed and Nepal's BOP ran down to deficit at the end of 2011 (NRB 2011). However, from 2012 the economic scenario showed improvement to some extent and the outflow of Nepali migrant labors is increasing again. But some economists still argue that sporadic financial crisis in some European countries may again push them into recession.

The article concludes with several risks involved regarding high dependency on remittance money. Because of the persistent outflow of young workers several plots of formerly cultivated land have remained barren. The workers who have retired from abroad do not have any productive skill. Most of the Nepali workers are unskilled and professionally untrained because of which they do not get reasonable wages on one side and they have to do highly risky jobs on the other side. Many of them have lost their life and property in the past. So far the destination of the migrant Nepali workers is confined to a few countries which may be risky in the sense that if ever a deep recession occurs in these countries, the Nepali workers working there would loose their jobs. Foreign employment is not a long-run solution to the underemployment problem. It is, therefore, necessary to create opportunities of employment within the country. Export trade can be expanded and diversified and the tourism sector can be developed in the country's potential areas that may fetch enough foreign exchange. Upadhaya (2007), says that the income of migrants from the foreign employment has

not only increased their personal income but also their social prestige. People from rural area who were previously below the poverty line have succeeded to uplift their economic standard receiving the opportunity of foreign employment (Gaudel, 2006). Migration and remittances may affect consumption in a number of ways through transfers, higher local wages, and higher demand for services or locally produced goods, among others (CBS, 2006).

Table 2.2: Effect of Change in the Incidence of Remittances on Poverty Rates

Headcount poverty rate in 2003/04				
Household type (in 2003/04)	Actual	Estimated		Change in headcount poverty rate (percentage points)
		Remittances are at actual 03/04 level	Remittance are at 95/96 level	
No Migrants	32.2	31.3	31.3	0.0
With migrants	22.8	23.6	27.8	-4.2
With migrants	31.1	29.9	49.4	-19.5
All Households	30.9	30.1	34.0	-3.9

Source: CBS, (2006)

The table in the previous page presents the simulated effect of change in the incidence of received remittances between 1995/96 and 2003/04 on headcount poverty rate of different types of households according to their migration status in 2003/04. If the pattern of receiving remittances remained the same as in 1995/96, then poverty rate among households with internal migrants would have been higher than the observed one by 4.2 percentage points, whereas poverty rates among households with migrants aboard (including India) would have been higher than the observed one by 20 percentage points. Overall, the increase in the incidence of remittances accounts for a 3.9 percentage points decline in poverty rate, or over on third. Importantly, increases in remittances coming from outside of Nepal have reflected stronger impact on poverty than increases in internal remittances.

The above analysis and discussion suggests that remittances are typically helpful to meet specific needs of the migrants' family members and thus leads to increment in their standard of living. The lower class or poor households may finance their remittances to fulfill their basic needs, such as in consumption, housing, children

education and health care and to pay back loan. For the middle class or rich households too this may provide opportunities either to lend loan for individuals going abroad or to make capital investment for businesses and entrepreneurial activities. Likewise, the remittances may have spillover benefits in the community if spent on locally produced good or services. From macroeconomic point of view, this source may be more stable than capital flows. It is said that remittances represented more than 10 percent of GDP in Nepal in the late 1990s. Moreover, it would be highly beneficial to the country, where there are natural calamities, political conflict, people war, low investment in entrepreneurial activates and economic recession. However, the downside of out migration cannot be neglected. There are growing evidences that the shortage of labor due to emigration has not only compelled to keep barren land in rural areas but also hamper agricultural productivity and induce consumerism which ultimately puts pressure on import and growing trade deficit.

No doubt, remittance is playing an important role in improving living conditions of the households in Nepal. Given its significance to the economy, further research on economic benefits of migration and remittances should be encouraged to ensure that government and financial sector, strategies, policies and instruments maximize the full potential of remittances, a tool for development.

Sutihaar (2012), in his study has taken into account the time series data of net foreign employment from 2058/59 to 2066/67 for estimating the growth rate of foreign employment, test the significance of net growth rate and check the existence of autocorrelation among error terms.

Within the specified period, the study showed that the average annual growth of foreign employees and growth rates were calculated to be 189000 and 27500 respectively. The standard error of growth rate has been estimated as 2.4848 thousand. The calculated value of t(b) is 11.0673. The critical value of t-statistic at ∞ = 5% level of significance with degrees of freedom (ע) = 6 is 2.477 (two tailed test). Since calculated value of t is greater than critical value of t, the null hypothesis has been rejected and the alternative hypothesis is accepted. From this statistical analysis,

it can be concluded that annual rate of foreign employment is significant at 5% level of significance during the study period.

Bussolo, Molina and Lopez (2007) opine that existing empirical evidence indicates that remittance have a positive impact on a good number of development indicators of the recipient countries. Yet when flows are too large relative to the size of the recipient economies, as those observed in a number of Latin American countries, they may also bring a number of undesired problems. Among those probably the most feared in this context is the Dutch Disease. The findings also suggest that remittances indeed appear to lead to a significant real exchange rate appreciation.

Richard and Page (2008) have inferred four key findings in their study: International migration- defined as the share of a country's population living abroad- has a strong, statistical impact in reducing poverty. On average, a ten percent increase in the share of international migrants in a country's population will lead to a 1.9 percent decline in the share of people living in poverty ($1.00 person a day). Distance to a major labor receiving region- like the United States or OECD (Europe) – has an important effect on international migration. Developing countries that are located closest to the United States or OECD (Europe) are also those countries with the highest rates of migration. An inverted U-shaped curve exists between level of country per capita income and international migration. Developing countries with low or high per capita GDP produce smaller shares of international migrants than do middle- income developing countries. There was no evidence that developing countries with higher levels of poverty produce more migrants. Because of considerable travel costs associated with international migration, international migrants come from those income groups which are just above the poverty line in mid-income developing countries. International remittances- defined as the share of remittances in country GDP- have a strong statistical impact in reducing poverty. On average, a ten percent increase in the share of international remittances in a count of GDP will lead to a 1.6 percent decline in the share of people living in poverty.

Adams and Cuecuecha (2008) have discovered three major findings in their study regarding the economic impact of international remittances on poverty and household

consumption and investment in Indonesia: First, using an instrument variables approach to control for selection and endogeneity, it finds that international remittances have a large statistical effect on reducing poverty in Indonesia. Second, households receiving remittances in 2007 spent more at the margin on one key consumption good- food- compared with what they would have spent on this good without the receipt of remittances. Third, households receiving remittances in 2007 spent less at the margin on one important investment good- housing- compared with what they would have spent on this good without the receipt of remittances. Households receiving international remittances in Indonesia are poorer than other types of households, and thus they tend to spend their remittances at the margin on consumption rather than investment goods.

Nimi and Ozden (2006) consider among other things, the significance of the level of migration, the education level of migrants, and financial sector development in determining remittance. Given the potential endogeneity problems, the migration and financial development variables are instrumented in the estimation. They find that the migration level is the main driver of remittance flows, even after controlling the endogeneity bias through instrumental variable estimation. The authors also find that the education level of migrants representation to the population in home countries, the size of the economy, and the level of economic development of the recipient countries adversely affect remittance flows. While they find the effect of financial sector development to be positive, its significance is strongly supported in their analysis.

Jansen, Vacaflores and Naufal (2009), have examined the impact of remittances shock on the main macroeconomic aggregates of a small open economy. Their model uses a scholastic limited participation model to generate dynamics that are consistent with the empirical literature, like the increase in inflation, consumption, and leisure. However, the remittances shock generates a prolonged decline in GDP, which only diminishes when remittances are a larger percentage of GDP, the fraction of remittances directed towards investment increases, or when the fraction of labor income that remittances represent is reduced and is overturned when the persistence of the remittances shock is shortened.

A typical remittances shock increases consumption and lowers work effort on impact, improving the utility of the representative household. It also results in a small one-period increase in inflation that forces the domestic currency to depreciate on impact, but since it also creates liquidity effect, it gives way to a subsequent appreciation through the uncovered interest rate parity condition. However, the decline in the interest rate is not strong enough to increase investment, given the reduction of the marginal product of capital, such that the persistent decline in labor combined with the initially lower capital leads to a persistent drop in output.

The literature on remittances has been trying to measure the contribution of these types of inflows in the economic growth of the receiving countries, and our results provide further evidence that such inflows can have a detrimental effect on labor, and thus on economic growth. The results indicate that the labor response plays a central role in the determination of output, but through its impact on the marginal product of capital it also affects the amount of investment, and thus capital, that the receiving country will conduct. However, since remittances also provide an inflow of financial resources to the financial system, it also generates a liquidity effect that makes borrowing more accessible. When remittances are increasingly geared towards investment capital accumulation will be enhanced, such that the detrimental effect on output would be attenuated. The negative impact on output will be also reduced when remittances are a larger share of GDP or a smaller fraction of labor income. This finding reinforces current initiatives that are trying to direct more remittances towards investment.

This prolonged deterioration of GDP in response to the remittances shock is present in all of specifications except in the case in which a more transitionary shock is allowed. When the persistence parameter of the remittance shock is lowered, the decline in labor is attenuated, and its subsequent recovery accelerates. Capital accumulation is also enhanced when the remittances shock is more transitory. These two dynamics produce a smaller initial decline in output, but also generate a faster recovery of output in the following quarters, with output actually rising above steady-state levels sooner when the persistent parameter is reduced. This last finding suggests that the persistence of remittances shock is crucial for the long-term response of GDP, with

long-term continuous flows of remittances giving way to more permanent increases in leisure and more transitionary shocks allowing for quicker recoveries and even improvements in GDP.

Remittances offset chronic balance of payment deficits, by reducing the shortage of foreign exchange. These transfers can help to ease the often crucial restraint imposed on the economic development of the migrants' home countries by balance of payments deficits. They have more positive impact on the balance of payments than other monetary inflows (such as financial aid, direct investment or loans), because their use is not tied to particular investment projects with high import content, bear no interest and do not have to be repaid. In addition, remittances are a much more stable source of foreign exchange than other private capital flows and for certain countries they exhibit an anti-cyclical character (Buch et al., 2002; Buch and Kuckulenz, 2004; Nayyar, 1994; Straubhaar, 1988).

Developing countries quickly recognized this obvious and clearly estimable positive balance of payments effect of remittances, and measures were taken to increase such inflows of foreign exchange. But such measures must be implemented with care, because apart from the positive balance of payments effects, remittances have an impact on the economic activity in the home country. Depending on how they are spent or invested, their effects on production, inflation and imports will be different.

A crucial factor in this respect is the extent to which the additional demand induced by remittances can be met by expanding domestic output. The flexibility with which domestic supply reacts to extra demand will determine whether remittances will have positive employment effects or adverse inflation effects, and whether additional imports will be necessary.

One of the negative effects of remittances on the current account is the "boomerang effect". This occurs when remittances induce an increase of imports and trade balance deficits in the remittance-receiving country. However, most scholars disagree that it is the remittance-induced imports that cause these trade balance problems. The propensity to import can also increase as a consequence of the general development of

the economy, of a structural change in the production of consumer or investment goods, or of the international divison of labour. Neither is the "boomerang effect" supported by empirical research. Evidence shows that in south European countries, remittance-induced imports between 1960 and 1981 accounted for minimums of 1% in Spain and Italy, to maximums of 4.9% in Greece and 6.2% in Portugal (Glytsos, 1993; Straubhaar, 1988).

Another negative effect can be produced where remittances generate demand greater than the economy's capacity to produce. When this demand falls on tradable goods, remittances can induce an appreciation of the real exchange rate. The overvalued exchange rate reduces the competitiveness of the domestic industries in the foreign markets (by expensive exports), in the home markets (by cheap imports), and shifts resources from the tradable sector into the non-tradable sector, so-called Dutch Disease effect. This may further lead to balance of payments pressure, a slower growth of employment opportunities, and consequently to a further increase in the incentive to emigrate. Empirical evidence from Egypt, Portugal and Turkey supports such fears, but the effect remained marginal in most of the observed cases and periods (McCormick and Wahba,2004; Straubhaar, 1988). A possible reason for an insignificant Dutch disease effect of remittances is that the additional import of cheap capital goods may increase productivity and therefore improve the competitiveness of domestic products. Moreover, the imported capital goods may be used to substitute other imports and/or produce exportable goods.

Further, in a system based on non-convertible domestic currency, the privilege of holding foreign currency in corroboration with inflationary tensions may have adverse consequences in monetary terms. For example, in the countries of the Maghreb, the development of black market for foreign exchange, the increased use of swap transactions in the foreign and domestic trade, and the very high prices for foreign goods lead in the 1980s and beginning of the 1990s to a situation in which foreign exchange was used for the domestic exchange for luxuries, or to buy services in order to obtain them more rapidly. Under such circumstances of currency substitution (known in literature as "dollarization" or "euroisation"), the authorities of countries

with a non-convertible domestic currency used to devaluate the national currency periodically in order to attract remittances from emigrants.

According to the "International Migration Outlook: SOPEMI 2006 edition" the following conclusion regarding the complex phenomenon of international migrant remittances were drawn.

In addition to direct impacts of remittances on migrant sending economies, i.e. poverty reduction, offset of balance of payments deficits, reducing of foreign exchange shortages, productive investments, etc., remittances also have positive indirect effects. These are the easing of capital and risk constraints, the release of other resources for investment and the generation of multiplier effects of consumption spending. Despite this, remittances are not a panacea and cannot substitute sound economic policies in developing countries. An economic environment that encourages emigration also limits the development impact of remittances in migrant sending areas. Productive investment does not depend on income, but rather on market infrastructure, interest rates, stock prices, macroeconomic policies and stable economic growth

According to the study conducted by Seddon, Gurung and Adhikari (2002), remittance constituted about half of the value of the foreign exchange earned by tourism and a fifth of total exports of Nepal. One could reveal the fact that the remittance amount in total could remain as high as official figures. It is because under the heading of remittances, there also comes the items such as gold, silver, other ornaments of luxury items sent by Nepalese migrants to their family members and dependents either from India or from the third countries. The census of 1981 showed that about 66.5 percent of the absentee Nepalese in India were engaged in some kinds of services. In 1991 census of Nepal, there were 650,337 absentee population of which 81.2 percent were in India and rest abroad. This constituted around 3 percent of the active labor force, estimated in 1996 at around 11.7 million (Seddon et al. 2002: 19-40)

Similarly Katz opines that treating remittances as a platform giving diasporas the choice of directly converting those funds into products and services back in their homeland allows them to make well informed decisions on the use of their hard-earned dollars. This is not about "top-down" or "North-South" control. It is about value-chain control. The only choice with traditional money transfer services is to remit cash and the only control is to trust and pray. It is important to point out that the transformation in our thinking about remittances and development has been driven from the "bottom-up" influenced by the stake=holders in the remittance value chain. There are two primary beneficiaries of remittances : the first beneficiary is the third party (friends or families) receiving the funds (or equivalent) and the second beneficiary is the "remitter" or the Diaspora. Both beneficiaries have needs that have to be supported by the remittance platform. It is a known fact that most of the remittances sent home are used for daily consumption by the first beneficiary. This use of remittances also meets the needs of the second beneficiary by providing their desired support for their family. The primary developmental impact of this daily consumption is the spending of the money (directly or indirectly) with merchants in the local economy (Katz, 2006:47). Income from export of goods and services used to be the major source of foreign currency earning till few years ago. In recent years, however, the remittance income has taken the lead in this area. Since last few years, remittance income is playing the main role for the foreign currency earnings and favorable impact on Balance of Payments.

2.2.3 Remittance and Inflation

Tufail (2013) has tried to examine the impact of remittance on inflation and its different categories, namely, food inflation, footwear and textile inflation, housing and construction inflation. Accordingly, four vectors were formulized to capture the determinants of overall inflation and its different categories with particular focus on remittances. The study employed Johansen (1990) and Johansen & Juselius (1990) cointegration technique to check the existence of long run relationship between remittances and inflation. Vector error correction technique was further applied to examine the extent and direction of relationship between variables and to check the stability of the models. The results indicated the existence of one cointegrated vector

for all equations. Moreover, remittances, money supply and real per capita income are found to have positive impact on inflation and its different categories. The results revealed that among different inflation categories food inflation is most affected and housing & construction inflation is least affected by remittances. Budget deficit is significant in reducing foot wear and textile inflation only. On the other hand trade openness is effective in reducing all types of inflation by same magnitude and strength. Given the inflationary nature of remittances it becomes necessary for government to channelize the remitted funds into productive investment to avoid surge in demand pull inflation.

According to "International Migrant Remittances and Their Role in Development" published by International Migration Outlook: SOPEMI 2006 edition, remittances do not only have positive effects on the source economy. If remittances generate demand greater than the economy's capacity to meet this demand, and this demand falls on non-tradeable goods, remittances can have an inflationary effect. In Egypt, for example, the price of agricultural land rose between 1980 and 1986 by 600% due to remittances (Adams, 1991). Along with the positive effects remittances had on Jordan's economy, in the years 1985, 1989 and 1990, they seem to have intensified recession very strongly and generated negative growth rates of over 10%. Other potential negative welfare implications of remittances are the encouragement of continued migration of the working-age population and the dependence among recipients accustomed to the availability of these funds. All these could perpetuate an economic dependency that undermines the prospect for development (Buch et al., 2002). Besides because remittances take place under asymmetric information and economic uncertainty, it could be that there exists a significant moral hazard problem leading to a negative effect of remittances on economic growth. Given the income effect of remittances, people could afford to work less and to diminish labor supply. Using panel methods on a large sample of countries Chami et al. (2003) found that remittances have a negative effect on economic growth (which according to the authors indicates that the moral hazard problem in remittances is severe).

Balderas and Nath (2008) in their research regarding inflation and relative price variability in Mexico have derived generalized impulse responses from the estimation

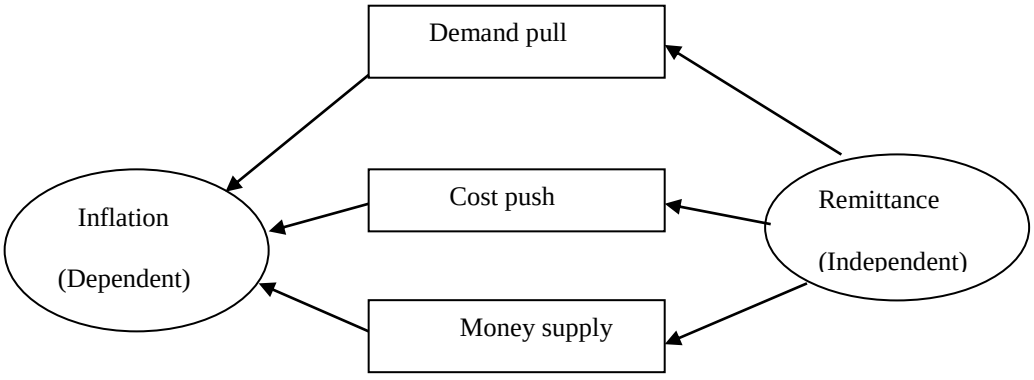
of a vector autoregression (VAR) model using monthly data between 1995 and 2005 for Mexico, to examine the inflation- relative price variability (RPV) relationship, and to investigate if remittances could account for the observed relationship. While the positive relationship between inflation and RPV is a robust result, remittances are found to have significant positive effects on both inflation and RPV. Thus there is some evidence to support the fact that remittances could generate a positive relationship between inflation and RPV.

2.2.4 Conceptual Framework

Perhaps, another usually unnoticed effect of remittance is on the inflationary pressure it has inflicted in the recent times. With increased income aggregate demand usually goes up. But in absence of increment in supply to match that demand, the prices rise through the mechanism of demand pull inflation. Not only that but with higher wage offers even at lower levels in foreign countries like Malaysia, Qatar, Dubai, etc. people find it luring to work abroad rather than in Nepal. That is even more in the case of skilled workers. With increasing tendency of such workers to go abroad, the shortage in labor market forces the Nepalese employers to increase the wage just in order to retain them. That again contributes to inflation through cost-push mechanism. So it seems that one way or other, remittance is contributing to the inflation in Nepal. Similarly, money supply also increases through remittance creating ample chances for inflation.

The above mentioned fact has been presented in the illustration below.

Fig 3.1.: Schematic diagram of theoretical framework



CHAPTER III

RESEARCH METHODOLOGY

This chapter basically describes the framework on which this research work has been carried out and presented. Several aspects like research design, data collection, calculation and analysis, graphical representation of the theoretical concept, detail description of mathematical and statistical tools used in accordance to the objective of the study will be discussed.

3.1 Research Design

As mentioned in the title of the GRP itself, this research deals with the inter-relation between remittance income and inflation. The design adopted in this research work can be said as analytical research design. The two main variables, remittance income and inflation have been compared with the aim of discovering interlinkages between the two. Both correlation and cause-effect approach have been taken.

Under the correlation study, attempt has been made to establish the direction, magnitude and form of the observed relationships. It has been checked whether the variables are closely related, moderately related, or completely unrelated.

For the study under the cause-effect analysis, the variables considered are categorized into dependent and independent variables. In this case, remittance is the independent variable and inflation is the dependent variable.

The extent of the cause-effect relationship can be measured with the help of several statistical tools such as regression equation, error studies under the regression analysis, analysis of variance, etc.

It should be well noted here that inflation is not an effect of a single factor. As mentioned in the literature review portion, there are several factors that contributes to

the inflation. This study concentrates on the extent of influence of remittance, among several other factors, to the inflation effect.

3.2 Variables, Nature and Sources of Data

In order to build up a relationship, quantitative approach has been taken. Under the quantitative approach several statistical analyses have been carried out. The variables thus used for statistical analysis are namely remittance and inflation. Among these two, remittance is the independent variable and inflation is the dependent variable.

Remittance is measured in terms of million Nepali rupees. If remittance from different countries is measured in terms of foreign currency of the respective countries, then it is not convenient to collectively consider those different units for the analysis. Therefore converting it to a common unit i.e. NRs. gives convenience for calculations.

Similarly, Inflation for this analysis is measured in terms of Consumer Price Index (CPI). Although there are other methods of measuring inflation such as GDP deflator and PCI methods, CPI has been undertaken for this study because of its inclusiveness and categorization into various groups such as “Food”, “Non-food and Service”, etc.

All the data used for inflation and remittance are the secondary data published through various governmental institutions. The main sources of such data of macro-level are Annual Economic Survey, Economic Bulletins, Special publications which are available from the website of the Ministry of Finance and Nepal Rastra Bank, Nepal.

3.3 Statistical Procedure

Several statistical analysis have been carried out between the two variables for the study. Those statistical analysis are as follows.

3.3.1 Derivation of regression line

Taking inflation (Y) as an dependent variable and remittance (X) as independent variable the estimated value of Y is given by $\hat{Y} = a + bX$

Besides derivation of regression line using the above mentioned procedure, it has also been derived using the lag effect of remittance on inflation. Usually the impact of cause (i.e. remittance) on effect (i.e. inflation) may not be immediate. Rather there may a time gap between by the time the effect is evident. So the regression equation taking lag effect into consideration has also been carried out as follows.

$\hat{Y}_t = a + bX_{t-1}$

From this functional relationship established through regression equations, the value of inflation can be estimated from the given value of remittance.

For multiple regressions where the independent variable of the previous and the present year affects the dependent variable of the present year, the following type of equation will be formed.

$\hat{Y}_t = a + b_1X_t + b_2X_{t-1}$

3.3.2 Standard Error of Estimates

The standard error of estimates measures the variability of the observed values about the regression line. The standard error of estimate of Y on X is defined as,

$S_{y,x} = \sqrt{\frac{\sum(Y-\hat{Y})^2}{n-2}}$ where, Y = actual value of Y

$\hat{Y}$ = estimated value of Y

n = no. of pair observations

Also, $S_{y,x} = \sigma_y \sqrt{1-r^2}$ where, σ_y = standard error of Y

r = correlation coefficient between two variables X and Y.

3.3.3 Standard Error of Parameters

Similarly, standard error of parameters has been calculated using the following relationship.

Standard error of b i.e. regression coefficient of regression line Y on X is given by

$$\text{S.E. (b)} = \sqrt{\frac{\sum y^2 - b\sum xy}{n-2}} \times \sqrt{\frac{1}{\sum x^2}}$$ where, y= Y-Ÿ and x= X-Ẍ

Standard error of a is calculated as

$$\text{S.E. (a)} = \sqrt{\frac{\sum y^2 - b\sum xy}{n-2}} \times \sqrt{\frac{1}{n} + \frac{\bar{X}^2}{\sum x^2}}$$

Standard error is an estimate of the standard deviation of the coefficient, the amount it varies across cases. It can be thought of as a measure of the precision with which the regression coefficient is measured.

3.3.4 Variation

Total variation is sum of square of the deviation observed Y values about their mean value can be divided into two parts namely: explained and unexplained variation. A certain portion of total variation which is explained due to independent variable is called explained variation. The remaining portion of total variation is explained due to other factors which are not included in regression equation is said to be unexplained variation. Regression equation explains only a part of the total variation of the dependent variable and a part of the total variation (ei = Yi - $\bar{Y}$) remains unexplained.

Total variation or Total sum of square (TSS)

The total variation in dependent variable (Y) is the sum of square of all the deviation of the dependent variable from its mean value. It is the sum of the square of the deviation of actual values of dependent variable (Y) from the mean value ($\bar{Y}$), i.e.,

$$TSS = \sum(Y-\bar{Y})^2 = \sum y^2 = \sum Y^2 - n\bar{Y}^2\sum Y^2 - (\sum Y)^2/n$$

Unexplained variation or Residual or Error Sum of Square (SSE)

The unexplained variation is a part of total variation in dependent variable (Y) which is not explained by regression equation. SSE is the sum of the square of the deviation of actual individual value (Y) from the corresponding estimated value of dependent variable ($\hat{Y}$) ,i.e.,

SSE = $\sum(Y-\hat{Y})^2 = \sum e^2$

Explained variation or Explained Sum of Square (SSR)

The explained variation is a part of total variation in dependent variable (Y) which is explained by regression equation. SSR is the sum of deviation of estimated value of dependent variable ($\hat{Y}$) from the mean value ($\overline{Y}$), i.e.,

SSR = $\sum(\hat{Y} - \overline{Y})^2 = \sum\hat{y}^2$

The total variation (TSS) is the sum of explained variation (SSR) and unexplained (SSE), i.e.

TSS = SSR + SSE.

3.3.5 Coefficient of Determination (r^2) and Coefficient of Multiple Determination (R^2)

The coefficient of determination is the proportion (percentage) of total variation in dependent variable (Y) which is explained by regression line. It is also known as unadjusted coefficient of determination. It is the ratio of explained variation to total variation.

r^2 or R^2 = Explained variation/ Total variation

$$= 1 - \frac{\sum e^2}{\sum y^2}$$

3.3.6 Coefficient of Adjusted Multiple Determination ($\overline{R}^2$)

Coefficient of adjusted determination is the proportion (percentage) of total variance in dependent variable (Y) which is explained by regression line. It can be calculated by

$\overline{R}^2 = 1 - \frac{\sum e^2}{\sum y^2} \text{ X } \frac{n-1}{n-k}$ where, n = number of observations

k= number of regression parameter

3.3.7 Correlation

Correlation analysis enables us to determine the degree and direction of relationship of two variables. If there is high degree of correlation between the two variables, we cannot say which is the cause and which is the effect. The correlation between two variables may be due to the following reasons.

(i) Both the variables may be influence by one or more other variables.

(ii) Both the variables may influence each other so that neither can be designated as the cause nor the other as the effect.

(iii) The correlation may be due to pure chance. The relationship may be due to chance of coincidence.

In this analysis, Karl Pearson's Correlation coefficient have been used. It is given by

$r = \frac{cov.(x,y)}{\sigma_x.\sigma_y} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$ where, cov. (x,y) = covariance between x and y.

σ_x = standard deviation of x

σ_y = standard deviation of y

$x = X - \overline{X}$, $y = Y - \overline{Y}$

n = no. of pair of observations

Interpretation of correlation coefficient

(i) When r lies between 0.7 to 0.999 (-0.7 to -0.999) there is high degree of positive (or negative) correlation.

(ii) When r lies between 0.5 to 0.699 (-0.5 to -0.699) there is moderate positive (or negative) correlation.

(iii) When r is less than 0.5 (or -0.5) there is low degree of positive (or negative) correlation.

Standard and Probable Error of correlation coefficient

Probable error is a statistical measure of ascertaining the reliability of the value of correlation coefficient. It is used for testing the calculated correlation whether it is significant or not. If r is calculated correlation coefficient in sample of n pairs of observations then its standard error is defined as S.E. (r) $=\frac{1-r^2}{\sqrt{n}}$ and probable error P.E. (r) = 0.6745 x $\frac{1-r^2}{\sqrt{n}}$

If r < P.E. (r) then the value of r is not significant.

If r > 6 P.E. (r) then the value of r is significant.

3.3.8 Analysis of Variance (ANOVA)

This test will check the overall significance of regression equation. In other words, whether the explanatory variables (X) do actually any significant effect on the dependent variables or not will be tested.

Hypothesis setting for ANOVA

H_0: b=0, i.e. the regression line of Y on X is not significant.

H_1: b≠0, i.e. the regression line of Y on X is significant.

Level of significance: 5%

For the test statistics, the variation data used are SST, SSE and SSR.

The ANOVA table will be as follows.

Sources of variation	Sum of squares	Degree of freedom	Mean sum of squares	F- ratio
Due to regression	SSR	k-1	MSC= $\frac{SSR}{k-1}$	F= $\frac{MSC}{MSE}$
Due to residual	SSE	N-k	MSE = $\frac{SSE}{N-k}$	

Decision: If calculated value of F is less than or equal to critical value of F then H_0 is accepted otherwise H_0 is rejected and thereby H_1 is accepted.

3.3.9 Durbin-Watson Test

Durbin-Watson test, also known as D-W test, is used for detecting presence of auto-correlation in error terms. Durbin-Watson statistics named as 'd' is defined as follows.

$$d = \frac{\sum_{t=2}^{n}(e_{t-} e_{t-1})^2}{\sum_{t=1}^{n} e_t^2}$$

where, e_t = residual (error) at the time period t.

$\sum_{t=2}^{n}(e_{t-} e_{t-1})^2$ = the square difference in two successive errors, summed from second observation to the nth observations.

$\sum_{t=1}^{n} e_t^2$ = the sum of square residuals (errors)

This statistics measures the correlation between each residual and the residual for the time period immediately preceding the one interest. In order to test whether the error terms are serially correlated or independent, D-W test is used.

Durbin and Watson had derived a lower bound d_L and an upper bound d_U where if the computed value of d-statistic lies outside the critical values, then there is presence of positive or negative serial correlation (auto-correlation). The value of d_L and d_U depend only on the number of observation n and the number of explanatory variables k.

Setting hypothesis:

Null hypothesis $H_0 : \rho = 0$, i.e., there is no first order positive (or negative) auto-correlation among the error terms. In other words, the error terms are statistically independent, which means error terms are not auto-correlated.

Alternative hypothesis $H_1 : \rho \neq 0$, i.e., there is significant evidence of auto-correlation. In other words, the error terms are statistically dependent.

Level of significance: 5% level of significance i.e. $\alpha = 0.05$

Decision:

i) If $4-d_L<d<d_L$, d is significant and null hypothesis is rejected and alternative hypothesis is accepted, i.e., there is auto-correlation among error terms.

ii) If $d_U<d<4-d_U$, d is not significant and null hypothesis is accepted, i.e., there is no auto-correlation among error terms.

3.3.10 Data Analysis Plan

For the inferential analysis several regression models have been used, which are as follows.

Taking remittance as an independent variable and CPI as dependent variable, simple linear regression models have been derived. This analysis has been carried out in two different models, namely, with and without lag effect of remittance income.

$\widehat{CPI}_t = \alpha + \beta_1 Rmt_t$ (without lag effect)

$\widehat{CPI}_t = \alpha + \beta_2 Rmt_{t-1}$ (with lag effect)

Similarly, multiple regressions in which remittance of previous and current year both have been taken as independent variables to explain the CPI of the current year has been derived using the following model.

$\widehat{CPI}_t = \alpha + \beta_1 Rmt_t + \beta_2 Rmt_{t-1}$

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

This chapter has been organized into two different sections, which are Descriptive presentation of the basic data and inferential analysis.

4.1 Descriptive Presentation of Basic Data

4.1.1 Remittance Income

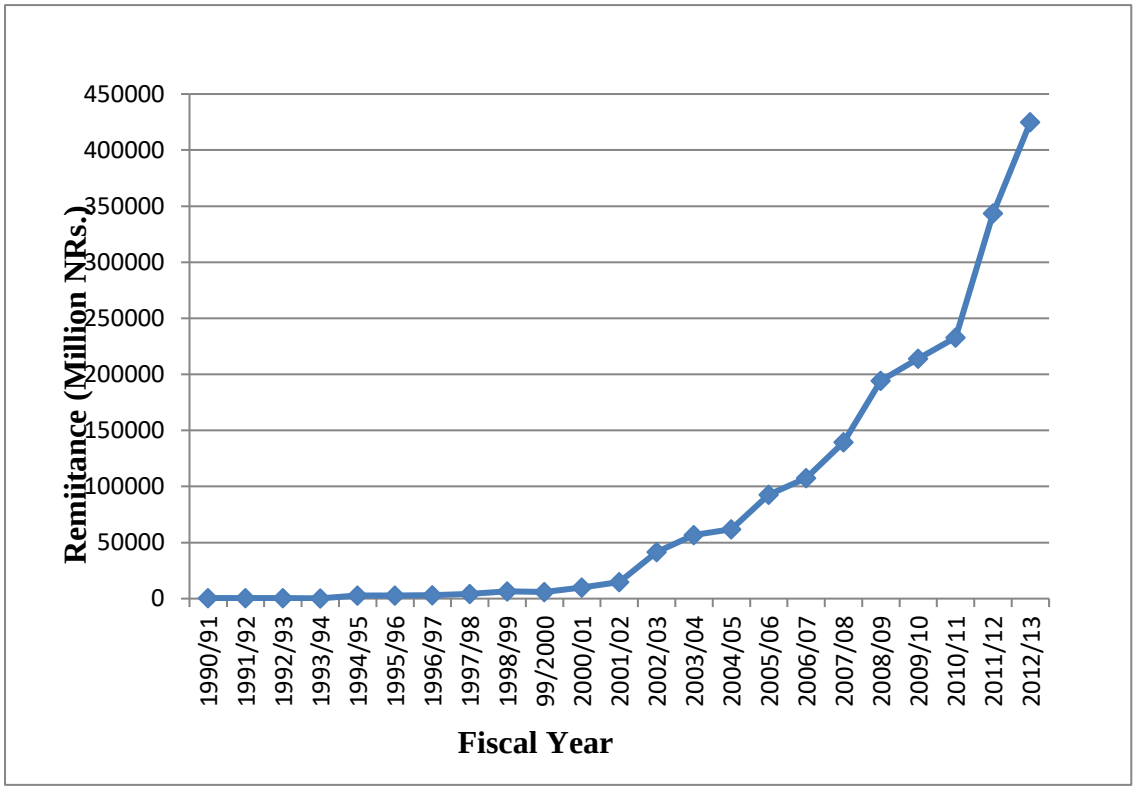
Table 4.1: Remittance income from 1990/1991 to 2012/13 A.D.

S.N.	FY	Remittance (million NRs.)	ΔRemittance	% change remittance
1	1990/91	549.7		
2	1991/92	423.6	-126.1	-22.94
3	1992/93	549.7	126.1	29.77
4	1993/94	223.0	-326.7	-59.43
5	1994/95	2906.7	2683.7	1203.45
6	1995/96	2660.2	-246.5	-8.48
7	1996/97	2938	277.8	10.44
8	1997/98	4084.2	1146.2	39.01
9	1998/99	6520.6	2436.4	59.65
10	99/2000	6031.4	-489.2	-7.50
11	2000/01	9797.6	3766.2	62.44
12	2001/02	14859.8	5062.2	51.67
13	2002/03	41630.0	26770.2	180.15
14	2003/04	56629.8	14999.8	36.03
15	2004/05	61784.8	5155	9.10
16	2005/06	92748.6	30963.8	50.12
17	2006/07	107417.4	14668.8	15.82
18	2007/08	139421.5	32004.1	29.79
19	2008/09	194215.6	54794.1	39.30
20	2009/10	213998.9	19783.3	10.19
21	2010/11	232963.2	18964.3	8.86
22	2011/12	343636.1	110672.9	47.51
23	2012/13	434580.0	90943.9	26.46

Source: Adapted and calculated from Table 63, Quarterly Economic Bulletin, Vol 47, Mid-Ocotber 2012, Nepal Rastra Bank

The table shows remittance income from foreign countries before the FY 1994/95 was not so significant. The highest increment % as compared to the previous year was seen in FY 1994/95 (by 1203.45%) whereas remittance lowered by 59.43% in the FY 1993/94 from the previous year.

Fig 4.1: Year wise remittance income from 1990/1991 to 2012/13 A.D.



As it can be seen from the graph, exponential growth in remittance income started from around 2001/02. Before that there was just nominal increment. In the later years, the figure has further sky-rocketed and by now it stands at a quarter of GDP. This indicates our growing dependency on remittance which is astonishing and alarming at the same time.

The remittance income shows no sign of slowing down any time soon specially when the number of migrant workers going abroad are growing day by day and most importantly, the Nepalese currency has weakened against the foreign currencies.

4.1.2 Money Supply

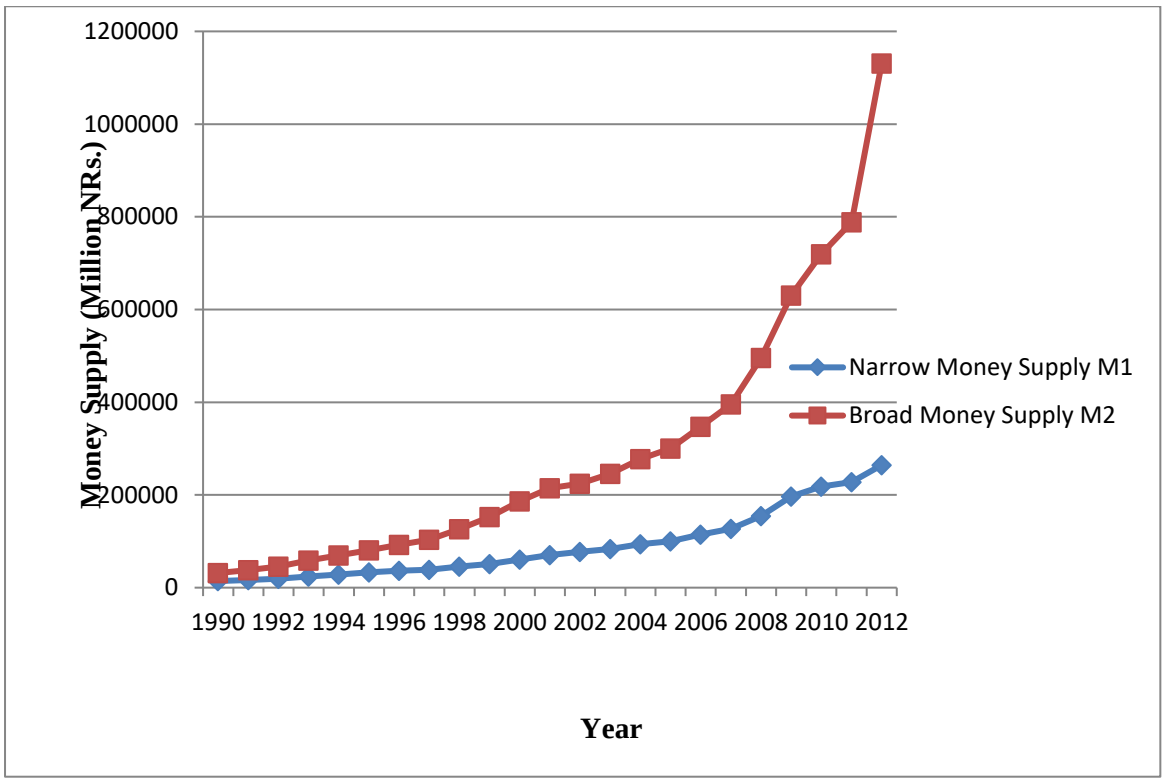
Year wise data of money supply (both Narrow Money M_1 and Broad Money M_2) shows the following trend.

Table 4.2: July Narrow Money Supply M_1 and Broad Money Supply M_2 (million NRs.)

S.N.	FY	Money supply M1	Money supply M2
1	1990	14223.0	31552.4
2	1991	16283.6	37712.5
3	1992	19457.7	45670.5
4	1993	23833.0	58322.5
5	1994	28510.4	69777.1
6	1995	32985.4	80984.7
7	1996	36498.0	92652.2
8	1997	38460.3	103720.6
9	1998	45163.8	126462.6
10	1999	51062.5	152800.2
11	2000	60979.7	186120.8
12	2001	70577.0	214454.2
13	2002	77156.2	223988.3
14	2003	83754.1	245911.2
15	2004	93973.7	277310.1
16	2005	100205.8	300440.0
17	2006	114388.8	347421.8
18	2007	126888.0	395518.2
19	2008	154343.9	495377.1
20	2009	196459.4	630521.2
21	2010	218159.0	719599.1
22	2011	228058.7	788281.4
23	2012	264373.0	1130969.6
Mean		91121.52	293720.36
Median		70577.0	214454.2
Min		14223.0	31552.4
Max		264373.0	1130969.6
Std dev.		74297.3	285291.1

Source: Adapted and Calculated from Table 1, Monetary Survey, Quarterly Economic Bulletin, Vol 47, Mid-October 2012, Nepal Rastra Bank

Fig 4.2: Year wise increment of Narrow and Broad Money Supply



The gap between Narrow Money Supply and Broad Money Supply seems to be increasing year by year. As broad money supply is the sum of narrow money and time deposits, it can be inferred that the proportion of time deposits as a component of the Broad money supply is increasing every year.

4.1.3 Comparison between Remittance and Money Supply

In the available reports, money supply situation is given at a particular point of time whereas remittance data are compiled over a period of time. So it is practically very difficult to compare and contrast between such type of data. For example comparing the remittance figure for the whole period of FY 1990/91 with the total money supply as recorded in July 1990 is almost impossible because these two data are not of the exact same time. However, here it has been assumed that the remittance of the previous year affects the money supply situation of the next year. Therefore the remittance income of FY 1990/91 affects the money supply of 1991 July (which is the start of the next Fiscal Year) and so on. The table below compares the money supply

and the remittance income and the following graph compares the three variables based on the above mentioned assumption.

Table 4.3: Comparison between Remittance income and Money Supply

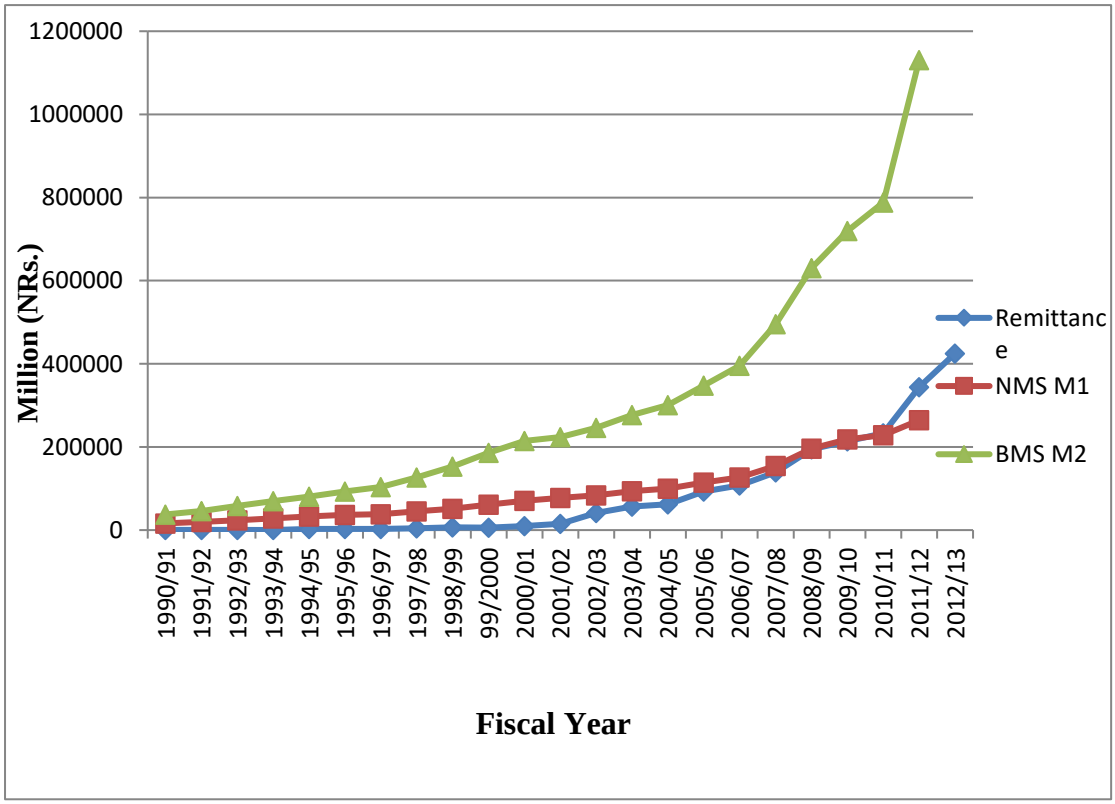
S.N.	FY	Remittance (million NRs.)	July	Money supply M1	Money supply M2
1	1990/91	549.7	1990	14223	31552.4
2	1991/92	423.6	1991	16283.60	37712.5
3	1992/93	549.7	1992	19457.70	45670.5
4	1993/94	223	1993	23833.00	58322.5
5	1994/95	2906.7	1994	28510.40	69777.1
6	1995/96	2660.2	1995	32985.40	80984.7
7	1996/97	2938	1996	36498.00	92652.2
8	1997/98	4084.2	1997	38460.30	103720.6
9	1998/99	6520.6	1998	45163.80	126462.6
10	99/2000	6031.4	1999	51062.50	152800.2
11	2000/01	9797.6	2000	60979.70	186120.8
12	2001/02	14859.8	2001	70577.00	214454.2
13	2002/03	41630	2002	77156.20	223988.3
14	2003/04	56629.8	2003	83754.10	245911.2
15	2004/05	61784.8	2004	93973.70	277310.1
16	2005/06	92748.6	2005	100205.80	300440
17	2006/07	107417.4	2006	114388.80	347421.8
18	2007/08	139421.5	2007	126888.00	395518.2
19	2008/09	194215.6	2008	154343.90	495377.1
20	2009/10	213998.9	2009	196459.40	630521.2
21	2010/11	232963.2	2010	218159.00	719599.1
22	2011/12	343636.1	2011	228058.70	788281.4
23	2012/13	434580.0	2012	264373.00	1130969.6

Source: Calculated and Adapted from Table 1 and Table 63, Quarterly Economic Bulletin, Volume 47, Mid-October 2012, Nepal Rastra Bank

Increment in money supply cannot be fully attributed to the remittance income. However, remittance plays a key role directly or indirectly towards that. When the families of the migrant workers receive money here in Nepal, they use it for various purposes like consumption, education, buying assets, etc. If there is any saving then

they deposit it in the banks or financial institutions. Either by direct use or by depositing in the banks, the total money under circulation is increased, thus increasing the money supply.

Fig 4.3: Comparison between remittance, narrow money and broad money supply



Source: Table 4.3

The above graph shows that remittance income and narrow money supply are closely related in terms of amount, especially in the later years. However the nature of the remittance graph shows close resemblance to that of the broad money supply than to that of the narrow money supply.

4.1.4 Comparison between Remittance and Salary & wage rate index

Rise in salary and wages is one of the reasons of increment in cost of production. As a result the price of produced goods increases, thus contributing to inflation. Although salary and wages are not the only reason for the rise, however a significant chunk of

the production cost of goods is comprised of the remuneration of those involved in its production.

Remittance income might be increasing every day because of large number of migrant workers working abroad. However, that is also creating shortage of labor here in Nepal. The charm of higher earnings in foreign countries is luring more and more Nepalese, especially the skilled ones because of which the wage demand has sky rocketed.

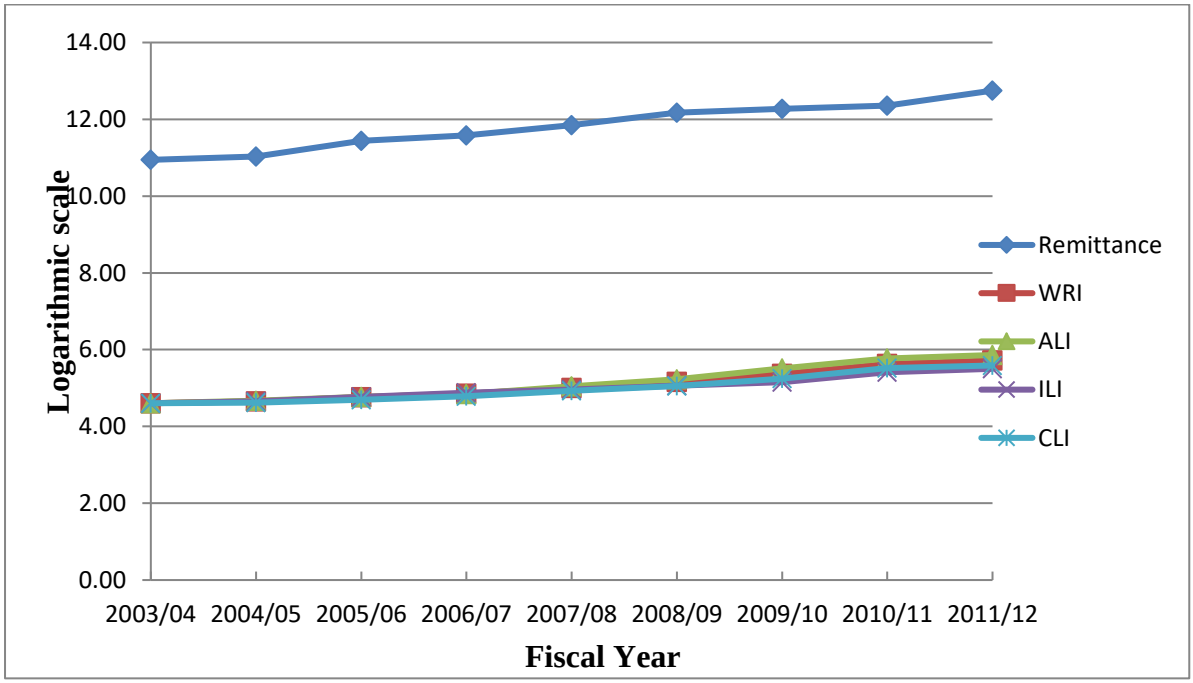
The following table tallies remittance income and wage rate index (WRI) whose component indices are , Agriculture (ALI), Industrial labor (ILI) and Construction labor index (CLI).

Table 4.4: Comparison between remittance and various wage rate indices.

S.N.	FY	Wage Rate Index	Agricultural labor	Industrial labor	Construction labor	Remittance (Million NRs.)
1	2003/04					56629.8
2	2004/05	100	100	100	100	61784.8
3	2005/06	105.3	106.6	104.6	101.3	92748.6
4	2006/07	116.8	117.6	118.1	109.1	107417.4
5	2007/08	127.8	126.7	131.8	120.2	139421.5
6	2008/09	149.4	155.9	142.8	138.6	194215.6
7	2009/10	173.8	187.3	158.3	156.6	213998.9
8	2010/11	215.5	247.8	173.3	189.9	232963.2
9	2011/12	279.2	320	225	250.3	343636.1
10	2012/13	304.8	350.7	245.2	267.2	425000

Source: Table 50, National Salary and Wage Rate Index, Quarterly Economic Bulletin, Vol 47, Nepal Rastra Bank

Fig 4.4: Comparison between remittance and wage rate indices (logarithmic scales) with lag effect



4.1.5 Inflation

Consumer Price Index (CPI) is one of the measures of inflation. A particular year is taken as a base year for which the Price Index is taken as 100. Based on that reference figure, the price indices for the remaining years are calculated. It is not necessary that the initial year be taken as a base year. Another measure of inflation is via GDP deflator. However, although region- wise CPI (hills, terai, Kathmandu) figures are available along with the nation-wide figures, GDP deflator figures are available only on nation-wide basis, not on regional basis. Moreover, CPI figures are categorized into "Food" and "Non-food & Services" with further sub-headings because of which the inflation in the component parts can be calculated.

For the period under consideration, the highest inflation was seen in 1991/92 (20.99%) and the lowest in 2001/02 (2.46%). Interestingly, in 2001/02 there was deflation in "Food and Beverage" category (-2.21%).

The second half of the last decade saw significant inflation. Three years in a row from 2008/09 to 2011/12, inflation was equal to or more than 10%. That can be mainly attributed to high figure in "Food and Beverages" category. Out of 23 fiscal years under study, inflation crossed 9% in 7 years.

Table 4.5: National Consumer Price Index (CPI) and inflation figures

S.N.	FY	Overall Index	Food & Bev	Non-food & Services	ΔOverall Index	Overall Inflation	Food & Bev inflation	Non-food & services inflation
1	1990/91	34.3	35.5	33.2				
2	1991/92	41.5	44.2	38.2	7.2	20.99	24.51	15.06
3	1992/93	45.1	47	43.3	3.6	8.67	6.33	13.35
4	1993/94	49.2	51.3	47.2	4.1	9.09	9.15	9.01
5	1994/95	52.9	55	51	3.7	7.52	7.21	8.05
6	1995/96	57.3	60	54.4	4.4	8.32	9.09	6.67
7	1996/97	61.9	64.9	58.7	4.6	8.03	8.17	7.90
8	1997/98	67	69.9	64	5.1	8.24	7.70	9.03
9	1998/99	74.7	81.2	67.8	7.7	11.49	16.17	5.94
10	99/2000	77.2	81.6	72.5	2.5	3.35	0.49	6.93
11	2000/01	79.1	79.8	78.4	1.9	2.46	-2.21	8.14
12	2001/02	81.4	82.7	80.1	2.3	2.91	3.63	2.17
13	2002/03	85.2	86.4	84	3.8	4.67	4.47	4.87
14	2003/04	88.6	89.2	88	3.4	3.99	3.24	4.76
15	2004/05	92.6	92.8	92.5	4	4.51	4.04	5.11
16	2005/06	100	100	100	7.4	7.99	7.76	8.11
17	2006/07	105.9	107	104.9	5.9	5.90	7.00	4.90
18	2007/08	113	117	109.2	7.1	6.70	9.35	4.10
19	2008/09	127.2	137.3	119	14.2	12.57	17.35	8.97
20	2009/10	139.4	158.1	124.8	12.2	9.59	15.15	4.87
21	2010/11	152.7	181.5	131.6	13.3	9.54	14.80	5.45
22	2011/12	167.5	198.1	144.9	14.8	9.69	9.15	10.11
23	2012/13	180.1	214.3	154.9	12.6	7.52	8.18	6.90

Source: Adapted and Calculated from Table 45, National Consumer Price Index, Quarterly Economic Bulleti, Vol 47, Mid-October, Nepal Rastra Bank

Table 4.6: Comparison of region-wise inflation with the national figures

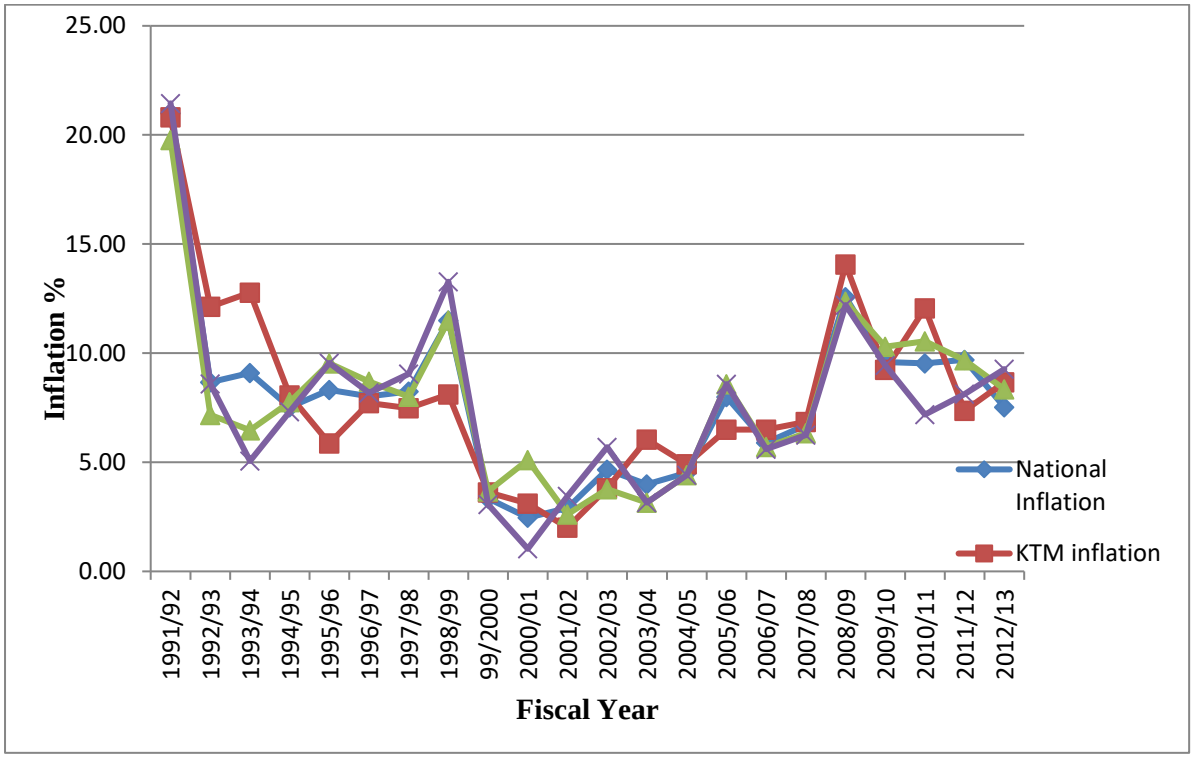
S.N.	FY	Inflation National	Inflation KTM	Inflation Hill	Inflation Terai
1	1990/91				
2	1991/92	20.99	20.82	19.77	21.45
3	1992/93	8.67	12.14	7.18	8.59
4	1993/94	9.09	12.77	6.47	5.05
5	1994/95	7.52	8.06	7.76	7.32
6	1995/96	8.32	5.86	9.53	9.55
7	1996/97	8.03	7.72	8.70	8.19
8	1997/98	8.24	7.48	8.01	9.05
9	1998/99	11.49	8.12	11.50	13.27
10	99/2000	3.35	3.62	3.66	3.06
11	2000/01	2.46	3.10	5.10	1.03
12	2001/02	2.91	2.01	2.62	3.45
13	2002/03	4.67	3.81	3.76	5.69
14	2003/04	3.99	6.04	3.16	3.16
15	2004/05	4.51	4.92	4.42	4.42
16	2005/06	7.99	6.50	8.58	8.58
17	2006/07	5.90	6.5	5.70	5.60
18	2007/08	6.70	6.85	6.34	6.25
19	2008/09	12.57	14.06	12.37	12.21
20	2009/10	9.59	9.24	10.29	9.45
21	2010/11	9.54	12.06	10.55	7.18
22	2011/12	9.69	7.36	9.68	8.12
23	2012/13	7.52	8.68	8.35	9.27

Source: Adapted and Calculated from Table 45, National Consumer Price Index, Quarterly Economic Bulleti, Vol 47, Mid-October, Nepal Rastra Bank

The highlighted cells in the above table are the ones with the highest inflation rate for that FY when compared among Hills, Terai and Kathmandu. Out of 22 fiscal years under consideration, highest inflation was observed in Kathmandu in 9 FYs, Hills in 6 FYs and in Terai in 8 FYs. When the period from 2001/2002 onwards is observed then the highest inflation figures were seen for 6FYs in Kathmandu, for 3 FYs in Hills

and 4 FYs in Terai. In totality, higher inflation figures are seen in Kathmandu and lower in Hills.

Fig 4.5: Comparative national and regional inflation figures



4.2 Statistical Analysis

4.2.1 Relationship between remittance and money supply

The data from the following Table 4.3 has been used for the statistical analysis between remittance (independent variable) and money supply (dependent variable). Two types of such analysis have been done. They are

i) Analysis between remittance and narrow money supply M_1

ii) Analysis between remittance and broad money supply M_2

It is to be noted here the assumption that remittance of the previous FY affects the money supply of the following year has been taken as true.

The following results were observed after the analysis.

i) Analysis between remittance(X) and narrow money supply M_1(Y)

The regression equation and other statistical parameters were as follows.

Y	=	44520.22 +	0.73618 X
S.E	=	(4257.91)	(0.03535)
t- stat	=	(10.4559)	(20.8246)
P-value	=	(2.55×10^{-9})	(1.526×10^{-14})
Multiple R	=	0.97878	
R^2	=	0.95803	
$\overline{R}^2$	=	0.95582	
S.E(estimate)=		15505.6028	

From the regression equation it can be said that even when the remittance income (X) is 0, the narrow money supply M_1 (Y) is 44520.22 . Slope value of 0.73618 indicates that for every additional million rupees of remittance income, the money supply increases by Rs 0.7362. The standard error of estimate of 15505.6 indicates the variability of the observed values about the derived regression line. It is similar to the standard deviation.

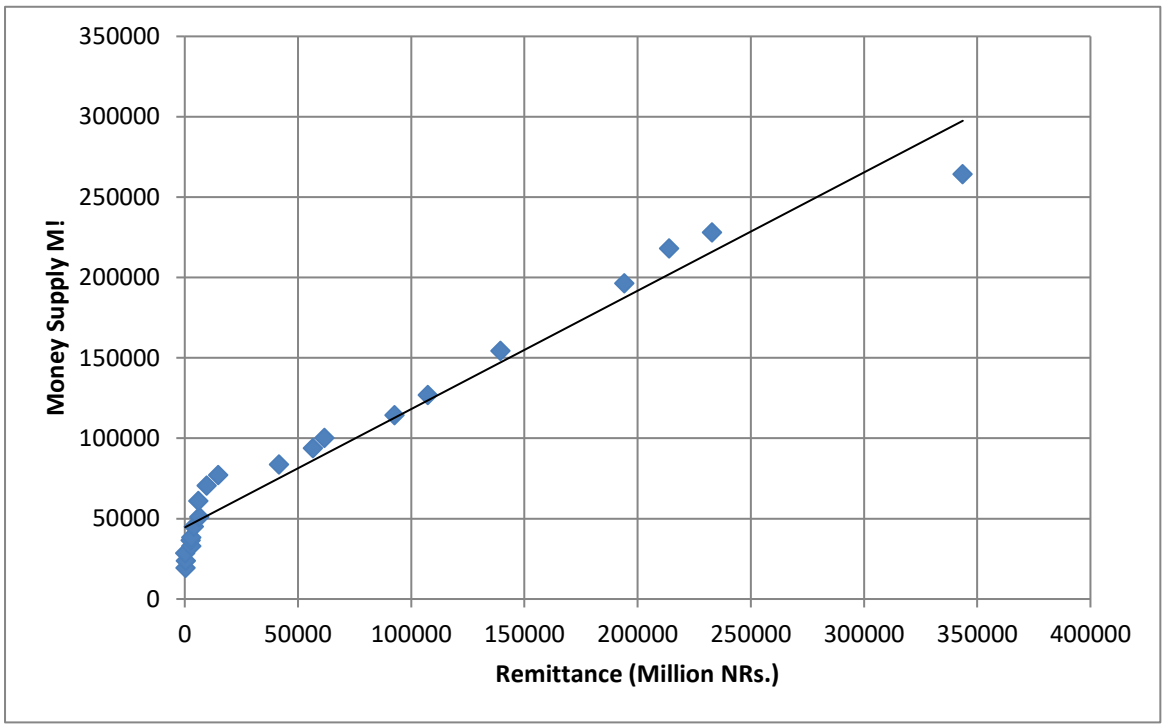
Both R^2 and $\overline{R}^2$ explains the goodness of fit of the regression line. Such high values of 0.95803 and 0.95582 respectively indicate that there is high degree of goodness of fit of the regression line. Multiple R = 0.97878, which has been adjusted to the degree of freedom associated with the sum of squares again implies the goodness of fit of the line.

For **ANOVA test** (which checks the overall significance of regression equation), the following hypothesis was taken. Null hypothesis H_0 : b= 0, the regression line of Y on X is not significant. Alternative hypothesis H_1 ; b≠ 0, the regression line of Y on X is significant. The level of significance considered here is 5%. The calculated value of F-statistics is = 433.66 Critical value of F for (1,20) degree of freedom at 5% level of significance is F(1,20) = 4.35. Since the calculated value of F is greater than its

critical value, it is significant. Hence H_0 is rejected and H_1 is accepted. We conclude that the regression line of Y on X is significant.

For D-W test (which is for testing the correlation among the error terms), the following hypothesis was taken. Null hypothesis H_0 : $\rho = 0$, there is no autocorrelation among the error terms.Alternative hypothesis H_1 ; $\rho \neq 0$, there is autocorrelation among the error terms. Level of significance = 5% = 0.05.The calculated value of test statistics (d) = 0.5818. From Durbin-Watson table, we find that for N =21 and k' = 1, at 5% level of significance d_L = 1.221 and d_U = 1.420. Conclusion: Since, d= 0.5818 is less than d_L = 1.221 we reject the null hypothesis and conclude that there is positive auto-correlation.

Fig 4.6: Scatter diagram of Narrow Money Supply (Y) v/s Remittance (X) corresponding to the regression equation



ii) Analysis between Remittance and Broad Money Supply (M2)

Using the data of Table 4.3 the following regression equation and other statistical parameters were calculated in the analysis between Remittance (Y) and Broad Money Supply M2 (X).

Y	=	106681.96 +	2.896 X
S.E	=	(11012.34)	(0.09143)
t- stat	=	(9.6875)	(31.6696)
P-value	=	($8.755x10^{-9}$)	($6.5924x10^{-18}$)
Multiple R	=	0.99066	
R^2	=	0.9814	
$\bar{R}^2$	=	0.9804	
S.E(estimate)=		40102.57	

The interpretation of the regression equation shows that when the remittance income (X) is 0, the broad money supply M2 (Y) is 106681.96 . For every million rupees of remittance income, the broad money supply increases by Rs 2.896, i.e. 289.6%.

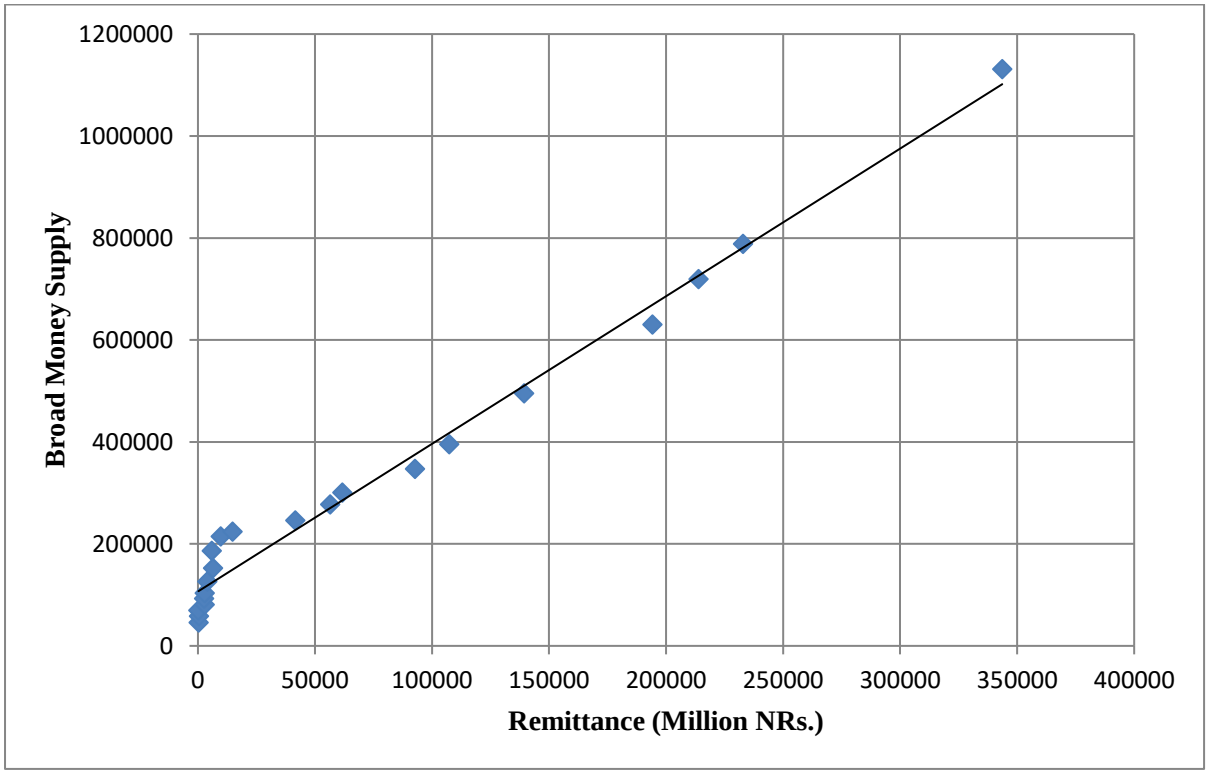
R^2 and $\bar{R}^2$ values of 0.9814 and 0.9804 indicate high degree of goodness of fit of the regression line.

For ANOVA test (which checks the overall significance of regression equation), the following hypothesis was taken. Null hypothesis H_0 : b= 0, the regression line of Y on X is not significant. Alternative hypothesis H_1 ; b≠ 0, the regression line of Y on X is significant. The level of significance considered here is 5%.

The calculated value of F-statistics is = 1002.967. Critical value of F for (1,20) degree of freedom at 5% level of significance is F(1,20) = 4.35. Since the calculated value of F is greater than its critical value, it is significant. Hence H_0 is rejected and H_1 is accepted. We conclude that the regression line of Y on X is significant.

D-W Statistics (d) = 0.3357 which is lower than d_L = 1.221. Thus the null hypothesis is rejected and it can be concluded that there is positive auto-correlation.

Fig 4.7: Scatter diagram of Broad Money Supply (Y) v/s Remittance (X) corresponding to the regression equation



Source: Calculated from Table 4.3

4.2.2 Relationship between Inflation (CPI) and Narrow Money Supply M_1

Although structural factors play significant role in inflation, inflation is highly influenced by monetary factors like money supply. The following analysis shows the statistical relationship between these two variables.

Table 4.7: Comparison between Narrow money supply M_1 and Overall Index CPI

S.N.	FY	Overall Index CPI	July	Money supply M_1
1	1990/91	34.3	1990	14223.00
2	1991/92	41.5	1991	16283.60
3	1992/93	45.1	1992	19457.70
4	1993/94	49.2	1993	23833.00
5	1994/95	52.9	1994	28510.40
6	1995/96	57.3	1995	32985.40
7	1996/97	61.9	1996	36498.00
8	1997/98	67	1997	38460.30
9	1998/99	74.7	1998	45163.80
10	99/2000	77.2	1999	51062.50
11	2000/01	79.1	2000	60979.70
12	2001/02	81.4	2001	70577.00
13	2002/03	85.2	2002	77156.20
14	2003/04	88.6	2003	83754.10
15	2004/05	92.6	2004	93973.70
16	2005/06	100	2005	100205.80
17	2006/07	105.9	2006	114388.80
18	2007/08	113	2007	126888.00
19	2008/09	127.2	2008	154343.90
20	2009/10	139.4	2009	196459.40
21	2010/11	152.7	2010	218159.00
22	2011/12	167.5	2011	228058.70
23	2012/13	180.1	2012	264373.00

Source: Table 4.3 & Table 4.5

The regression equation and other parameters with CPI index (Y) and NMS M1(X) are:

$$Y = 42.475 + 0.0005308\ X$$

$$S.E = (1.8108) \quad (1.5276 \times 10^{-5})$$

$$t\text{- stat} = (23.3408) \quad (34.7516)$$

$$\text{Multiple } R = 0.9918$$

R^2	=	0.9837
$\overline{R}^2$	=	0.9828
S.E(estimate)=		5.186
F (calculated)=		1207.67
D-W	=	0.6264

The interpretation of the statistical findings between CPI and Narrow Money Supply M1 are as follows.

The regression equation shows that the Overall Index of Consumer Price Index increases by 0.053% when Narrow Money Supply increases. Standard error of estimate of 5.168 indicates that the variability of the observed values about the derived regression line is not very high. High values of R^2, $\overline{R}^2$ and Multiple R (0.9837, 0.9828 and 0.9918) respectively indicate that there is high degree of goodness of fit of the regression line. Calculated F-statistics = 1207.67 is higher than the critical value F(1,22) = at 5% level of significance. So it can be inferred that the regression line of CPI index on Narrow Money Supply is significant.For D-W test, the calculated value of test statistics (d) = 0.6264. From Durbin-Watson table, we find that for N =22 and k' = 1, at 5% level of significance d_L = 1.221 and d_U = 1.420. So it can be concluded that Since, d= 0.6264 is less than d_L = 1.221 we conclude that there is positive auto-correlation among error terms.

Karl Pearson Correlation coefficient (r) = 0.9894 which is very close to 1. Thus it can be said that Narrow Money Supply and Consumer Price Index are highly correlated. Similarly, Standard Error of Correlation coefficient S.E. (r) = 0.00448. P.E.(r) = 0.00302 and 6P.E. = 0.0181. Since r(0.9894) > 6P.E.(0.0181), the value of r is significant.

4.2.3 Relationship between Remittance (X) and Wage Rate Indices (Y)

Due to the unavailability of the wage rate indices prior to 2004/05, the data from that FY to 2012/13 has been taken under consideration here. Similarly, the lag effect of remittance on wage rate indices has also been considered. For the sake of simplicity, the statistical analysis have been carried out between remittance and overall wage rate

index but not with the component indices like Agriculture, Industrial and Construction wage rate index. Since overall wage rate index is in itself the indicator of its components, the following analysis has been assumed to be enough.

Y	=	48.02 +	0.0007852 X
S.E	=	(18.9215)	(9.7829×10^{-5})
t- stat	=	(2.5380)	(8.0261)
Multiple R	=	0.95645	
R^2	=	0.91479	
$\overline{R}^2$	=	0.90059	
F (calculated)	=	64.418	
D-W	=	2.1659	

According to the above equation, wage rate index will be 48.02 if the remittance income is zero. Similarly, for every million of remittance, the wage rate index increases by 0.0007852 points.

High values of R^2, $\overline{R}^2$ and Multiple R (0.91479, 0.90059 and 0.95645) respectively indicate that there is high degree of goodness of fit of the regression line.

Calculated F-statistics = 64.418 is higher than the critical value F(1,9) = 5.12 at 5% level of significance. So it can be inferred that the regression line of wage rate index on remittance income is significant.

For D-W test, the calculated value of test statistics (d) = 2.1659. From Durbin-Watson table, we find that for N =9 and k' = 1, at 5% level of significance d_L = 0.824 and d_U = 1.320. Here, d= 2.1659(close to 2) is greater than d_U = 1.320 but is less than 4- d_U (2.68) we conclude that the error terms are independent, or there is no problem of auto correlation

Karl Pearson Correlation coefficient (r) = 0.962032 which is very close to 1. Thus it can be said that Remittance and Wage Rate Index are highly correlated. Similarly, Standard Error of Correlation coefficient S.E. (r) = 0.0248. P.E.(r) = 0.0167 and 6P.E. = 0.1003. Since r(0.962032) > 6P.E.(0.1003), the value of r is significant.

4.2.4 Relationship between Remittance and Consumer Price Index (CPI, base year 2005/06)

Table 4.8: Tallying of Remittance and Consumer Price Index (Base year 2005/06)

S.N.	FY	Remittance (million NRs.)	Consumer Price Index (CPI)
1	1990/91	549.7	34.3
2	1991/92	423.6	41.5
3	1992/93	549.7	45.1
4	1993/94	223	49.2
5	1994/95	2906.7	52.9
6	1995/96	2660.2	57.3
7	1996/97	2938	61.9
8	1997/98	4084.2	67
9	1998/99	6520.6	74.7
10	99/2000	6031.4	77.2
11	2000/01	9797.6	79.1
12	2001/02	14859.8	81.4
13	2002/03	41630	85.2
14	2003/04	56629.8	88.6
15	2004/05	61784.8	92.6
16	2005/06	92748.6	100
17	2006/07	107417.4	105.9
18	2007/08	139421.5	113
19	2008/09	194215.6	127.2
20	2009/10	213998.9	139.4
21	2010/11	232963.2	152.7
22	2011/12	343636.1	167.5
23	2012/13	434580.0	180.1

Source: Table 4.1 & 4.5

Statistical analysis between Remittance and Consumer Price Index can be done:

i) Without lag effect (Remittance and CPI of same year)

ii) With lag effect (Remittance of previous year and CPI of the following year).

iii) Multiple regression (Remittance of same and previous year and CPI of same year).

i) Without lag effect

The regression equation and other statistical parameters are as follows.

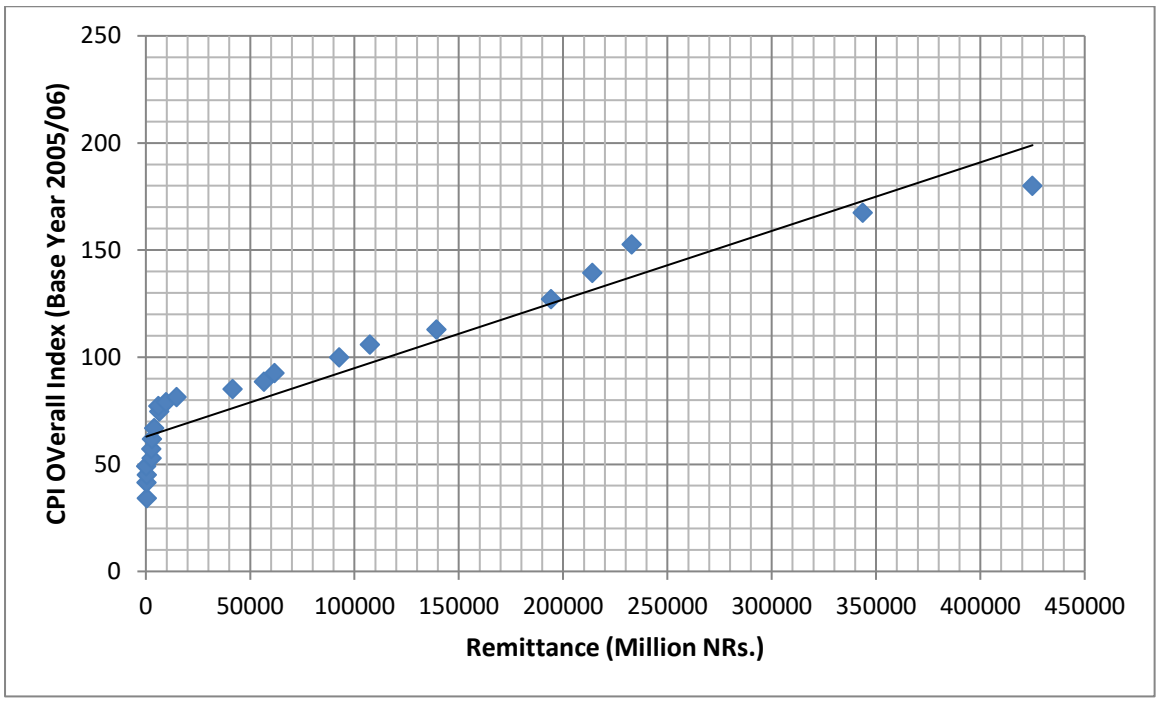
Y = 68.862 + 0.000320235 X

S.E	=	(3.40206)	(2.34214×10^{-5})
t- stat	=	(18.4776)	(13.6727)
P-value	=	(1.8156×10^{-14})	$(6.33217 \times 10^{-12})$
Multiple R	=	0.94816	
R^2	=	0.899011	
$\bar{R}^2$	=	0.894202	
S.E(estimate)=		13.2092	
F (calculated)=		186.9437	
D-W	=	0.26266	

The Consumer Price Index will be 68.862 even if there is no remittance income. Similarly, for every additional million of remittance income, the index increases by 0.000320235 points. High values of R^2, $\bar{R}^2$ and Multiple R (0.899011, 0.894202 and 0.94816) respectively indicate that there is high degree of goodness of fit of the regression line. Calculated F-statistics = 186.9437 is higher than the critical value F(1,23) = 4.28 at 5% level of significance. So it can be inferred that the regression line of consumer price index on remittance income is significant. For D-W test, the calculated value of test statistics (d) = 0.26266. From Durbin-Watson table, we find that for N =23 and k' = 1, at 5% level of significance $d_L = 1.257$ and $d_U = 1.437$. Here, d= 0.26266 which is less than $d_L = 1.257$ we conclude that there is positive auto-correlation among the error terms.

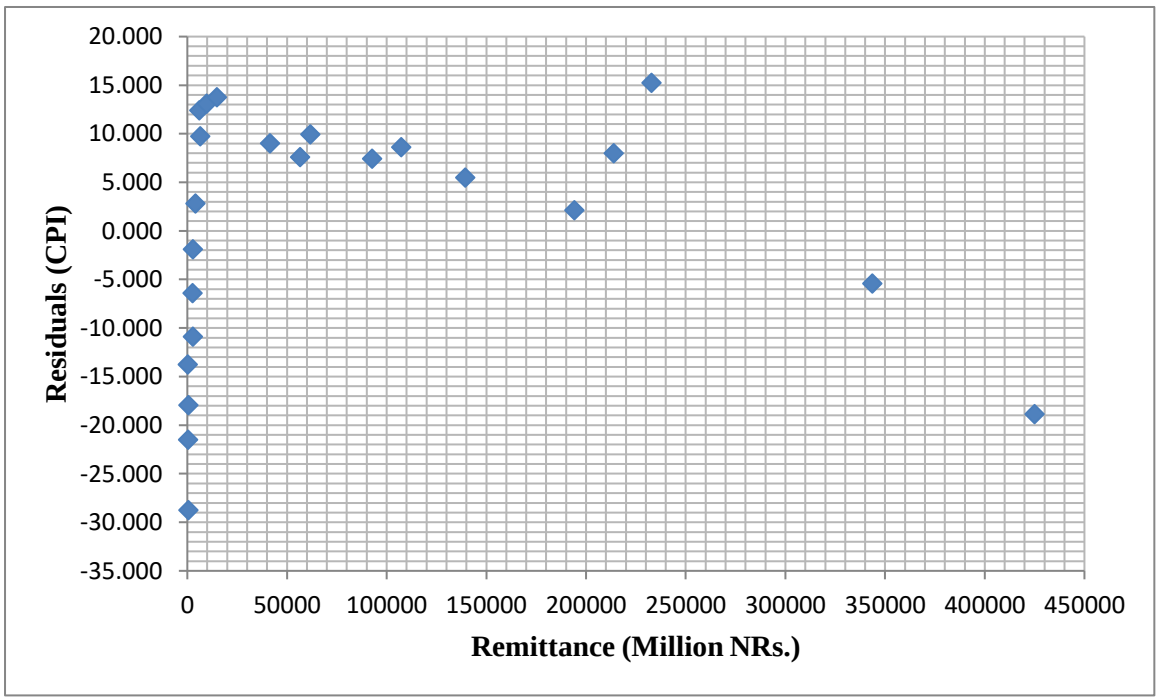
Karl Pearson Correlation coefficient (r) = 0.948162 which is very close to 1. Thus it can be said that Remittance and Consumer Price Index are highly correlated. Similarly, Standard Error of Correlation coefficient S.E. (r) = 0.02106. P.E.(r) = 0.0142 and 6P.E. = 0.08522. Since r(0.948162) > 6P.E.(0.08522), the value of r is significant.

Fig 4.8: Scatter diagram of CPI (Y) and Remittance (X) without lag effect



Source: Table 4.6

Fig 4.9: Residual Plot of the regression equation between CPI (Y) and Remittance (X) without lag effect



The residual outputs used for the residual plot are as follows.

Table 4.9: Residual Output of the regression equation between CPI and Remittance without lag

Observation	Predicted Y	Residuals
1	63.038	-28.738
2	62.997	-21.497
3	63.038	-17.938
4	62.933	-13.733
5	63.793	-10.893
6	63.714	-6.414
7	63.803	-1.903
8	64.170	2.830
9	64.950	9.750
10	64.793	12.407
11	65.999	13.101
12	67.620	13.780
13	76.193	9.007
14	80.997	7.603
15	82.647	9.953
16	92.563	7.437
17	97.261	8.639
18	107.509	5.491
19	125.056	2.144
20	131.392	8.008
21	137.465	15.235
22	172.906	-5.406
23	198.962	-18.862

Source: Calculated from Table 4.6

ii) With lag effect

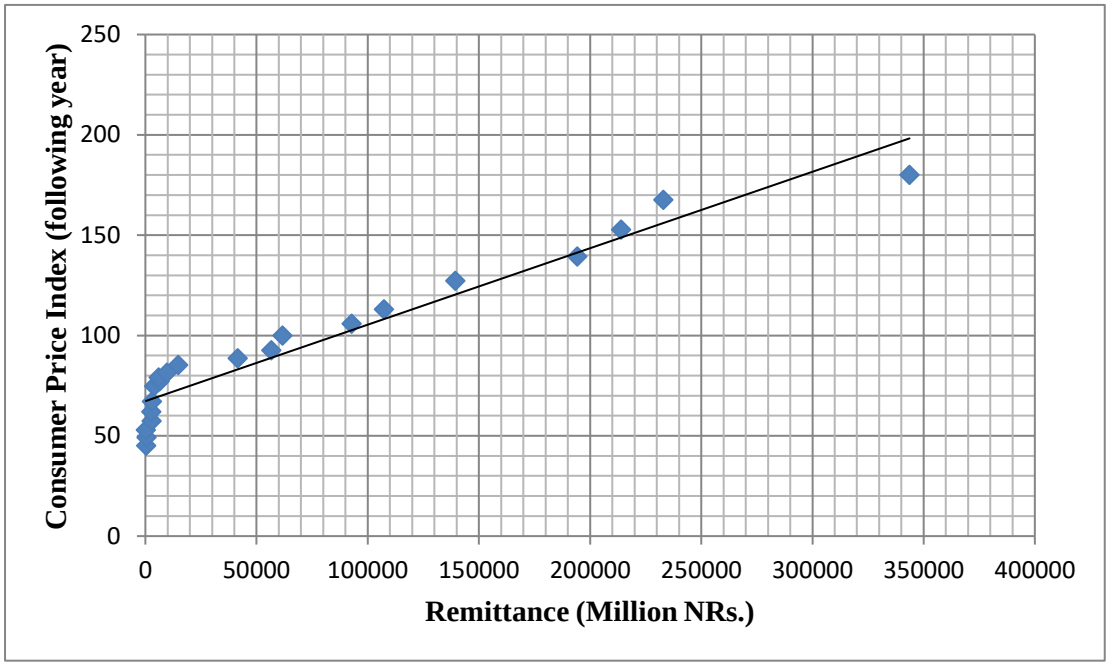
For this analysis, it has been considered that the remittance of a certain fiscal year affects the inflation in the following year, instead of the same year. For example: the remittance income of FY 1990/91 affects the inflation of the next fiscal year i.e. FY 1991/92 rather than that of 1990/91.

The logic behind this lag effect is that there is a time gap between the instant remittance is received and the period it starts to show inflationary effect. That time gap has been taken as one fiscal year in this analysis. The regression equation and other statistical parameters with lag effect are as follows.

Y	=	67.278 +	0.0003811 X
S.E	=	(3.04292)	(2.5264×10^{-5})
t- stat	=	(22.11)	(15.085)
Multiple R	=	0.96069	
$\overline{R}^2$	=	0.91888	
S.E(estimate)	=	11.081	
F (calculated)	=	227.546	

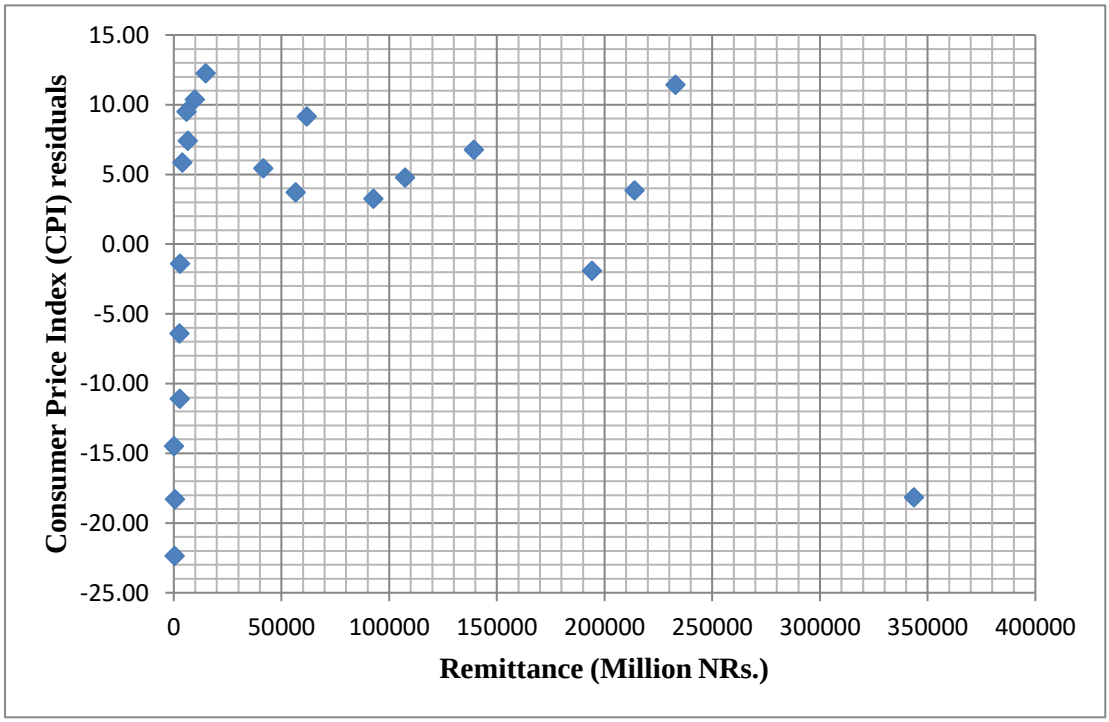
The Consumer Price Index will be 67.278 even if there is no remittance income. Similarly, for every million of remittance income in the previous year, the index increases by 0.0003811 points. High values of R^2, $\overline{R}^2$ and Multiple R (0.92293, 0.91888 and 0.96069) respectively indicate that there is high degree of goodness of fit of the regression line. Calculated F-statistics = 227.546 is higher than the critical value F(1,21) = 4.32 at 5% level of significance. So it can be inferred that the regression line of consumer price index on remittance income is significant. For D-W test, the calculated value of test statistics (d) = 0.563145. From Durbin-Watson table, we find that for N =21 and k' = 1, at 5% level of significance d_L = 1.221 and d_U = 1.420. Here, d= 0.563145 which is less than d_L = 1.221 we conclude that there is positive auto-correlation among the error terms. Karl Pearson Correlation coefficient (r) = 0.954 which is very close to 1. Thus it can be said that Remittance of previous year and Consumer Price Index of the following year are highly correlated. Similarly, Standard Error of Correlation coefficient S.E. (r) = 0.0196. P.E.(r) = 0.0132 and 6P.E. = 0.0793. Since r(0.954) > 6P.E.(0.0793), the value of r is significant. Significance level of t value is less than 0.05, indicating predictive ability of remittance over CPI.

Fig 4.10: Scatter diagram between CPI (Y) and remittance (X) with lag effect



Source: Calculated from Table 4.6

Fig 4.11: Residual Plot of the regression equation between CPI (Y) and remittance (X) with lag effect



The residual output of the lag analysis regression equation is as follows.

Table 4.10: Residual Outputs of the regression equation between CPI (Y) and remittance (X) with lag

Observation	Predicted Y	Residuals
1	67.44	-22.34
2	67.49	-18.29
3	67.36	-14.46
4	68.39	-11.09
5	68.29	-6.39
6	68.40	-1.40
7	68.83	5.87
8	69.76	7.44
9	69.58	9.52
10	71.01	10.39
11	72.94	12.26
12	83.14	5.46
13	88.86	3.74
14	90.82	9.18
15	102.62	3.28
16	108.21	4.79
17	120.41	6.79
18	141.29	-1.89
19	148.83	3.87
20	156.06	11.44
21	198.24	-18.14

Source: Calculated form Table 4.6

iii) Multiple Regression Analysis (Remittance of the same and previous year as independent variables)

In this analysis, the regression equation of CPI ,which is the independent variable, has been derived using the multiple regression technique where the dependent variables

are remittances of the same year and that of the previous year also. The analysis using SPSS software reveals the following.

$\widehat{CPI}_t$ = 64.970 + 0.000204026 Rmt_t + 0.000136833 Rmt_{t-1}

t value = (20.413) (1.335) (0.714)

R= 0.958

R^2 = 0.918

$\overline{R}^2$ = 0.909

D-W value = 0.259

The residual statistics are as follows:

Table 4.11: Residual statistics of multiple regressions

	Minimum	Maximum	Mean	Std. deviation	N
Predicted value	65.091	198.702	92.705	37.993	22
Residual	-23.632	12.057	0.000	11.354	22
Std. predicted value	-0.727	2.790	0.000	1.000	22
Std. residual	-1.980	1.010	0.000	0.951	22

Source: Calculated from Table 4.6

The multiple regression equation of CPI indicates that a million rupees of remittance income contributes to CPI by 0.000204026 points of the same year, keeping the remittance income of previous year constant. Similarly, a million rupees of remittance income previous year contributes to CPI by 0.000136833 points the following year, keeping other independent variables constant. If there is no remittance in previous or the following year, then CPI remains at 64.970 points. The $\overline{R}^2$ value of 0.909 indicates that 90.9% of total variability in CPI (dependent variable) is explained by Remittance income of the present and the previous year.

Table 4.12: ANOVA table for multiple regression

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	30312.989	2	15156.495	106.368	0E-8[b]
Residual	2707.320	19	142.491		
Total	33020.310	21			

Source: Table 4.6

The F-value is equal to 106.37 and the significance is less than 0.001. Therefore we reject the null hypothesis and accept the alternative hypothesis. In other words, it can be safely said that the model has explanatory power.

Similarly, the correlation analysis is depicted in the table below.

Table 4.13: Correlation analysis for multiple regression

		Consumer Price Index	Remittance income (Million NRs.)	Previous year remittance income (Million NRs.)
Pearson Correlation	Consumer Price Index	1.000	.957	.954
	Remittance income (Million NRs.)	.957	1.000	.990
	Previous year remittance income (Million NRs.)	.954	.990	1.000

Source: Table 4.6

The table shows that there is heavy correlational relationship between CPI and Remittance income of the same year as well as between CPI and Remittance income of the previous year.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary of Findings

The statistical analysis between remittance and the some of the linking factors like wages (cost push factor), money supply (both narrow and broad) as well as that between the linking factors like money supply and inflation all show positive relationship and strong correlation. All this leads to the fact that remittance does contributes to inflation.

Direct regression analysis between remittance and inflation (in terms of CPI) also confirms that fact. Simple regression analysis between inflation and remittance of the same year shows that for every additional million rupees of remittance income the CPI index increases by 0.000320235 points. In other words, if the remittance income increases by NRs. 10,000 million rupees then CPI increases by 3.202 points. In the regression equation thus formed, 89.42% of total variability in CPI is explained by remittance of the same year.

Simple regression analysis between remittance of the previous year on the inflation of the following year shows that for every additional million rupees of remittance income the CPI index increases by 0.0003811 points. In other words, if the remittance income increases by NRs. 10,000 million rupees then CPI increases by 3.881 points. In the regression equation thus formed, 91.88% of total variability in CPI is explained by remittance of the previous year.

Similarly, multiple regression analysis of CPI as independent variable with remittance of the current and the previous year both as dependent variables showed how inflation is influenced. According to the regression equation thus formed, for every million of additional remittance income of a certain year increases the CPI index by 0.000204026 points, keeping remittance of the previous year zero. Similarly, additional remittance income of million rupees in the previous year contributes to CPI index of the following year by 0.000136833 points, keeping remittance income of the

current year as zero. If the remittances of the previous year and the following year are both NRs. 10,000 million then the CPI index increases by 3.4 points. In the multiple regression equation thus formed, 90.9% of total variability in CPI is explained by remittance of current and previous year.

Comparative graphs between remittance and money supply as well as that between remittance and wage rate indices again show some similar patterns. In case of remittance and money supply, remittance income in terms of amount shows closer relationship with narrow money supply whereas growth nature is similar to that of broad money supply. Remittance income and wage rate indices for various sectors show similar nature in increment. This gives strong evidence that remittance influences these well known inflation triggering factors.

The correlation analysis between remittance income and CPI of the same year was found to be 0.94816, that of remittance income of the previous year and CPI of the following year was found to be 0.954. Similarly, strong correlational relationship was evidenced among the dependent and independent variables in multiple regression analysis.

All the above mentioned analysis and graphs support the theoretically constructed logical view that remittance contributes to inflation in Nepal. The extensiveness of the data included in all of the analysis further strengthens the fact.

5.2 Conclusion and Recommendations

From this research it can be safely concluded that indeed remittance can be a significant factor that contributes to inflation in case of Nepal. Prior to the statistical relationship analysis between remittance and inflation, the theoretical explanation built a logical relationship between remittance and inflation through various linking factors. Those linking factors are demand pull factors, cost push factors and money supply.

One significant feature of remittance income is that it directly goes to the hand of the public rather than through some centralized government bodies. Because of this decentralized nature of its distribution, it effects can also be observed in the same

respect. When the families of the remit senders receive the money here in Nepal, they tend to spend it in buying consumables for family members, educating their children, buying assets, etc. People with more money to spend will be empowered with higher purchasing power, thus automatically increasing the aggregate demand of everything from daily consumables to properties. But if there is no proportionate increment in supply to match the demand, then the price rises. This happens especially in case of lands and properties. However, this is evident in case of food items, service sectors, etc. as well.

Regarding inflation through cost push factors, inflation contributes to further inflation. Price increment in raw materials, energy cost, transportation cost, etc. is ultimately factored into the production cost of the final products. Besides, the lure of attractive wages and salaries in the foreign countries encourages migrant workers to go abroad at least for few years. This creates shortages of labor here, which again increases wage pressure that adds up to the production cost of goods or services. Remittance directly or indirectly influences the cost push factors.

Money supply also tends to increase through remittance. There are several monetary tools through which the central bank controls money supply. However, the inflow of remittance can be too overwhelming at times like those during depreciation of Nepalese currency in comparison to the foreign currencies. Due to high liquidity, the purchasing power of money decreases and thus inflation effect occurs.

The statistical analysis between remittance and the some of the linking factors like wages (cost push factor), money supply (both narrow and broad) as well as that between the linking factors like money supply and inflation all show positive relationship and strong correlation. All this leads to the fact that remittance does contributes to inflation.

There is no doubt that remittance income has been a vital part of our economy especially in the last decade. People from all over Nepal have gone to foreign countries and are bringing valuable money back home which has been a major reason for higher living standard of their families here in Nepal. Their families can afford a comparatively comfortable life with better and adequate food to eat, educate their children in better schools, enjoy better health facilities and even save for the future.

All in all this has helped to raise living standard and in many cases to take people out of poverty.

However there is a dark side to the effects of remittance in Nepal's case. Some economists refer to it as a 'slow poison'. The irony is that the income from remittance is being diverted to non-productive sectors rather than productive sectors. In some cases, remittance might be just enough for the fulfillment of basic requirements like food, clothing, shelter, health and education. But, in many cases, huge chunk of those income which is left-over after use in basic requirement have been used in unnecessary purchases and non-productive sectors. That is where the negative effects of remittance show up both at the economic and social front.

Among the negative effects of remittance, as this research showed, is it effect in inflation. Although nominal level of inflation is necessary for economic growth, higher inflation has several negative traits. It raises cost of living, negates the real interest rates and brings uncertainty to the economic situation. If remittance can be properly used in productive sectors then its positive effects will offset its negative effects.

The need of the moment is to create productive investment opportunities where a huge part of remittance that is currently being used in unproductive sectors or luxury purchases can be diverted. Those productive investment opportunities can be in Agriculture, Infrastructure, Tourism, Industries, etc.

At the moment we are facing huge energy crisis, which is hampering economic development a lot. If the remittance money can be diverted as an investment in building new hydropower projects, it will have multiple benefits to the economy. First of all, the return from investments in such projects can be a reliable source of future income for the investors. Secondly, the economic benefits of such projects will be felt through multiplier effect. The energy generated from those projects will add upto the national electricity supply which will be a cheaper alternative to other expensive energy sources such as petrol and diesel. That encourages entrepreneurs to invest in new industries and businesses, creating more jobs within the country. Educated individuals who leave the country in search of better job opportunities will be retained here with the advent of new jobs within the country itself.

Similar investment of remittance income on agriculture sector is necessary to switch it from a subsistence level to commercial level. Most of the farmers in our country cannot afford modern equipments and are relying on age old techniques of farming. Investment in agriculture equipments, irrigation facilities and modern techniques can really revolutionize the agriculture sector and the economy as a whole because agriculture sector is a major part of

the economy of our country. What better way than to get that investment from remittance income.

Same is the case for tourism, other industries, service sectors, etc. It is said that the middle class is the backbone of every country. The economic progress of any country depends upon the economic progress of the middle class. However until now that group has been treated as a consumer base. Now is the right time to divert the remittance income (which is mainly earned by the middle class group) to some useful investment and turn them into an investment base also. Doing so will have double benefits. The first one is that, they will contribute to building the nation which brings a sense of pride to those people. The second benefit is that negative effects of remittance will be automatically reduced since those left-over income have now been used in productive instead of unproductive sectors.

Every year total import from India and other third countries have been increasing as has been remittance income. Due to open border facilities and heavy dependency on India for imports, the inflation in Indian market is directly transferred to Nepal, the extent of which increases as import increases. It seems that the money sent from abroad are used up in buying products from some other foreign countries. We are here working just as a transit or a medium. It looks like we are running someone else's economic cycle. The real ositive effect of those remittance incomes will be felt when that is utilized within the country.

Now is the high time that all the stakeholders (political parties, entrepreneurs, banks, bureaucrats, public, etc.) should think about creating more investment opportunities and attract remittance money towards it. Once profitable investments are made and the investors start getting return from it, then they do not have to fully rely on remittance income. Our heavy reliance on remittance income makes us equally vulnerable to inherent economic risks of the employing country. If for any reason those countries face economic difficulties then that might be directly felt here in terms of lower remittance inflow. So it is always better to start thinking about tomorrow and plan accordingly instead of lavishly spending just for today.

When people have income through remittance but the economic growth of the country cannot match that income and purchasing power, then that creates imbalances within the economy. So the best way is to utilize that income for the economic growth through increase in investment and output.

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Appendix C

Consumer Price Index for Hills (Base Year : 2005/06 =100)

Fiscal Year	Overall Index	Food and Beverages	Non-Food and Services
1972/73	6.9	7.1	6.9
1973/74	7.9	8.2	7.5
1974/75	9.1	9.4	8.6
1975/76	9.4	9.3	9.6
1976/77	9.7	9.6	10.2
1977/78	10.7	10.8	10.9
1978/79	11.1	11.0	11.7
1979/80	12.2	12.1	12.5
1980/81	13.7	13.6	14.3
1981/82	15.2	15.1	15.6
1982/83	17.4	17.8	16.9
1983/84	18.5	18.5	18.9
1984/85	20.2	19.7	21.9
1985/86	22.6	22.3	23.9
1986/87	25.7	25.9	26.0
1987/88	28.7	29.4	28.0
1988/89	31.7	32.0	31.9
1989/90	31.8	32.0	32.4
1990/91	34.9	34.8	36.1
1991/92	41.8	42.7	41.3
1992/93	44.8	45.2	45.5
1993/94	47.7	48.0	48.4
1994/95	51.4	52.3	51.2
1995/96	56.3	58.3	54.3
1996/97	61.2	63.9	58.3
1997/98	66.1	69.0	63.0
1998/99	73.7	80.3	66.7
1999/00	76.4	81.1	71.5
2000/01	80.3	81.5	79.1
2001/02	82.4	84.0	80.7
2002/03	85.5	86.6	84.4
2003/04	88.2	89.2	87.3
2004/05	92.1	92.6	91.6
2005/06	100.0	100.0	100.0

Appendix C

Consumer Price Index for Hills (Base Year 2005/06 =100)

Fiscal year Quarter/ Month	Overall Index	Food and Beverages	Cereals Grains & Their Products	Legume Varieties	Vegetables	Meat & Fish	Milk Products and Egg	Ghee and Oil	Fruits	Sugar & Sweets	Spices	Soft Drinks
2006/07	**105.7**	**106.9**	**106.2**	**119.8**	**110.1**	**106.1**	**110.6**	**104.6**	**104.7**	**92.6**	**116.9**	**100.6**
2007/08	**112.4**	**116.9**	**122.6**	**134.1**	**116.6**	**115.4**	**118.4**	**125.8**	**107.6**	**83.4**	**123.6**	**103.5**
2008/09	**126.3**	**135.8**	**138.7**	**161.5**	**127.7**	**143.1**	**130.3**	**147.2**	**122.0**	**124.4**	**137.5**	**132.6**
2009/10	**139.3**	**157.3**	**151.6**	**198.7**	**157.0**	**174.5**	**148.1**	**142.8**	**151.4**	**179.0**	**178.0**	**151.5**
I Qtr	**135.7**	**153.4**	**145.0**	**193.9**	**185.8**	**163.8**	**136.4**	**141.1**	**158.6**	**158.4**	**153.8**	**148.8**
July/Aug	134.8	151.3	143.2	191.8	183.8	161.9	134.2	139.7	162.4	146.4	148.1	146.9
Aug/Sep	135.9	153.9	144.9	195.1	186.1	164.2	136.4	141.7	161.1	164.2	155.1	148.6
Sep/Oct	136.4	154.8	146.8	194.9	187.7	165.4	138.6	141.9	152.5	164.7	158.2	151.0
II Qtr	**137.8**	**155.8**	**149.2**	**206.1**	**170.1**	**167.8**	**140.5**	**142.8**	**133.9**	**181.6**	**172.1**	**149.7**
Oct/Nov	137.9	156.7	148.8	199.2	191.6	165.3	139.6	142.9	135.2	169.4	164.6	149.3
Nov/Dec	137.9	156.1	149.1	208.6	172.4	168.6	140.8	142.9	131.4	176.4	173.1	149.8
Dec/Jan	137.4	154.5	149.7	210.5	146.3	169.6	141.2	142.7	135.1	198.9	178.5	149.9
III Qtr	**139.7**	**156.5**	**153.7**	**200.7**	**127.0**	**179.1**	**154.3**	**144.5**	**144.6**	**202.3**	**183.8**	**151.4**
Jan/Feb	139.2	156.0	151.8	209.0	131.3	171.0	153.4	145.4	146.2	214.5	183.6	150.0
Feb/Mar	139.2	155.5	154.3	199.1	119.2	179.5	154.6	145.3	141.0	204.7	184.7	150.7
Mar/Apr	140.6	158.0	155.0	193.9	130.6	186.9	154.9	144.8	146.7	187.5	183.0	153.5
IV Qtr	**143.9**	**163.5**	**158.6**	**193.9**	**145.2**	**187.1**	**161.3**	**142.8**	**168.5**	**173.7**	**202.2**	**156.1**
Apr/May	142.3	160.4	154.5	191.8	141.2	187.4	155.4	143.7	162.5	175.2	187.6	154.6
May/Jun	143.4	162.8	157.2	194.3	142.6	185.8	159.5	142.7	173.7	173.1	206.4	156.4
Jun/July	145.8	167.4	164.0	195.7	151.8	188.1	169.0	142.0	169.3	172.7	212.5	157.1
2010/11	**154.0**	**182.2**	**172.7**	**191.5**	**218.0**	**191.6**	**186.4**	**147.1**	**177.6**	**184.6**	**215.1**	**170.9**
I Qtr	**149.3**	**174.6**	**171.2**	**194.9**	**193.0**	**180.9**	**174.2**	**141.9**	**163.8**	**184.8**	**214.4**	**170.3**
July/Aug	148.5	172.7	170.6	195.3	183.0	176.7	166.2	142.4	172.5	185.9	213.3	167.8
Aug/Sep	149.0	174.3	171.9	195.4	186.0	180.9	177.7	142.0	158.2	184.7	219.9	172.0
Sep/Oct	150.4	176.9	171.0	194.0	210.0	185.1	178.6	141.4	160.6	183.8	209.9	171.1
II Qtr	**151.8**	**178.9**	**166.7**	**188.9**	**229.2**	**189.1**	**182.3**	**141.8**	**165.7**	**185.6**	**209.9**	**168.2**
Oct/Nov	150.8	177.1	165.7	191.2	219.5	189.2	181.7	141.6	165.8	182.5	207.7	168.5
Nov/Dec	150.7	176.7	165.6	187.7	217.5	186.6	181.8	141.4	163.3	186.3	210.2	169.4
Dec/Jan	154.0	182.8	168.9	187.8	250.5	191.6	183.5	142.3	168.1	187.9	211.8	166.8
III Qtr	**155.8**	**186.1**	**175.3**	**191.6**	**229.4**	**198.6**	**188.1**	**149.4**	**179.4**	**186.5**	**218.3**	**169.6**
Jan/Feb	155.0	184.8	172.9	190.1	240.6	197.2	183.9	146.1	171.4	191.0	216.8	168.0
Feb/Mar	155.3	185.1	176.4	191.9	219.6	198.3	184.0	150.5	179.3	184.1	217.9	168.2
Mar/Apr	157.2	188.4	177.1	192.7	227.9	200.4	196.4	151.7	187.6	184.4	220.1	172.6
IV Qtr	**158.9**	**189.3**	**177.6**	**190.6**	**220.3**	**197.9**	**201.0**	**155.1**	**201.4**	**181.7**	**217.7**	**175.6**
Apr/May	157.7	189.4	177.0	191.3	225.1	200.3	198.8	153.0	201.4	182.2	219.4	173.6
May/Jun	157.6	188.9	178.1	191.2	214.9	196.5	201.6	154.8	205.2	181.8	219.2	173.9
Jun/Jul	161.3	189.6	177.7	189.3	221.0	197.0	202.6	157.5	197.5	181.1	214.6	179.3
2011/12	**168.9**	**199.3**	**177.4**	**194.0**	**273.4**	**209.7**	**210.8**	**168.9**	**206.4**	**197.0**	**200.7**	**181.9**
I Qtr	**164.8**	**197.5**	**178.2**	**193.3**	**284.1**	**200.4**	**205.8**	**159.4**	**214.2**	**187.0**	**205.5**	**179.5**
Jul/Aug	163.7	195.2	178.0	194.1	262.3	200.7	206.1	159.7	208.8	183.7	207.7	177.6
Aug/Sep	165.4	199.7	180.5	195.0	292.6	200.7	205.7	159.6	224.7	187.5	204.9	179.7
Sep/Oct	165.4	197.5	176.1	190.9	297.5	199.8	205.5	158.8	209.1	189.7	203.8	181.3
II Qtr	**166.3**	**196.8**	**177.4**	**192.3**	**276.3**	**203.0**	**206.2**	**163.2**	**193.2**	**201.7**	**199.9**	**181.7**
Oct/Nov	165.5	197.7	177.2	190.8	294.4	204.1	205.1	159.9	194.0	193.8	202.5	181.7
Nov/Dec	165.2	196.3	177.6	190.6	281.0	199.4	207.1	162.0	193.3	200.5	199.3	181.7
Dec/Jan	168.2	196.3	177.3	195.4	253.6	205.6	206.5	167.6	192.4	210.7	198.0	181.6
III Qtr	**169.0**	**196.4**	**174.9**	**191.5**	**242.0**	**213.6**	**213.3**	**170.7**	**199.1**	**195.5**	**197.7**	**182.6**
Jan/Feb	168.3	195.4	175.1	191.4	239.2	210.5	210.9	169.0	197.4	195.9	196.9	181.9
Feb/Mar	168.6	195.9	174.7	190.0	238.0	214.0	212.4	168.2	200.6	194.9	198.2	182.3
Mar/Apr	170.0	198.0	174.9	193.0	248.7	216.3	216.5	174.8	199.2	195.7	198.1	183.7
IV Qtr	**175.6**	**206.7**	**179.0**	**199.0**	**291.1**	**221.7**	**218.0**	**182.2**	**219.0**	**203.8**	**199.8**	**183.9**
Apr/May	172.1	202.5	177.2	195.0	269.0	219.8	218.3	179.4	208.1	199.7	199.9	184.6
May/Jun	173.8	205.9	178.5	199.6	287.8	223.1	217.8	183.2	214.6	204.8	198.2	182.8
Jun/Jul	180.5	211.6	181.4	202.4	316.4	222.3	218.0	184.0	234.4	207.0	201.3	184.4
2012/13												
I Qtr	**183.0**	**216.6**	**186.8**	**215.8**	**323.6**	**224.6**	**222.1**	**192.0**	**221.9**	**228.0**	**209.6**	**193.3**
Jul/Aug	182.4	216.3	184.4	212.1	336.5	223.7	221.0	189.5	227.2	229.6	211.7	190.5
Aug/Sep	182.8	216.9	187.9	218.5	315.9	225.2	221.0	192.7	225.8	232.1	209.4	192.2
Sep/Oct	183.8	216.6	188.2	216.9	318.5	225.0	224.4	193.8	212.7	231.2	207.6	197.2

Appendix C (contd)
Consumer Price Index for Hills (Base Year 2005/06 = 100)

Hard Drinks	Tobacco Products	Restaurant & Hotel	Non-Food & Services	Clothing & Footwear	Housing & Utilities	Furnishing & Household Equipment	Health	Transport	Commu-nication	Recreation & Culture	Education	Miscellaneous Goods & Services
101.9	**105.9**	**104.4**	**104.6**	**102.4**	**107.4**	**107.8**	**103.4**	**113.0**	**100.0**	**100.1**	**101.7**	**100.7**
106.1	**114.1**	**111.0**	**108.6**	**104.9**	**113.9**	**114.2**	**110.2**	**113.4**	**100.0**	**100.7**	**109.3**	**102.0**
117.3	**129.4**	**144.6**	**118.4**	**117.3**	**123.0**	**131.9**	**117.0**	**130.5**	**100.4**	**106.7**	**114.4**	**114.5**
138.8	**150.8**	**172.3**	**124.9**	**126.9**	**125.6**	**143.8**	**123.9**	**123.6**	**100.4**	**115.1**	**129.4**	**123.2**
120.5	**143.8**	**163.7**	**121.6**	**123.4**	**120.0**	**137.8**	**120.8**	**120.3**	**100.4**	**114.0**	**128.8**	**120.3**
120.5	143.8	160.3	121.5	122.9	119.9	137.6	120.8	120.3	100.4	113.8	128.8	120.3
120.5	143.8	164.3	121.6	123.5	119.9	137.6	120.8	120.3	100.4	113.8	128.8	120.3
120.5	143.8	166.7	121.8	123.8	120.1	138.1	120.8	120.3	100.4	114.3	128.8	120.3
144.7	**148.1**	**169.5**	**123.4**	**126.4**	**122.7**	**141.7**	**124.1**	**120.0**	**100.4**	**114.3**	**128.8**	**122.2**
144.7	148.1	167.6	122.9	126.1	120.8	141.5	124.1	120.0	100.4	114.3	128.8	122.2
144.7	148.1	169.8	123.5	126.4	123.2	141.9	124.1	120.0	100.4	114.3	128.8	122.2
144.7	148.1	171.0	123.8	126.7	124.2	141.8	124.1	120.0	100.4	114.4	128.8	122.2
144.9	**152.5**	**173.6**	**126.1**	**128.1**	**127.8**	**144.9**	**124.4**	**126.4**	**100.4**	**116.0**	**129.9**	**123.4**
144.9	152.5	173.4	125.8	127.8	126.6	145.0	124.4	126.4	100.4	115.8	129.9	123.4
144.9	152.5	173.4	126.0	128.1	127.4	145.0	124.4	126.4	100.4	115.9	129.9	123.4
144.9	152.5	174.0	126.5	128.3	129.5	144.7	124.4	126.4	100.4	116.2	129.9	123.4
145.1	**158.9**	**182.3**	**128.3**	**129.9**	**132.1**	**150.8**	**126.3**	**127.6**	**100.4**	**116.3**	**129.9**	**126.8**
145.1	158.9	181.0	127.9	129.2	131.2	150.3	126.3	127.6	100.4	116.2	129.9	126.8
145.1	158.9	182.4	128.1	129.6	131.3	150.8	126.3	127.6	100.4	116.2	129.9	126.8
145.1	158.9	183.7	128.8	130.8	133.7	151.2	126.3	127.6	100.4	116.4	129.9	126.8
157.4	**167.0**	**197.0**	**132.5**	**149.1**	**135.0**	**143.1**	**120.1**	**143.8**	**90.6**	**115.9**	**137.3**	**128.7**
149.6	**159.0**	**191.7**	**129.9**	**140.9**	**133.5**	**137.3**	**124.5**	**137.6**	**93.9**	**114.2**	**135.8**	**126.0**
149.6	159.0	189.8	129.8	137.8	134.7	136.4	128.7	137.5	94.7	114.1	135.8	126.2
149.6	159.0	191.3	129.6	137.8	133.7	137.0	128.7	137.5	94.7	114.0	135.8	126.6
149.6	159.0	194.0	130.2	147.2	132.0	138.6	116.0	137.7	92.2	114.5	135.8	127.0
153.9	**163.5**	**196.4**	**131.2**	**147.6**	**133.8**	**140.5**	**116.9**	**140.0**	**92.3**	**116.1**	**135.8**	**127.4**
149.6	159.0	196.9	130.7	147.2	132.0	138.6	116.0	137.0	92.5	118.3	135.8	127.9
149.6	159.0	198.4	130.9	147.2	134.5	139.0	116.0	138.2	92.5	115.1	135.8	128.2
162.4	172.5	194.0	132.1	148.5	135.0	144.0	118.6	144.9	91.9	114.8	135.8	126.0
162.4	**172.5**	**196.0**	**132.9**	**149.9**	**135.9**	**144.8**	**118.7**	**146.2**	**90.7**	**115.9**	**135.8**	**127.5**
162.4	172.5	194.7	132.3	145.8	135.9	144.2	118.6	144.8	91.9	115.4	135.8	126.4
162.4	172.5	196.3	132.7	148.5	135.9	143.8	118.6	146.8	91.9	116.3	135.8	127.7
162.4	172.5	197.1	133.6	155.5	135.9	146.4	118.8	146.9	88.2	116.1	135.8	128.4
163.9	**172.8**	**203.8**	**135.8**	**157.9**	**136.9**	**149.8**	**120.3**	**151.5**	**85.4**	**117.2**	**141.8**	**133.1**
162.4	172.5	201.2	133.8	155.5	136.0	147.5	118.8	146.7	88.2	116.3	135.8	130.8
162.4	172.5	203.1	134.0	155.5	135.9	147.8	118.8	147.5	88.2	116.5	135.8	132.8
166.8	173.4	207.1	139.7	162.7	138.8	154.1	123.3	160.3	79.7	118.9	153.8	135.8
176.9	**185.1**	**228.3**	**145.9**	**177.5**	**143.2**	**165.9**	**130.3**	**169.6**	**78.2**	**122.2**	**155.8**	**140.6**
166.8	**173.4**	**219.7**	**140.4**	**165.0**	**139.4**	**154.4**	**124.0**	**160.4**	**79.3**	**120.0**	**153.8**	**137.0**
166.8	173.4	217.3	139.9	162.7	139.3	153.9	123.3	160.2	79.8	119.9	153.8	137.4
166.8	173.4	219.6	139.9	162.7	139.4	153.7	123.3	160.2	79.8	120.0	153.8	137.0
166.8	173.4	222.1	141.3	169.6	139.5	155.7	125.4	160.8	78.3	120.0	153.8	136.5
171.9	**179.6**	**224.1**	**143.2**	**173.3**	**140.4**	**160.2**	**127.9**	**164.6**	**78.5**	**121.0**	**153.8**	**137.3**
166.8	173.4	223.1	141.4	169.6	139.8	156.1	125.4	160.8	78.3	120.0	153.8	136.7
166.8	173.4	225.3	141.7	169.6	140.0	157.7	125.4	160.8	78.3	120.3	153.8	137.4
182.2	192.0	224.0	146.5	180.8	141.4	166.8	132.8	172.1	78.9	122.8	153.8	137.7
182.2	**192.0**	**229.9**	**148.0**	**183.1**	**144.9**	**167.7**	**133.5**	**174.4**	**78.2**	**123.3**	**153.8**	**141.4**
182.2	192.0	225.7	147.4	180.8	144.3	166.8	132.8	173.6	78.9	122.9	153.8	140.8
182.2	192.0	230.5	147.5	180.8	144.5	167.0	132.8	174.2	78.9	123.0	153.8	141.1
182.2	192.0	233.5	149.0	187.7	145.9	169.4	134.9	175.3	76.7	123.9	153.8	142.4
186.8	**195.4**	**239.5**	**151.9**	**188.7**	**148.1**	**173.4**	**135.8**	**179.1**	**76.7**	**124.4**	**161.9**	**146.5**
182.2	192.0	237.9	149.6	187.7	146.4	171.3	134.9	175.3	76.7	124.6	153.8	145.4
182.2	192.0	238.5	149.5	187.7	146.1	171.5	134.9	175.4	76.7	124.3	153.8	145.8
196.0	202.2	242.0	156.6	190.8	151.9	177.3	137.6	186.7	76.8	124.3	178.1	148.4
196.0	**202.2**	**246.5**	**157.5**	**193.3**	**153.2**	**178.7**	**137.9**	**187.4**	**76.8**	**124.4**	**178.1**	**149.3**
196.0	202.2	246.4	156.7	190.8	152.0	177.9	137.6	186.9	76.8	124.8	178.1	148.5
196.0	202.2	247.6	157.0	190.8	153.2	177.8	137.6	187.4	76.8	124.4	178.1	148.5
196.0	202.2	245.6	158.7	198.2	154.5	180.5	138.4	187.8	76.9	123.9	178.1	151.0

Appendix 8

Consumer Price Index of Kathmandu Valley (Base Year: 2005/06 = 100)

Fiscal Year	Overall Index	Food and Beverages	Non-Food and Services
1972/73	6.0	6.0	6.3
1973/74	6.9	7.0	7.0
1974/75	8.0	8.1	8.3
1975/76	8.5	8.4	8.9
1976/77	8.5	8.1	9.4
1977/78	9.4	9.3	9.8
1978/79	9.7	9.5	10.3
1979/80	10.8	10.8	11.3
1980/81	12.5	12.5	12.8
1981/82	13.8	13.8	14.1
1982/83	15.5	15.8	15.4
1983/84	16.3	16.6	16.4
1984/85	16.9	16.7	17.8
1985/86	19.8	20.1	19.9
1986/87	22.6	23.4	22.0
1987/88	24.7	25.8	23.7
1988/89	26.8	27.6	26.4
1989/90	31.0	33.0	29.0
1990/91	34.1	36.2	31.9
1991/92	41.2	44.4	37.7
1992/93	46.2	48.7	43.7
1993/94	52.1	55.4	48.7
1994/95	56.3	59.1	53.6
1995/96	59.6	62.7	56.6
1996/97	64.2	67.1	61.3
1997/98	69.0	72.2	65.7
1998/99	74.6	80.7	68.6
1999/00	77.3	82.1	72.7
2000/01	79.7	81.8	77.6
2001/02	81.3	83.9	78.9
2002/03	84.4	86.2	82.8
2003/04	89.5	91.3	87.7
2004/05	93.9	95.2	92.7
2005/06	100.0	100.0	100.0

Appendix 8 (contd)

Consumer Price Index for Kathmandu Valley (Base Year: 2005/06 = 100)

Fiscal year Quarter/ Month	Overall Index	Food and Beverages	Cereals Grains & Their Products	Legume Varieties	Vegetables	Meat & Fish	Milk Products and Egg	Ghee and Oil	Fruits	Sugar & Sweets	Spices	Soft Drinks
2006/07	**106.5**	**106.5**	**105.7**	**118.0**	**108.3**	**107.6**	**107.0**	**107.6**	**108.0**	**93.5**	**122.6**	**99.7**
2007/08	**113.8**	**116.6**	**118.2**	**127.8**	**122.2**	**116.4**	**119.5**	**131.8**	**113.1**	**85.1**	**129.1**	**104.8**
2008/09	**129.8**	**140.0**	**144.2**	**158.1**	**134.2**	**142.6**	**138.5**	**155.7**	**131.8**	**127.0**	**144.5**	**125.0**
2009/10	**141.8**	**159.6**	**152.7**	**205.7**	**163.2**	**175.8**	**152.4**	**144.1**	**158.8**	**178.9**	**181.2**	**152.4**
I Qtr	**140.3**	**158.7**	**148.0**	**192.9**	**195.2**	**171.0**	**144.9**	**144.8**	**169.4**	**154.4**	**163.1**	**151.5**
July/Aug	138.9	155.6	145.2	193.9	183.1	169.9	139.7	144.8	179.5	150.6	162.8	150.7
Aug/Sep	140.5	159.2	148.5	191.7	199.9	172.2	146.3	144.7	167.5	155.2	162.8	151.8
Sep/Oct	141.4	161.3	150.2	193.0	202.5	171.1	148.6	144.8	161.1	157.3	163.9	152.0
II Qtr	**141.3**	**159.7**	**150.6**	**216.2**	**181.2**	**166.4**	**150.2**	**143.9**	**146.9**	**179.7**	**171.2**	**152.1**
Oct/Nov	142.1	162.0	150.6	209.9	210.9	164.3	148.7	144.6	148.2	169.0	167.0	152.0
Nov/Dec	140.8	158.5	150.8	219.8	174.9	163.7	148.7	142.9	145.4	170.8	171.7	152.1
Dec/Jan	141.0	158.5	150.5	219.0	157.8	171.2	153.3	144.2	147.1	199.4	174.7	152.1
III Qtr	**140.6**	**156.3**	**152.7**	**211.2**	**126.2**	**181.8**	**154.9**	**145.0**	**151.0**	**202.9**	**182.9**	**152.4**
Jan/Feb	140.6	156.6	152.1	220.0	132.9	172.5	154.8	146.1	147.8	213.5	181.9	152.2
Feb/Mar	139.8	154.7	153.0	211.0	115.0	186.4	154.9	145.9	145.3	203.2	180.3	152.3
Mar/Apr	141.3	157.4	152.9	202.5	130.8	186.5	154.9	143.1	159.9	191.9	186.5	152.7
IV Qtr	**145.0**	**163.7**	**159.6**	**202.4**	**150.2**	**183.7**	**159.7**	**142.7**	**167.9**	**178.6**	**207.7**	**153.7**
Apr/May	143.2	160.0	155.0	196.8	139.1	188.2	155.1	142.0	168.5	180.4	190.4	153.3
May/Jun	144.6	162.8	160.5	204.6	144.8	179.3	160.4	143.1	166.9	177.9	204.0	153.8
Jun/July	147.1	168.1	163.5	205.7	166.6	183.7	163.7	142.9	168.4	177.6	228.6	153.9
2010/11	**158.9**	**187.5**	**174.4**	**180.4**	**244.8**	**193.5**	**170.5**	**151.8**	**181.7**	**310.4**	**236.3**	**145.3**
I Qtr	**155.8**	**182.7**	**172.4**	**189.1**	**228.1**	**193.4**	**163.2**	**144.7**	**172.2**	**251.5**	**246.4**	**148.1**
July/Aug	153.5	177.3	170.0	191.2	209.2	192.5	161.6	142.8	177.9	175.6	238.9	146.4
Aug/Sep	155.5	184.4	173.2	189.9	225.5	193.1	163.4	145.6	172.2	290.6	260.9	149.8
Sep/Oct	158.4	186.3	173.9	186.1	249.6	194.7	164.7	145.6	166.5	288.2	239.3	148.2
II Qtr	**159.8**	**190.2**	**176.7**	**181.2**	**281.0**	**188.2**	**165.0**	**148.9**	**160.7**	**334.7**	**233.6**	**145.7**
Oct/Nov	158.4	189.3	174.5	182.5	275.2	191.7	165.1	149.1	154.4	335.2	237.7	148.5
Nov/Dec	160.6	190.5	177.3	181.0	283.1	185.4	164.9	148.2	155.7	334.2	233.8	148.2
Dec/Jan	160.5	190.9	178.4	180.0	284.7	187.5	165.0	149.4	171.9	334.6	229.4	140.4
III Qtr	**159.3**	**188.1**	**174.7**	**177.1**	**240.1**	**197.6**	**169.6**	**155.0**	**184.4**	**332.8**	**236.6**	**142.1**
Jan/Feb	159.3	188.4	172.8	176.5	265.6	193.0	164.3	130.8	174.7	341.0	228.7	140.2
Feb/Mar	159.2	187.4	174.3	177.9	234.6	198.8	166.8	156.1	184.7	332.4	239.0	142.4
Mar/Apr	159.5	188.4	176.9	176.8	220.2	199.0	177.6	158.2	193.9	325.0	242.0	143.7
IV Qtr	**160.7**	**188.8**	**174.0**	**174.3**	**230.1**	**194.7**	**184.1**	**158.6**	**209.3**	**322.5**	**228.8**	**145.1**
Apr/May	159.9	189.3	179.1	175.9	215.3	198.2	181.6	157.5	210.0	324.4	239.4	143.7
May/Jun	159.8	188.4	174.5	175.9	222.9	192.8	185.0	158.8	214.8	322.4	226.5	145.8
Jun/Jul	162.3	188.7	168.4	171.1	252.1	193.1	185.8	159.6	203.1	320.6	220.4	145.9
2011/12	**170.6**	**201.4**	**179.4**	**184.0**	**297.0**	**205.6**	**192.0**	**171.2**	**206.9**	**350.5**	**206.9**	**151.5**
I Qtr	**166.6**	**198.2**	**175.8**	**177.0**	**312.1**	**199.3**	**185.0**	**160.1**	**212.5**	**332.3**	**210.5**	**147.2**
Jul/Aug	163.7	191.7	169.2	172.7	276.1	197.7	185.1	157.8	205.1	322.8	210.0	146.4
Aug/Sep	165.9	197.1	172.8	176.9	307.3	199.2	184.6	161.2	216.9	332.9	211.6	146.4
Sep/Oct	170.3	205.8	185.4	181.3	352.8	200.9	185.3	161.2	215.6	341.2	210.0	148.7
II Qtr	**170.3**	**203.9**	**188.1**	**188.6**	**321.2**	**196.6**	**185.5**	**165.8**	**200.3**	**360.8**	**204.4**	**149.1**
Oct/Nov	169.7	204.1	186.2	186.3	340.9	196.4	185.5	161.0	199.5	359.6	205.9	148.7
Nov/Dec	170.1	204.9	187.6	191.0	334.9	196.3	185.6	165.7	204.1	359.4	206.3	148.7
Dec/Jan	171.0	202.8	190.4	188.6	287.7	197.1	185.3	170.6	197.4	372.5	200.9	149.9
III Qtr	**169.1**	**195.7**	**174.3**	**180.4**	**244.1**	**209.0**	**197.9**	**174.4**	**201.0**	**349.3**	**200.2**	**151.9**
Jan/Feb	169.3	197.4	175.9	182.4	261.5	204.8	198.9	172.6	196.7	353.7	199.6	149.9
Feb/Mar	168.2	193.9	173.5	179.3	233.4	208.4	197.0	174.5	198.9	345.2	199.9	149.9
Mar/Apr	169.7	195.8	173.6	179.4	237.3	213.9	197.9	176.1	207.4	348.9	201.0	156.0
IV Qtr	**176.4**	**207.6**	**179.2**	**190.0**	**310.8**	**217.5**	**199.7**	**184.4**	**213.8**	**359.6**	**212.4**	**157.7**
Apr/May	172.6	201.7	175.4	181.4	279.5	217.0	198.6	181.3	207.6	355.9	205.8	156.0
May/Jun	174.9	207.7	180.5	192.0	305.7	218.3	199.9	185.8	220.1	359.9	207.4	157.3
Jun/Jul	181.7	213.4	181.8	196.5	347.2	217.1	200.7	186.0	213.6	363.1	223.9	159.9
2012/13												
I Qtr	**185.4**	**220.2**	**185.9**	**204.2**	**362.4**	**226.4**	**203.6**	**191.7**	**220.1**	**401.3**	**226.3**	**169.6**
Jul/Aug	183.8	217.2	181.3	197.9	364.8	221.0	202.7	187.2	228.2	383.1	225.5	169.5
Aug/Sep	185.6	220.6	189.2	211.5	346.7	226.9	204.0	193.0	214.1	413.3	226.7	169.5
Sep/Oct	186.9	222.9	187.3	203.1	375.6	231.4	204.0	194.9	218.0	407.6	226.6	169.9

Appendix B (contd)

Consumer Price Index of Kathmandu Valley (Base Year 2005/06 = 100)

Hard Drinks	Tobacco Products	Restaurant & Hotel	Non-Food & Services	Clothing & Footware	Housing & Utilities	Furnishing & Household Equipment	Health	Transport	Commu-nication	Recreation & Culture	Education	Miscellaneous Goods & Services
103.4	**108.9**	**102.4**	**106.5**	**106.2**	**105.2**	**109.3**	**102.3**	**107.8**	**100.0**	**106.7**	**111.8**	**101.4**
106.1	**120.1**	**109.6**	**111.1**	**110.4**	**110.7**	**115.9**	**106.8**	**112.6**	**100.0**	**113.7**	**116.2**	**101.7**
121.7	**147.1**	**136.8**	**120.6**	**116.6**	**117.9**	**131.4**	**112.0**	**133.4**	**100.0**	**120.1**	**128.3**	**121.6**
128.4	**163.2**	**169.5**	**126.2**	**122.8**	**120.7**	**138.8**	**113.3**	**127.2**	**100.0**	**126.7**	**148.6**	**126.3**
126.3	**162.9**	**157.9**	**124.2**	**119.7**	**116.4**	**135.6**	**112.5**	**126.8**	**100.0**	**125.6**	**148.6**	**123.6**
126.3	162.9	150.3	124.2	119.6	116.4	135.6	112.5	126.8	100.0	125.5	148.6	123.6
126.3	162.9	153.6	124.2	119.7	116.4	135.6	112.5	126.8	100.0	126.0	148.6	123.6
126.3	162.9	169.6	124.2	119.9	116.4	135.6	112.5	126.8	100.0	125.4	148.6	123.6
129.1	**162.9**	**170.4**	**125.2**	**122.5**	**117.9**	**137.6**	**112.8**	**127.0**	**100.0**	**126.1**	**148.6**	**125.3**
129.1	162.9	170.4	124.9	122.5	116.4	137.6	112.8	127.0	100.0	125.9	148.6	125.3
129.1	162.9	170.4	125.3	122.5	118.2	137.6	112.8	127.0	100.0	126.0	148.6	125.3
129.1	162.9	170.4	125.6	122.5	119.1	137.6	112.8	127.0	100.0	126.5	148.6	125.3
129.1	**163.4**	**171.1**	**126.6**	**122.9**	**123.0**	**137.5**	**112.9**	**127.0**	**100.0**	**127.0**	**148.7**	**127.4**
129.1	163.4	170.5	126.4	122.5	122.2	137.7	112.9	127.0	100.0	126.8	148.7	127.4
129.1	163.4	171.3	126.5	122.6	122.8	137.3	112.9	127.0	100.0	127.0	148.7	127.4
129.1	163.4	171.4	126.9	123.5	124.0	137.4	112.9	127.0	100.0	127.0	148.7	127.4
129.3	**163.4**	**178.9**	**128.7**	**126.3**	**125.6**	**144.6**	**114.9**	**128.2**	**100.0**	**127.9**	**148.7**	**128.9**
129.3	163.4	178.2	128.4	125.2	125.1	145.5	114.9	128.2	100.0	127.7	148.7	128.9
129.3	163.4	178.9	128.6	126.8	125.1	144.1	114.9	128.2	100.0	128.0	148.7	128.9
129.3	163.4	179.4	128.9	126.8	126.5	144.2	114.9	128.2	100.0	128.0	148.7	128.9
128.3	**172.6**	**193.8**	**135.7**	**137.6**	**131.1**	**151.1**	**127.0**	**127.7**	**90.9**	**141.6**	**163.3**	**134.9**
143.9	**170.5**	**183.9**	**133.6**	**131.3**	**131.0**	**143.3**	**125.5**	**130.7**	**93.5**	**134.9**	**162.4**	**131.9**
143.9	170.5	181.6	133.6	129.9	134.7	141.1	123.7	130.7	93.5	133.6	162.4	133.0
143.9	170.5	183.0	131.9	129.9	123.9	141.7	123.7	130.7	93.5	135.9	162.4	131.4
143.9	170.5	187.0	135.3	134.1	134.5	147.0	129.1	130.7	93.5	135.1	162.4	131.3
134.9	**171.7**	**192.4**	**135.2**	**135.6**	**132.6**	**149.0**	**128.1**	**128.1**	**92.3**	**137.5**	**162.4**	**132.4**
143.9	170.5	189.3	133.4	134.1	123.7	147.5	129.1	130.6	93.5	135.8	162.4	131.4
143.9	170.5	189.2	136.2	134.1	136.8	146.2	129.1	132.0	93.5	137.3	162.4	131.4
116.8	174.1	198.6	135.9	138.6	137.2	153.2	126.1	121.7	90.0	139.4	162.4	134.5
116.8	**174.1**	**198.5**	**136.0**	**140.0**	**131.5**	**154.4**	**126.5**	**124.2**	**89.6**	**145.3**	**162.4**	**135.8**
116.8	174.1	199.1	135.6	138.6	134.2	153.3	126.1	121.7	90.0	142.0	162.4	134.7
116.8	174.1	197.8	136.3	138.6	132.4	154.4	126.1	125.4	90.0	146.8	162.4	136.3
116.8	174.1	198.6	136.2	142.8	128.0	155.6	127.2	125.4	88.9	147.0	162.4	136.3
117.8	**174.1**	**200.4**	**137.8**	**143.6**	**129.4**	**157.8**	**128.0**	**127.8**	**88.0**	**148.8**	**166.0**	**139.4**
116.8	174.1	198.6	136.2	142.8	128.0	155.8	127.2	125.4	88.9	147.3	162.4	136.3
116.8	174.1	200.9	136.6	142.8	127.9	156.4	127.2	127.0	88.9	148.2	162.4	138.6
119.8	174.1	201.6	140.7	145.3	132.4	161.3	129.5	130.9	86.3	150.8	173.2	143.4
125.8	**181.7**	**213.0**	**145.7**	**154.9**	**135.6**	**169.4**	**132.9**	**139.4**	**83.8**	**160.5**	**173.8**	**148.5**
119.8	**174.1**	**205.9**	**141.3**	**147.4**	**131.6**	**163.4**	**129.9**	**131.3**	**85.6**	**153.4**	**173.2**	**145.3**
119.8	174.1	204.5	140.8	145.3	131.2	162.6	129.5	130.9	86.3	152.0	173.2	144.8
119.8	174.1	206.2	140.9	145.3	131.6	162.8	129.5	130.9	86.3	152.1	173.2	145.4
119.8	174.1	206.9	142.2	151.7	132.0	164.7	130.6	132.0	84.3	156.0	173.2	145.8
122.7	**177.1**	**207.5**	**143.4**	**152.8**	**132.3**	**166.4**	**131.3**	**134.7**	**84.2**	**158.2**	**173.2**	**146.7**
119.8	174.1	207.1	142.4	151.7	132.3	164.9	130.6	132.1	84.3	156.0	173.2	146.1
119.8	174.1	207.7	142.6	151.7	132.3	165.0	130.6	132.1	84.3	157.0	173.2	146.4
128.5	183.0	207.8	145.1	155.0	132.3	169.2	132.7	139.9	83.9	161.7	173.2	147.7
128.5	**183.0**	**216.7**	**147.2**	**156.8**	**136.2**	**171.2**	**133.7**	**144.2**	**83.3**	**164.7**	**173.2**	**149.6**
128.5	183.0	214.0	146.3	155.0	135.6	170.0	132.7	142.6	83.9	164.5	173.2	149.0
128.5	183.0	217.1	146.9	155.0	136.3	170.2	132.7	144.3	83.9	164.8	173.2	149.6
128.5	183.0	219.0	148.1	160.3	136.8	173.4	135.7	145.6	82.0	164.9	173.2	150.1
132.2	**192.6**	**222.0**	**150.8**	**162.4**	**142.1**	**176.6**	**136.6**	**147.4**	**82.0**	**165.6**	**175.6**	**152.5**
128.5	183.0	221.9	148.2	160.3	136.6	173.7	135.7	146.0	82.0	165.0	173.2	151.0
128.5	183.0	222.0	148.4	160.3	136.6	174.1	135.7	146.0	82.0	165.3	173.2	152.4
139.6	211.8	222.1	155.7	166.7	153.2	182.0	138.5	150.1	81.9	166.5	180.4	154.2
139.6	**211.8**	**227.6**	**157.2**	**167.3**	**154.9**	**186.1**	**139.0**	**151.5**	**81.9**	**171.2**	**180.4**	**159.8**
139.6	211.8	224.4	156.5	166.7	153.5	185.1	138.5	150.2	81.9	170.8	180.4	159.1
139.6	211.8	226.5	157.2	166.7	155.6	185.4	138.5	152.1	81.9	171.0	180.4	159.1
139.6	211.8	232.0	157.9	168.4	155.6	187.9	139.9	152.1	81.8	171.8	180.4	161.1

Appendix E

Monetary Survey (Million Rupees)

	Foreign Assets, Net (2-3)	Foreign Assets	Foreign Liabilities	Non-domestic assets (5-14)	Domestic Credit (6+9+13)	Claims on Government, net (7-8)	Claims on Government*	Government Deposits
Mid-Month	1	2	3	4	5	6	7	8
1960 Jul	**171.9**	**171.9**	**0.0**	**28.1**	**28.4**	**-3.9**	**63.2**	**67.1**
1961 Jul	**206.9**	**206.9**	**0.0**	**28.7**	**34.9**	**-11.1**	**63.9**	**75.0**
1962 Jul	**236.1**	**236.1**	**0.0**	**43.6**	**45.2**	**-12.5**	**77.8**	**89.8**
1963 Jul	**267.6**	**267.6**	**0.0**	**36.5**	**44.1**	**-18.1**	**84.3**	**102.4**
1964 Jul	**381.4**	**381.4**	**0.0**	**23.9**	**59.8**	**-41.0**	**67.5**	**108.5**
1965 Jul	**449.5**	**449.5**	**0.0**	**40.2**	**73.1**	**-51.7**	**73.3**	**125.1**
1966 Jul	**367.4**	**367.4**	**0.0**	**155.3**	**169.3**	**-24.2**	**85.5**	**109.7**
1967 Jul	**408.5**	**408.5**	**0.0**	**127.1**	**180.0**	**5.8**	**88.7**	**82.9**
1968 Jul	**660.6**	**660.6**	**0.0**	**66.5**	**140.3**	**-88.9**	**72.2**	**161.1**
1969 Jul	**894.3**	**905.9**	**11.6**	**-57.1**	**32.2**	**-201.6**	**77.6**	**279.2**
1970 Jul	**1,007.2**	**1,017.0**	**9.8**	**-51.9**	**96.8**	**-201.2**	**129.4**	**330.6**
1971 Jul	**1,047.6**	**1,114.4**	**66.8**	**24.5**	**212.8**	**-145.3**	**175.7**	**321.0**
1972 Jul	**1,170.1**	**1,238.4**	**59.3**	**82.7**	**361.8**	**-80.3**	**249.3**	**329.6**
1973 Jul	**1,383.0**	**1,456.3**	**73.3**	**146.2**	**597.3**	**42.2**	**318.8**	**276.6**
1974 Jul	**1,451.5**	**1,577.3**	**125.8**	**459.5**	**970.2**	**139.9**	**415.9**	**276.0**
1975 Jul	**1,029.1**	**1,412.0**	**382.9**	**1,035.3**	**1,637.8**	**285.7**	**532.4**	**246.7**
1976 Jul	**1,575.0**	**1,870.7**	**295.7**	**949.0**	**1,763.3**	**479.8**	**653.1**	**173.3**
1977 Jul	**1,875.2**	**2,232.7**	**357.5**	**1,347.8**	**2,125.0**	**749.8**	**917.6**	**167.8**
1978 Jul	**1,783.3**	**2,129.8**	**346.5**	**1,988.8**	**2,905.3**	**965.5**	**1,144.2**	**178.7**
1979 Jul	**2,288.0**	**2,805.6**	**517.6**	**2,223.4**	**3,540.8**	**1,129.5**	**1,313.1**	**183.8**
1980 Jul	**2,251.9**	**2,806.0**	**574.1**	**3,053.4**	**4,305.8**	**1,258.5**	**1,421.8**	**163.0**
1981 Jul	**2,414.5**	**3,134.9**	**720.4**	**3,893.2**	**5,161.4**	**1,262.7**	**1,334.5**	**71.6**
1982 Jul	**3,097.4**	**3,911.2**	**813.8**	**4,360.6**	**6,043.1**	**2,061.5**	**2,061.5**	**0.0**
1983 Jul	**2,611.4**	**3,251.7**	**640.3**	**6,611.0**	**8,490.9**	**4,089.6**	**4,089.6**	**0.0**
1984 Jul	**2,539.8**	**3,213.6**	**673.8**	**7,915.4**	**9,824.5**	**5,028.7**	**5,028.7**	**0.0**
1985 Jul	**1,897.6**	**2,600.2**	**702.6**	**10,399.0**	**12,550.9**	**6,492.1**	**6,492.1**	**0.0**
1986 Jul	**2,600.0**	**3,743.3**	**1,143.3**	**12,559.0**	**15,322.9**	**7,495.7**	**7,495.7**	**0.0**
1987 Jul	**3,099.9**	**4,477.2**	**1,417.3**	**14,438.3**	**17,803.1**	**8,712.3**	**8,712.3**	**0.0**
1988 Jul	**5,873.6**	**7,395.4**	**1,821.8**	**15,849.0**	**20,469.3**	**9,259.0**	**9,525.9**	**266.9**
1989 Jul	**6,203.5**	**8,691.0**	**2,487.5**	**20,401.6**	**26,584.3**	**12,345.1**	**12,345.1**	**0.0**
1990 Jul	**9,338.9**	**12,014.4**	**2,675.5**	**22,213.5**	**29,661.6**	**13,940.2**	**13,940.2**	**0.0**
1991 Jul	**16,151.7**	**19,270.0**	**3,118.3**	**21,560.9**	**34,491.4**	**16,821.4**	**16,922.6**	**101.2**
1992 Jul	**20,792.4**	**24,882.3**	**4,089.9**	**24,878.1**	**41,669.3**	**19,001.6**	**19,001.6**	**0.0**
1993 Jul	**29,125.0**	**34,225.0**	**5,100.0**	**29,197.5**	**49,404.9**	**23,446.2**	**23,446.2**	**0.0**
1994 Jul	**36,218.1**	**42,748.3**	**6,530.2**	**33,850.0**	**57,828.1**	**23,482.0**	**23,482.0**	**0.0**
1995 Jul	**37,085.5**	**43,863.1**	**6,777.6**	**43,899.2**	**72,184.7**	**25,191.2**	**25,191.2**	**0.0**
1996 Jul	**37,703.6**	**45,270.3**	**7,566.7**	**54,948.6**	**89,265.7**	**27,531.7**	**27,531.7**	**0.0**
1997 Jul	**40,191.1**	**49,366.5**	**9,175.4**	**63,529.5**	**100,916.7**	**29,229.4**	**29,229.4**	**0.0**
1998 Jul	**55,572.8**	**66,114.0**	**10,541.2**	**70,889.8**	**115,812.1**	**31,753.1**	**31,753.1**	**0.0**
1999 Jul	**65,027.6**	**77,611.0**	**12,583.4**	**87,772.6**	**134,832.7**	**34,918.2**	**34,918.2**	**0.0**
2000 Jul	**80,467.5**	**94,855.8**	**14,388.3**	**105,653.3**	**158,001.1**	**38,242.6**	**38,242.6**	**0.0**
2001 Jul	**87,798.1**	**106,190.7**	**18,392.6**	**126,656.1**	**187,855.4**	**49,191.1**	**49,191.1**	**0.0**
2002 Jul	**88,419.1**	**106,996.2**	**18,577.1**	**135,569.2**	**207,323.6**	**59,576.6**	**59,576.6**	**0.0**
2003 Jul	**91,407.0**	**109,306.3**	**17,899.3**	**154,504.2**	**228,443.8**	**62,825.0**	**63,286.7**	**461.7**
2004 Jul	**108,804.7**	**131,366.0**	**22,561.3**	**168,505.4**	**251,089.9**	**62,313.7**	**63,066.7**	**753.0**
2005 Jul	**107,742.1**	**130,916.8**	**23,174.7**	**192,697.9**	**285,157.5**	**68,811.6**	**68,811.6**	**0.0**
2006 Jul	**139,439.1**	**166,101.6**	**26,662.5**	**207,982.7**	**307,020.6**	**75,518.6**	**75,518.6**	**0.0**
2006 Jul*	**139,439.2**	**166,101.7**	**26,662.5**	**207,384.9**	**327,634.4**	**75,921.2**	**75,921.2**	**0.0**
2007 Jul	**131,909.5**	**165,713.5**	**33,804.0**	**263,608.7**	**365,235.1**	**83,010.6**	**86,133.2**	**3,122.5**
2008 Jul	**171,455.4**	**213,254.1**	**41,798.7**	**323,921.7**	**442,282.3**	**92,092.0**	**96,021.2**	**3,929.2**
2009 Jul	**224,562.3**	**287,090.8**	**62,528.5**	**405,950.9**	**560,670.7**	**109,862.9**	**109,862.9**	**0.0**
2010 Jul	**213,036.5**	**275,222.5**	**62,186.0**	**506,562.7**	**654,666.4**	**136,812.8**	**136,812.8**	**0.0**
2011 Jul	**216,611.2**	**278,833.7**	**62,222.5**	**571,670.2**	**734,968.7**	**158,491.5**	**158,491.5**	**0.0**
2011 Jul**	**216,039.2**	**278,883.8**	**62,844.6**	**706,004.2**	**912,690.6**	**163,553.6**	**163,553.6**	**0.0**
2011 Aug*	227,092.5	290,649.8	63,557.3	693,099.2	900,292.3	152,167.6	152,167.6	0.0
2011 Sep*	241,998.9	307,209.7	65,210.8	695,118.3	908,684.8	153,135.7	153,135.7	0.0
2011 Oct*	263,620.0	332,308.0	68,688.1	713,235.5	926,706.0	161,111.3	161,111.3	0.0
2011 Nov*	282,129.1	350,077.1	67,948.0	705,024.1	918,076.7	156,852.9	156,852.9	0.0
2011 Dec*	300,795.5	376,271.9	69,476.4	696,153.9	927,709.0	155,394.2	155,394.2	0.0
2012 Jan*	302,967.3	369,471.6	66,484.3	713,079.6	923,813.3	135,968.1	150,336.1	14,368.0
2012 Feb*	303,631.7	367,238.3	63,606.6	725,518.0	932,731.4	140,438.4	150,339.5	9,909.0
2012 Mar*	308,765.1	375,205.2	66,440.1	725,524.6	943,261.1	141,933.4	153,354.9	11,421.5
2012 Apr*	326,480.2	394,330.3	67,850.1	719,921.8	940,226.0	130,654.8	157,827.2	27,172.4
2012 May*	342,830.0	412,244.2	69,414.3	718,841.3	948,685.8	130,362.0	161,852.4	31,490.3
2012 Jun*	363,062.8	434,441.4	71,378.6	724,222.0	967,427.1	136,023.9	165,701.9	29,678.0
2012 Jul*	**374,628.2**	**446,524.8**	**72,204.7**	**756,349.4**	**994,547.4**	**162,882.1**	**165,254.8**	**2,372.8**
2012 Aug*	381,017.0	455,290.8	74,233.8	746,922.0	982,802.8	144,734.0	165,258.5	20,522.5
2012 Sep*	378,783.6	452,589.2	73,806.6	752,079.0	997,715.2	148,241.6	165,258.5	25,017.0
2012 Oct*	366,004.1	437,181.3	71,157.2	800,729.9	1,023,268.8	142,599.2	165,286.1	22,686.9

* Including the consolidated balance sheet of ADB/N (beginning 2006 July)

** Including the consolidated balance sheet of 'B' and 'C' class Financial Institutions since July 2011

Note:

1. NBL wrote off Rs. 11.05 billion in July 2006 and Rs. 2.87 billion in mid-October 2006; and RBB wrote off Rs. 13.15 billion in mid-December, 2006. This write off lowered the volume of private sector credit, total domestic credit and other items, net (because of reduction of loan loss provisioning and interest suspense account).
2. Claims on government also includes IMF promissory notes and government issued coins.

Appendix E (contd)

Monetary Survey (Million Rupees)

Claims on Government Enterprises			Claims on Non-Govt. Financial Institutions	Claims on Private Sector	Capital and Other Items, Net	Broad Money (M2) (16+19)	Money Supply (M1) (17+18)	Currency	Demand Deposits	Time Deposits
Total (10+11)	Financial	Non-financial								
9	10	11	12	13	14	15	16	17	18	19
0.0	0.0	0.0	0.0	32.3	0.3	200.6	174.1	109.5	64.6	26.5
0.0	0.0	0.0	0.0	46.0	6.2	235.6	205.4	142.0	63.4	30.2
0.0	0.0	0.0	0.0	57.7	1.6	279.7	244.2	156.2	88.0	35.5
0.0	0.0	0.0	0.0	62.2	7.6	304.1	264.8	161.7	103.1	39.3
2.0	2.0	0.0	0.0	89.8	26.9	405.3	365.7	235.3	130.4	39.6
14.3	1.4	12.9	0.0	110.5	32.9	489.7	446.3	296.3	150.0	43.4
36.9	4.5	32.4	0.0	156.6	34.0	570.7	521.5	345.8	175.7	49.2
38.0	3.8	34.2	0.0	136.2	52.9	641.4	568.3	368.6	199.7	73.1
35.0	9.8	25.2	0.0	194.2	73.8	727.1	618.8	419.1	199.7	108.3
39.5	13.7	25.8	0.0	194.3	69.3	857.2	700.4	470.2	230.2	156.8
39.1	18.6	20.5	0.0	258.9	128.7	975.3	763.3	531.4	231.9	212.0
37.3	20.8	16.5	0.0	320.8	188.3	1,072.1	793.4	576.1	217.3	278.7
41.8	41.0	0.8	0.0	400.3	279.1	1,261.8	857.7	601.2	256.5	404.1
96.1	63.1	33.0	0.0	459.0	451.1	1,529.2	1,015.8	694.7	321.1	513.4
128.6	48.7	79.9	0.0	701.7	510.7	1,911.0	1,281.1	878.6	402.5	629.9
568.7	137.1	431.6	0.0	783.4	602.5	2,064.4	1,337.7	916.5	421.2	726.7
567.3	115.0	452.3	0.0	716.2	814.3	2,524.0	1,452.5	963.5	489.0	1,071.5
511.0	177.5	333.5	0.0	864.2	777.2	3,223.0	1,852.9	1,193.2	659.7	1,370.1
868.7	292.4	576.3	0.0	1,071.1	916.5	3,772.1	2,060.6	1,351.9	708.7	1,711.5
1,079.9	401.9	678.0	0.0	1,331.6	1,317.4	4,511.4	2,504.9	1,615.2	889.7	2,006.5
1,131.0	429.4	701.6	0.0	1,916.5	1,252.4	5,285.3	2,830.4	1,799.3	1,031.1	2,454.9
1,480.6	454.2	946.4	0.0	2,498.1	1,268.2	6,307.7	3,207.8	2,065.7	1,142.1	3,099.9
1,343.4	503.6	839.8	0.0	2,638.2	1,682.5	7,458.0	3,611.5	2,436.7	1,174.8	3,846.5
1,702.2	565.3	1,136.9	0.0	2,699.1	1,879.9	9,222.4	4,348.9	2,752.0	1,596.9	4,873.5
1,621.8	668.4	953.4	0.0	3,174.0	1,909.1	10,455.2	4,931.5	3,273.4	1,658.1	5,523.7
2,022.2	858.8	1,163.4	0.0	4,036.6	2,151.9	12,296.6	5,480.0	3,737.3	1,742.7	6,816.6
2,659.3	933.7	1,725.6	0.0	5,167.9	2,763.9	15,159.0	7,029.3	4,842.9	2,186.4	8,129.7
2,958.3	1,102.3	1,856.0	0.0	6,132.5	3,364.8	17,498.2	8,120.2	5,746.1	2,374.1	9,378.0
3,263.2	1,297.0	1,966.2	0.0	7,947.1	4,620.3	21,422.6	9,596.6	6,374.6	3,222.0	11,826.0
3,882.2	1,714.3	2,167.9	0.0	10,357.0	6,182.7	26,605.1	11,775.4	7,946.6	3,828.8	14,829.7
4,033.8	2,005.4	2,028.4	0.0	11,687.6	7,448.1	31,552.4	14,223.0	9,718.2	4,504.8	17,329.4
3,561.3	2,225.4	1,335.9	0.0	14,108.7	12,930.6	37,712.5	16,283.6	11,654.5	4,629.1	21,428.9
4,827.3	2,788.0	2,039.3	0.0	17,780.2	16,731.0	45,670.5	19,457.7	13,639.7	5,818.0	26,212.8
4,749.8	3,291.7	1,458.1	0.0	21,208.9	20,207.4	58,322.5	23,833.0	16,313.0	7,520.0	34,489.5
4,739.2	3,227.2	1,512.0	0.0	29,606.9	24,269.1	69,777.1	28,510.4	19,659.7	8,850.7	41,266.7
5,050.4	3,821.5	1,228.9	0.0	41,943.1	28,285.5	80,984.7	32,985.4	22,493.9	10,491.5	47,999.3
6,209.3	4,251.0	1,958.3	0.0	55,524.7	34,317.1	92,652.2	36,498.0	25,046.4	11,451.6	56,154.2
7,028.6	5,431.6	1,597.0	0.0	64,658.7	37,387.2	103,720.6	38,460.3	27,333.7	11,126.6	65,260.3
7,228.9	6,170.4	1,058.5	0.0	76,830.1	44,922.3	126,462.6	45,163.8	30,893.2	14,270.6	81,298.8
9,114.0	7,547.3	1,566.7	0.0	90,800.5	47,080.1	152,800.2	51,062.5	34,984.3	16,078.1	101,737.7
10,310.9	8,502.8	1,808.1	0.0	109,447.6	52,347.8	186,120.8	60,979.7	42,143.0	18,836.8	125,141.1
11,986.4	9,683.4	2,223.0	0.0	126,757.9	61,199.3	214,454.2	70,577.0	48,295.1	22,281.8	143,877.2
14,431.1	11,355.1	3,076.0	0.0	133,315.3	71,753.8	223,988.3	77,156.2	55,658.3	21,497.6	146,832.1
14,661.9	11,828.7	2,833.2	0.0	150,956.9	73,939.6	245,911.2	83,754.1	56,885.2	26,868.9	162,157.1
16,258.8	13,343.9	2,914.9	0.0	172,517.4	82,584.5	277,310.1	93,973.7	63,218.9	30,750.7	183,336.4
19,329.0	12,762.8	6,566.2	0.0	197,016.9	92,459.6	300,440.0	100,205.8	68,784.1	31,421.6	200,234.2
17,180.7	12,719.8	4,460.9	0.0	214,321.3	99,037.9	347,421.8	114,388.8	77,926.3	36,462.3	233,033.0
6,369.2	1,808.3	4,560.9	1,773.6	243,570.4	120,249.5	346,824.1	113,060.8	77,780.4	35,280.3	233,763.3
6,827.8	1,713.0	5,114.9	1,909.3	273,477.4	101,616.4	395,518.2	126,888.0	83,553.3	43,334.4	268,630.2
7,317.0	1,670.5	5,646.5	3,039.1	339,834.2	118,360.6	495,377.1	154,343.9	100,175.2	54,168.7	341,033.2
6,468.5	1,376.1	5,092.4	5,985.0	438,354.4	154,711.8	630,521.2	196,459.4	125,758.5	70,700.8	434,061.8
7,958.6	2,515.4	5,443.1	9,244.5	500,650.6	148,103.7	719,599.1	218,159.0	142,114.5	76,044.8	501,440.1
10,786.9	4,279.8	6,507.1	6,679.1	559,011.3	163,298.6	788,281.4	228,058.7	145,576.6	82,481.5	560,222.7
11,774.7	5,427.0	6,347.7	10,039.9	727,322.4	206,686.4	922,043.4	223,074.6	141,931.5	81,143.1	698,968.8
12,363.4	5,394.4	6,969.0	8,730.0	727,031.2	207,193.1	920,191.7	215,551.1	137,953.1	77,598.0	704,640.6
12,372.3	4,508.6	7,863.8	9,393.2	733,782.7	213,565.6	937,117.2	217,107.8	140,563.7	76,544.1	720,009.4
11,816.4	3,905.2	7,911.3	10,489.3	737,288.8	207,470.5	976,855.5	234,197.1	156,555.3	77,641.8	742,658.4
12,198.8	3,500.0	8,698.8	9,886.4	739,138.6	213,052.6	987,153.2	229,239.7	154,317.4	74,921.3	757,913.5
12,112.9	3,480.0	8,632.9	9,694.1	750,503.7	231,551.1	1,002,949.4	227,529.5	155,563.8	71,964.6	775,419.9
12,151.4	3,249.7	8,901.7	10,417.1	763,276.7	208,733.7	1,016,066.9	228,842.8	152,808.0	76,033.8	787,224.1
11,710.0	3,253.5	8,456.6	11,011.0	769,579.9	207,213.4	1,029,149.7	237,268.1	157,232.1	80,037.1	791,881.7
11,568.2	3,073.3	8,492.9	10,935.5	778,824.0	217,736.5	1,034,289.7	237,826.2	160,380.0	77,046.2	796,863.5
10,324.4	2,127.8	8,196.7	8,889.2	790,357.6	220,304.2	1,046,402.0	239,662.9	160,599.6	79,063.3	806,739.2
10,316.0	2,017.1	8,299.0	7,975.5	800,032.0	229,844.4	1,061,671.2	244,344.3	163,604.2	80,740.3	817,326.7
11,221.8	2,016.7	9,205.1	8,833.1	811,348.4	243,205.2	1,087,284.8	246,724.1	166,115.5	80,608.8	840,560.7
12,060.1	1,989.5	10,070.6	9,779.4	809,825.8	238,198.0	1,130,969.6	264,373.0	170,491.7	93,881.3	866,596.6
12,871.0	1,946.3	10,924.7	11,205.0	813,990.9	235,880.8	1,127,939.0	252,679.0	165,422.0	87,257.0	875,260.0
13,907.7	1,941.2	11,966.4	9,867.0	833,699.0	245,636.2	1,130,861.6	249,615.9	165,050.1	84,565.8	881,245.7
13,384.0	1,802.3	11,581.7	10,444.8	856,840.6	272,538.8	1,166,734.0	269,791.9	182,114.4	87,677.4	896,942.1

Appendix A

National Consumer Price Index (Base Year : 2005/06 =100)

Fiscal Year	Overall Index	Food and Beverages	Non-Food and Services
1972/73	6.4	6.5	6.4
1973/74	7.6	8.0	7.0
1974/75	8.9	9.2	8.3
1975/76	8.8	8.9	8.9
1976/77	9.0	8.8	9.6
1977/78	10.1	10.2	9.9
1978/79	10.4	10.4	10.7
1979/80	11.4	11.5	11.5
1980/81	12.9	13.1	13.1
1981/82	14.3	14.5	14.3
1982/83	16.3	16.8	15.8
1983/84	17.3	17.8	17.2
1984/85	18.1	18.0	18.9
1985/86	20.9	21.3	20.9
1986/87	23.7	24.5	22.9
1987/88	26.3	27.5	25.0
1988/89	28.4	29.1	28.2
1989/90	31.2	32.3	30.4
1990/91	34.3	35.5	33.2
1991/92	41.5	44.2	38.2
1992/93	45.1	47.0	43.3
1993/94	49.2	51.3	47.2
1994/95	52.9	55.0	51.0
1995/96	57.3	60.0	54.4
1996/97	61.9	64.9	58.7
1997/98	67.0	69.9	64.0
1998/99	74.7	83.2	67.8
1999/00	77.2	83.6	72.5
2000/01	79.1	79.8	78.4
2001/02	83.4	82.7	80.1
2002/03	85.2	86.4	84.0
2003/04	88.6	89.2	88.0
2004/05	92.6	92.8	92.5
2005/06	100.0	100.0	100.0

Appendix A(contd)

National Consumer Price Index (Base Year : 2005/06 = 100)

Fiscal year Quarter/ Month	Overall Index	Food and Beverages	Cereals Grains & Their Products	Legume Varieties	Vegetables	Meat & Fish	Milk Products and Egg	Ghee and Oil	Fruits	Sugar & Sweets	Spices	Soft Drinks
2006/07	**105.9**	**107.0**	**106.3**	**117.3**	**111.5**	**106.6**	**107.7**	**106.5**	**106.1**	**92.8**	**117.8**	**103.7**
2007/08	**113.0**	**117.0**	**121.7**	**133.2**	**119.9**	**115.0**	**116.1**	**128.8**	**110.6**	**83.5**	**122.6**	**107.8**
2008/09	**127.2**	**137.3**	**139.6**	**165.7**	**133.6**	**141.8**	**133.1**	**150.0**	**128.4**	**122.2**	**137.4**	**128.6**
2009/10	**139.4**	**158.1**	**153.7**	**208.8**	**160.7**	**171.5**	**149.0**	**143.1**	**154.7**	**177.6**	**175.1**	**152.6**
I Qtr	**137.2**	**156.7**	**148.3**	**203.9**	**192.8**	**164.0**	**140.3**	**143.3**	**168.6**	**155.7**	**154.5**	**149.7**
Jul/Aug	136.0	153.9	145.7	203.7	184.5	162.3	136.6	142.4	176.4	146.1	151.9	148.0
Aug/Sep	137.4	157.3	149.5	204.1	193.7	164.2	140.6	143.9	167.8	159.9	155.2	149.7
Sep/Oct	138.1	158.7	149.7	203.9	200.0	165.6	143.9	143.6	161.7	161.2	156.5	151.3
II Qtr	**138.5**	**157.9**	**151.6**	**218.8**	**176.1**	**165.6**	**145.8**	**142.8**	**140.8**	**180.3**	**169.0**	**150.9**
Oct/Nov	139.0	159.8	151.1	213.2	203.4	163.5	144.9	143.1	146.0	168.7	162.0	150.7
Nov/Dec	138.5	157.7	151.7	221.2	176.6	164.6	145.2	142.3	138.0	173.9	170.3	150.9
Dec/Jan	138.1	156.1	152.1	222.0	148.4	168.5	147.4	142.9	138.3	198.3	174.6	151.1
III Qtr	**139.1**	**156.0**	**155.1**	**210.9**	**127.3**	**176.4**	**152.3**	**144.1**	**143.7**	**200.9**	**179.2**	**152.4**
Jan/Feb	139.0	156.1	154.6	221.1	131.4	170.3	151.9	144.3	141.0	213.4	179.5	151.4
Feb/Mar	138.6	155.0	155.0	210.4	120.3	178.0	152.3	144.8	140.9	203.2	179.3	152.0
Mar/Apr	139.6	156.8	155.8	201.3	130.1	180.9	152.6	143.1	149.2	186.2	178.9	153.9
IV Qtr	**142.8**	**162.0**	**159.5**	**201.6**	**146.7**	**179.9**	**157.6**	**142.3**	**165.7**	**173.3**	**197.4**	**157.3**
Apr/May	141.3	158.7	156.0	199.1	137.4	181.0	152.9	142.3	163.5	175.3	182.9	156.5
May/Jun	142.4	161.2	159.1	202.2	142.3	178.1	157.2	142.4	167.7	173.2	198.1	157.5
Jun/Jul	144.7	166.1	163.5	203.5	160.4	180.4	162.6	142.1	165.8	171.4	211.3	157.9
2010/11	**152.7**	**181.5**	**175.1**	**193.0**	**217.0**	**186.3**	**170.7**	**146.7**	**184.7**	**212.3**	**215.7**	**168.5**
I Qtr	**149.4**	**176.4**	**174.5**	**198.5**	**198.0**	**180.3**	**161.6**	**142.4**	**169.2**	**197.5**	**216.6**	**173.5**
Jul/Aug	148.9	173.3	173.7	204.1	178.2	173.7	155.5	141.6	174.4	176.3	203.3	184.3
Aug/Sep	149.2	176.5	174.5	196.9	196.5	181.9	164.1	142.9	165.6	208.7	225.6	169.0
Sep/Oct	150.2	179.3	175.3	194.5	219.4	185.3	165.3	142.6	167.7	207.4	220.9	167.3
II Qtr	**152.0**	**182.0**	**175.1**	**192.5**	**240.0**	**183.7**	**167.0**	**143.3**	**170.6**	**219.4**	**216.0**	**166.0**
Oct/Nov	150.7	181.0	174.4	192.2	235.7	184.7	165.6	143.6	167.0	217.3	218.4	166.9
Nov/Dec	151.6	181.6	175.3	193.0	235.9	181.8	167.3	143.0	169.7	219.6	215.6	167.2
Dec/Jan	153.6	183.5	175.6	192.2	248.4	184.5	168.0	143.2	173.2	221.4	214.1	164.0
III Qtr	**153.6**	**182.5**	**175.3**	**192.3**	**215.1**	**191.3**	**171.2**	**148.6**	**187.6**	**218.7**	**217.0**	**165.8**
Jan/Feb	153.0	182.0	173.4	191.4	227.4	189.7	167.9	145.6	177.8	223.1	215.3	164.9
Feb/Mar	153.3	181.8	175.8	193.4	208.4	191.8	168.3	149.4	187.9	217.5	219.0	165.5
Mar/Apr	154.4	183.8	176.8	192.1	209.6	192.5	177.5	150.8	197.2	215.6	216.7	167.0
IV Qtr	**156.0**	**184.8**	**175.3**	**188.6**	**215.0**	**189.7**	**183.1**	**152.5**	**211.5**	**213.7**	**213.0**	**168.5**
Apr/May	154.5	184.0	177.1	189.9	203.7	191.5	180.6	150.5	209.8	214.2	217.0	167.4
May/Jun	154.8	184.2	175.6	189.1	208.6	187.9	183.9	152.3	214.9	213.7	211.7	168.2
Jun/Jul	158.6	186.3	173.2	186.7	232.7	189.8	184.9	154.6	209.7	213.2	210.3	170.0
2011/12	**167.5**	**198.1**	**178.0**	**197.8**	**280.1**	**201.6**	**195.2**	**169.9**	**216.9**	**239.1**	**198.5**	**179.0**
I Qtr	**161.9**	**193.8**	**175.9**	**188.3**	**289.5**	**193.0**	**186.4**	**156.9**	**223.1**	**220.3**	**202.3**	**171.9**
Jul/Aug	160.3	190.4	173.8	187.2	262.8	192.5	186.3	155.4	221.7	215.9	203.9	170.8
Aug/Sep	161.9	194.3	175.6	188.7	293.0	193.1	186.2	157.5	229.2	220.7	202.0	170.7
Sep/Oct	163.6	196.8	178.4	189.1	312.7	193.4	186.7	157.7	218.3	224.2	201.0	174.3
II Qtr	**163.5**	**193.8**	**178.0**	**193.2**	**273.8**	**193.2**	**188.9**	**161.6**	**204.1**	**236.6**	**197.2**	**174.5**
Oct/Nov	163.4	196.2	178.2	191.5	305.4	193.8	188.5	158.4	207.5	228.9	198.7	174.2
Nov/Dec	163.0	194.4	178.9	193.6	280.2	192.1	189.0	160.8	203.6	236.6	197.6	174.3
Dec/Jan	164.0	190.9	176.8	194.5	235.8	193.8	189.1	165.6	201.2	244.4	195.4	175.0
III Qtr	**164.6**	**190.4**	**171.5**	**190.5**	**225.1**	**203.1**	**198.3**	**170.4**	**207.0**	**231.6**	**192.0**	**176.7**
Jan/Feb	163.8	189.4	171.6	191.0	223.8	198.4	197.4	167.7	202.8	233.4	193.4	175.4
Feb/Mar	164.1	189.5	171.5	190.0	219.1	202.9	197.7	169.2	206.3	230.3	192.5	175.5
Mar/Apr	166.0	192.3	171.5	190.2	232.5	207.9	199.8	174.3	211.9	231.1	190.0	179.3
IV Qtr	**171.7**	**202.7**	**177.2**	**199.6**	**289.9**	**211.8**	**202.1**	**182.6**	**229.8**	**239.2**	**192.4**	**180.8**
Apr/May	168.0	197.1	173.7	192.4	260.4	211.0	200.6	179.4	217.8	234.5	190.5	179.6
May/Jun	170.2	202.5	177.3	200.7	289.0	212.3	201.6	183.8	231.0	240.4	189.8	180.1
Jun/Jul	176.8	208.4	180.6	205.6	320.2	212.2	204.2	184.7	240.6	242.8	197.0	182.6
2012/13												
I Qtr	**180.1**	**214.3**	**186.7**	**219.3**	**331.8**	**217.0**	**207.1**	**190.6**	**233.5**	**267.9**	**202.3**	**192.6**
Jul/Aug	179.3	213.6	183.9	214.8	342.7	214.6	206.1	188.1	244.4	258.8	202.5	191.5
Aug/Sep	180.1	214.5	188.3	222.7	321.9	217.3	206.7	191.3	233.7	272.4	202.1	192.3
Sep/Oct	180.8	214.8	187.9	220.3	330.8	219.1	208.4	192.3	222.3	272.4	202.4	194.1

Appendix A (contd)

National Consumer Price Index (Base Year : 2005/06 =100)

Hard Drinks	Tobacco Products	Restaurant & Hotel	Non-Food & Services	Clothing & Footware	Housing & Utilities	Furnishing & Household Equipment	Health	Transport	Commu-nication	Recreation & Culture	Education	Miscellaneous Goods & Services
104.6	**106.7**	**103.3**	**104.9**	**103.5**	**105.6**	**106.7**	**102.8**	**108.7**	**100.0**	**102.8**	**107.0**	**101.7**
106.8	**116.1**	**110.6**	**109.2**	**107.0**	**111.7**	**112.9**	**108.6**	**111.2**	**100.0**	**107.2**	**112.1**	**103.6**
119.1	**135.2**	**136.5**	**119.0**	**116.0**	**121.0**	**127.8**	**114.0**	**129.7**	**100.1**	**114.6**	**121.5**	**116.0**
133.5	**152.1**	**164.2**	**124.8**	**124.8**	**124.9**	**135.7**	**117.8**	**123.6**	**100.1**	**123.0**	**135.3**	**124.7**
125.6	**148.3**	**155.1**	**122.1**	**121.3**	**119.4**	**131.8**	**116.5**	**121.9**	**100.1**	**121.4**	**134.6**	**121.3**
125.6	148.3	151.6	122.0	121.0	119.3	131.7	116.5	121.9	100.1	120.9	134.6	121.3
125.6	148.3	153.9	122.1	121.3	119.3	131.7	116.5	121.9	100.1	121.4	134.6	121.3
125.6	148.3	159.7	122.2	121.7	119.4	131.9	116.5	121.9	100.1	121.8	134.6	121.3
135.7	**150.9**	**161.9**	**123.5**	**123.9**	**121.8**	**134.7**	**117.8**	**122.2**	**100.1**	**122.3**	**134.6**	**122.3**
135.7	150.9	160.6	123.0	123.7	119.7	134.5	117.8	122.2	100.1	122.3	134.6	122.3
135.7	150.9	161.7	123.6	123.9	122.2	134.7	117.8	122.2	100.1	122.3	134.6	122.3
135.7	150.9	163.3	123.9	124.2	123.5	134.7	117.8	122.2	100.1	122.4	134.6	122.3
136.1	**153.3**	**167.0**	**125.8**	**125.5**	**127.2**	**135.7**	**117.8**	**124.4**	**100.1**	**123.9**	**136.0**	**126.2**
136.1	153.3	166.2	125.5	125.2	126.0	135.8	117.8	124.4	100.1	123.7	136.0	126.2
136.1	153.3	166.9	125.7	125.4	127.1	135.6	117.8	124.4	100.1	123.9	136.0	126.2
136.1	153.3	168.0	126.1	125.9	128.7	135.8	117.8	124.4	100.1	124.0	136.0	126.2
136.8	**155.7**	**172.9**	**127.8**	**128.3**	**131.3**	**140.5**	**119.1**	**125.8**	**100.1**	**124.5**	**136.0**	**128.9**
136.8	155.7	171.9	127.5	127.5	130.6	140.6	119.1	125.8	100.1	124.4	136.0	128.9
136.8	155.7	173.0	127.7	128.3	130.7	140.4	119.1	125.8	100.1	124.5	136.0	128.9
136.8	155.7	173.7	128.2	129.0	132.7	140.6	119.1	125.8	100.1	124.6	136.0	128.9
142.1	**172.7**	**189.7**	**131.6**	**141.4**	**134.1**	**143.4**	**122.7**	**136.1**	**89.5**	**120.1**	**142.7**	**132.1**
145.6	**162.3**	**179.6**	**129.5**	**134.8**	**133.3**	**137.0**	**125.9**	**130.9**	**92.7**	**118.7**	**139.3**	**128.5**
145.1	160.6	173.8	130.5	134.5	136.8	134.9	129.4	129.0	93.8	121.8	133.2	128.0
145.9	163.2	181.4	129.0	133.9	131.4	137.4	127.4	131.9	93.8	116.9	142.4	128.7
145.9	163.2	183.5	128.9	135.9	131.8	138.6	121.0	131.9	90.5	117.3	142.4	128.7
143.6	**168.6**	**189.2**	**130.0**	**138.2**	**132.9**	**140.8**	**121.1**	**133.5**	**90.2**	**118.5**	**142.4**	**130.3**
145.9	163.2	185.0	128.6	136.0	128.6	138.8	121.0	131.8	90.5	118.9	142.4	129.1
145.9	163.2	191.3	129.8	136.0	134.7	138.5	121.0	132.9	90.5	118.4	142.4	130.0
139.0	179.5	191.3	131.6	142.6	133.4	145.2	121.2	135.8	89.7	118.3	142.4	131.9
139.0	**179.5**	**192.9**	**132.3**	**144.1**	**134.8**	**145.9**	**121.2**	**137.6**	**88.8**	**120.6**	**142.4**	**132.8**
139.0	179.5	192.1	131.7	142.6	135.2	145.1	121.2	135.8	89.7	119.0	142.4	132.1
139.0	179.5	193.0	132.4	142.6	135.2	145.6	121.2	138.5	89.7	121.4	142.4	133.0
139.0	179.5	193.7	132.8	147.2	133.9	147.1	121.2	138.5	87.1	121.5	142.4	133.4
140.2	**180.3**	**196.9**	**134.7**	**148.6**	**135.5**	**149.8**	**122.5**	**142.2**	**86.1**	**122.5**	**146.6**	**136.9**
139.0	179.5	195.1	132.9	147.2	134.2	147.5	121.7	138.5	87.3	121.8	142.4	134.0
139.0	179.5	197.0	133.2	147.2	134.3	148.1	121.7	139.6	87.3	122.0	142.4	136.6
142.6	181.8	198.7	138.0	151.3	137.9	153.9	124.2	148.6	83.8	123.8	155.0	140.2
150.0	**194.5**	**213.9**	**144.9**	**163.5**	**144.2**	**164.5**	**128.9**	**158.8**	**82.1**	**130.6**	**159.9**	**146.5**
142.6	**181.8**	**203.5**	**138.6**	**153.1**	**138.2**	**155.1**	**124.6**	**148.9**	**83.4**	**125.0**	**155.0**	**141.2**
142.6	181.8	201.7	138.1	151.3	137.7	154.3	124.2	148.6	83.8	124.8	155.0	140.7
142.6	181.8	203.3	138.3	151.3	138.3	154.5	124.2	148.6	83.8	124.7	155.0	141.3
142.6	181.8	205.4	139.4	156.7	138.7	156.4	125.5	149.4	82.6	125.5	155.0	141.5
145.7	**186.4**	**208.6**	**141.0**	**159.2**	**139.5**	**159.6**	**126.7**	**152.7**	**82.5**	**127.5**	**155.0**	**142.9**
142.6	181.8	207.7	139.6	156.7	138.9	156.8	125.5	149.5	82.6	125.7	155.0	141.8
142.6	181.8	208.9	139.9	156.7	139.4	157.5	125.5	149.5	82.6	126.8	155.0	142.6
151.8	195.6	209.1	143.5	164.3	140.1	164.4	129.0	159.1	82.4	130.1	155.0	144.3
151.8	**195.6**	**215.1**	**145.1**	**166.0**	**143.7**	**165.7**	**129.7**	**162.0**	**82.0**	**131.9**	**155.0**	**146.4**
151.8	195.6	212.2	144.4	164.3	142.9	164.8	129.0	160.9	82.4	130.9	155.0	145.4
151.8	195.6	215.0	144.9	164.3	143.7	165.1	129.0	162.0	82.4	132.2	155.0	146.1
151.8	195.6	218.0	146.1	169.3	144.6	167.2	131.1	163.2	81.1	132.6	155.0	147.8
154.5	**201.8**	**221.9**	**148.7**	**170.9**	**147.8**	**170.1**	**132.1**	**165.8**	**80.9**	**133.3**	**161.5**	**150.3**
151.8	195.6	220.7	146.3	169.3	144.7	167.8	131.1	163.4	81.1	132.8	155.0	149.1
151.8	195.6	221.1	146.4	169.3	145.0	168.2	131.1	163.4	81.1	132.8	155.0	149.9
159.9	214.3	223.9	153.4	174.2	153.7	174.2	134.2	170.5	80.5	134.4	174.5	152.0
159.9	**214.3**	**228.6**	**154.9**	**175.6**	**155.4**	**177.7**	**134.7**	**171.5**	**80.4**	**137.9**	**174.5**	**155.5**
159.9	214.3	227.0	154.1	174.2	153.9	176.1	134.2	170.6	80.5	137.7	174.5	154.6
159.9	214.3	228.1	154.8	174.2	156.1	177.1	134.2	171.9	80.5	137.8	174.5	155.2
159.9	214.3	230.8	155.9	178.5	156.1	179.9	135.7	172.0	80.3	138.2	174.5	156.7

Appendix F
Receipts and Expenditures of Convertible Foreign Exchange (Million Rupees)

Fiscal Year Quarter/ Month	Receipts									
	Invisibles (2+3+4)	Remittances	Tourist Income	Interest Receipts	Merchandise Exports (6+7)	Export Under Clearing A/C Arrangements	Other Exports	Diplomatic Missions	Foreign Aid	Miscellaneous
	1	2	3	4	5	6	7	8	9	10
1974/75	**299.1**	**90.7**	**120.7**	**87.7**	**151.4**	**31.9**	**119.5**	**22.4**	**26.5**	**65.3**
1975/76	**353.6**	**97.7**	**189.0**	**66.9**	**296.9**	**102.3**	**194.6**	**27.9**	**132.1**	**49.4**
1976/77	**447.8**	**125.4**	**244.1**	**78.3**	**385.7**	**64.6**	**321.1**	**54.2**	**161.0**	**46.8**
1977/78	**570.5**	**120.0**	**342.5**	**108.0**	**557.6**	**50.0**	**507.6**	**104.8**	**211.2**	**18.4**
1978/79	**645.5**	**146.3**	**406.8**	**92.4**	**517.9**	**22.8**	**495.1**	**105.0**	**542.2**	**37.5**
1979/80	**811.2**	**150.3**	**518.7**	**142.2**	**717.8**	**74.1**	**643.7**	**159.2**	**623.5**	**59.4**
1980/81	**1,010.3**	**216.8**	**616.8**	**176.7**	**642.0**	**69.6**	**572.4**	**263.7**	**622.8**	**122.3**
1981/82	**926.0**	**205.5**	**493.8**	**226.7**	**513.5**	**26.3**	**487.2**	**196.6**	**563.3**	**89.2**
1982/83	**944.7**	**292.5**	**491.1**	**161.1**	**305.0**	**17.3**	**287.7**	**128.6**	**798.6**	**84.3**
1983/84	**951.3**	**280.0**	**585.8**	**85.5**	**427.0**	**3.2**	**423.8**	**229.4**	**1,150.6**	**88.5**
1984/85	**1,121.5**	**275.4**	**724.9**	**121.2**	**916.7**	**0.0**	**916.7**	**157.4**	**1,402.4**	**122.7**
1985/86	**1,286.7**	**346.7**	**863.6**	**76.4**	**2,072.3**	**0.0**	**2,072.3**	**333.3**	**1,814.6**	**282.6**
1986/87	**1,816.4**	**478.7**	**1,208.1**	**129.6**	**1,624.2**	**0.0**	**1,624.2**	**593.5**	**2,150.7**	**355.2**
1987/88	**2,253.1**	**589.8**	**1,415.1**	**248.2**	**2,348.5**	**0.0**	**2,348.5**	**1,223.5**	**2,753.9**	**628.0**
1988/89	**2,879.9**	**602.1**	**1,856.5**	**421.3**	**3,005.2**	**0.0**	**3,005.2**	**1,527.0**	**3,037.1**	**701.6**
1989/90	**2,777.8**	**676.8**	**1,541.7**	**559.3**	**4,240.0**	**0.0**	**4,240.0**	**1,818.6**	**3,645.9**	**880.5**
1990/91	**3,343.2**	**549.7**	**1,993.8**	**799.7**	**5,763.4**	**0.0**	**5,763.4**	**1,830.0**	**3,877.5**	**1,651.8**
1991/92	**4,675.1**	**423.6**	**3,090.7**	**1,160.8**	**10,020.6**	**0.0**	**10,020.6**	**2,903.2**	**3,712.6**	**3,744.5**
1992/93	**4,632.1**	**549.7**	**2,615.1**	**1,467.3**	**10,389.5**	**0.0**	**10,389.5**	**5,805.3**	**5,188.6**	**1,307.9**
1993/94	**6,457.6**	**223.0**	**4,819.7**	**1,414.9**	**16,033.2**	**0.0**	**16,033.2**	**4,707.8**	**4,474.6**	**4,487.6**
1994/95	**10,018.0**	**2,906.7**	**5,506.7**	**1,604.6**	**15,624.5**	**0.0**	**15,624.5**	**5,340.3**	**4,982.8**	**3,184.7**
1995/96	**10,470.6**	**2,660.2**	**6,605.9**	**1,204.5**	**14,719.4**	**0.0**	**14,719.4**	**2,989.0**	**7,943.4**	**1,337.4**
1996/97	**10,417.3**	**2,938.0**	**6,158.8**	**1,320.5**	**15,603.9**	**0.0**	**15,603.9**	**2,362.9**	**8,921.5**	**974.8**
1997/98	**13,615.5**	**4,084.2**	**7,850.9**	**1,680.4**	**16,355.3**	**0.0**	**16,355.3**	**4,374.4**	**9,868.4**	**770.3**
1998/99	**20,119.4**	**6,520.6**	**11,584.2**	**2,014.6**	**18,766.6**	**0.0**	**18,766.6**	**8,327.3**	**8,518.4**	**2,208.1**
1999/00	**20,579.7**	**6,031.4**	**11,691.0**	**2,857.3**	**23,724.4**	**0.0**	**23,724.4**	**6,247.7**	**11,072.4**	**2,625.8**
2000/01	**24,760.6**	**9,797.6**	**11,969.2**	**2,993.8**	**29,789.7**	**0.0**	**29,789.7**	**7,254.4**	**23,459.0**	**4,559.5**
2001/02	**24,648.3**	**14,859.8**	**7,798.4**	**1,990.1**	**18,311.0**	**0.0**	**18,311.0**	**9,663.9**	**18,968.3**	**4,561.8**
2002/03	**54,673.5**	**41,630.0**	**10,369.4**	**2,674.1**	**22,578.9**	**0.0**	**22,578.9**	**4,661.8**	**12,988.0**	**3,779.6**
2003/04	**71,212.6**	**56,629.8**	**12,337.4**	**2,245.4**	**22,489.5**	**0.0**	**22,489.5**	**4,242.1**	**19,822.9**	**2,876.1**
2004/05	**76,884.0**	**61,784.8**	**11,814.9**	**3,284.2**	**20,852.0**	**0.0**	**20,852.0**	**3,505.4**	**20,397.2**	**1,629.9**
2005/06	**109,274.4**	**92,748.6**	**11,710.8**	**4,814.9**	**21,738.5**	**0.0**	**21,738.5**	**5,281.5**	**17,117.7**	**3,885.1**
2006/07	**126,935.8**	**107,417.4**	**12,645.8**	**6,872.6**	**22,366.8**	**0.0**	**22,366.8**	**7,794.0**	**16,622.2**	**6,248.5**
2007/08	**166,793.3**	**139,421.5**	**20,339.9**	**7,032.0**	**28,663.2**	**0.0**	**28,663.2**	**10,726.3**	**23,642.4**	**7,101.9**
2008/09	**234,454.9**	**194,215.6**	**34,589.8**	**5,649.5**	**40,496.5**	**0.0**	**40,496.5**	**13,188.2**	**28,197.9**	**8,054.5**
2009/10	**248,801.2**	**213,998.9**	**29,385.9**	**5,416.4**	**44,395.5**	**0.0**	**44,395.5**	**5,391.2**	**32,983.9**	**14,799.0**
2010/11	**273,214.5**	**232,963.2**	**31,002.4**	**9,248.9**	**38,450.6**	**0.0**	**38,450.6**	**4,093.9**	**33,705.0**	**26,135.6**
2011/12[R]	**386,284.5**	**343,636.1**	**39,394.5**	**3,253.9**	**46,452.6**	**0.0**	**46,452.6**	**6,955.6**	**47,895.3**	**34,950.7**
I Qtr	**84,509.5**	**74,805.9**	**9,336.7**	**366.9**	**10,224.9**	**0.0**	**10,224.9**	**1,021.7**	**5,441.9**	**10,863.1**
Jul/Aug	23,262.6	20,751.7	2,435.0	75.9	3,233.1	0.0	3,233.1	278.8	1,772.5	3,857.8
Aug/Sep	27,258.2	24,402.9	2,692.8	162.5	3,378.6	0.0	3,378.6	310.2	884.1	3,777.0
Sep/Oct	33,988.7	29,651.3	4,208.9	128.5	3,613.2	0.0	3,613.2	432.7	2,785.3	2,428.3
II Qtr	**96,392.5**	**82,242.5**	**12,219.1**	**1,930.9**	**10,930.0**	**0.0**	**10,930.0**	**1,515.2**	**13,839.4**	**7,585.0**
Oct/Nov	31,704.0	26,131.6	5,307.1	265.3	3,798.9	0.0	3,798.9	394.1	6,300.9	1,936.1
Nov/Dec	30,214.9	26,291.4	3,753.8	169.7	3,661.1	0.0	3,661.1	403.9	4,233.0	3,230.5
Dec/Jan	34,473.6	29,819.5	3,158.2	1,496.0	3,470.0	0.0	3,470.0	717.2	3,305.5	2,418.4
III Qtr	**91,143.5**	**81,853.6**	**8,885.4**	**404.5**	**11,372.3**	**0.0**	**11,372.3**	**1,612.4**	**12,747.1**	**7,165.4**
Jan/Feb	27,577.3	24,764.7	2,477.1	335.5	3,465.8	0.0	3,465.8	464.2	3,449.1	1,818.2
Feb/Mar	30,199.2	27,421.0	2,744.1	34.1	3,761.0	0.0	3,761.0	462.7	2,791.2	1,914.2
Mar/Apr	33,367.1	29,668.0	3,664.1	34.9	4,145.5	0.0	4,145.5	685.5	6,506.8	3,433.0
IV Qtr	**114,239.0**	**104,734.1**	**8,953.4**	**551.5**	**13,925.4**	**0.0**	**13,925.4**	**2,806.2**	**15,866.9**	**10,137.2**
Apr/May	36,840.9	32,860.4	3,783.1	197.4	4,121.2	0.0	4,121.2	588.2	2,820.6	2,298.3
May/Jun	39,288.5	36,873.3	2,686.2	-271.0	4,858.4	0.0	4,858.4	642.4	5,871.3	3,281.8
Jun/Jul	38,109.6	35,000.5	2,484.1	625.0	4,945.8	0.0	4,945.8	1,575.6	7,175.0	4,557.1
2012/13[P]										
I Qtr										
Jul/Aug										
Aug/Sep										
Sep/Oct										

* On payments basis : data based on foreign exchange records.

Appendix D

Consumer Price Index of Terai (Base Year: 2005/06 =100)

Fiscal Year	Overall Index	Food and Beverages	Non-Food and Services
1972/73	6.7	7.0	6.4
1973/74	8.2	8.9	7.0
1974/75	9.6	10.3	8.4
1975/76	9.0	9.3	8.9
1976/77	9.4	9.5	9.6
1977/78	10.5	10.9	9.9
1978/79	10.8	11.0	10.8
1979/80	11.7	12.0	11.5
1980/81	13.2	13.6	13.0
1981/82	14.7	15.2	14.2
1982/83	16.9	17.6	15.9
1983/84	17.9	18.6	17.4
1984/85	18.5	18.6	19.0
1985/86	21.4	22.1	20.9
1986/87	24.1	25.2	22.8
1987/88	27.0	28.4	25.1
1988/89	29.1	29.8	28.7
1989/90	31.4	32.2	31.2
1990/91	34.5	35.6	33.7
1991/92	41.9	44.9	38.0
1992/93	45.5	48.9	42.8
1993/94	47.8	49.7	46.1
1994/95	51.3	53.4	49.4
1995/96	56.2	59.0	53.2
1996/97	60.8	63.9	57.4
1997/98	66.3	68.9	63.4
1998/99	75.1	81.8	67.7
1999/00	77.4	81.5	72.9
2000/01	78.2	77.9	78.6
2001/02	80.9	81.4	89.6
2002/03	85.5	86.3	84.7
2003/04	88.2	88.0	88.5
2004/05	92.1	91.4	92.8
2005/06	100.0	100.0	100.0

Appendix D (contd)

Consumer Price Index of Terai (Base Year: 2005/06 = 100)

Fiscal year Quarter/ Month	Overall Index	Food and Beverages	Cereals Grains & Their Products	Legume Varieties	Vegetables	Meat & Fish	Milk Products and Egg	Ghee and Oil	Fruits	Sugar & Sweets	Spices	Soft Drinks
2006/07	**105.6**	**107.6**	**106.8**	**115.2**	**115.1**	**106.2**	**106.6**	**107.0**	**105.7**	**92.5**	**115.1**	**108.6**
2007/08	**112.2**	**117.4**	**123.8**	**136.7**	**120.5**	**113.6**	**112.4**	**128.5**	**110.8**	**82.5**	**117.4**	**112.8**
2008/09	**125.9**	**136.4**	**136.8**	**174.1**	**136.6**	**140.6**	**131.1**	**147.8**	**130.1**	**117.5**	**132.5**	**129.0**
2009/10	**137.8**	**157.6**	**155.6**	**217.7**	**161.2**	**166.7**	**147.1**	**142.6**	**154.0**	**175.8**	**169.1**	**153.4**
I Qtr	**135.8**	**157.2**	**150.7**	**218.8**	**195.4**	**159.2**	**139.5**	**143.6**	**174.4**	**155.2**	**149.0**	**148.8**
July/Aug	134.6	154.3	147.6	218.8	185.9	157.2	135.8	142.3	183.1	142.7	146.6	146.7
Aug/Sep	136.1	157.9	153.1	219.3	194.1	158.5	139.0	144.8	172.2	160.9	150.0	148.9
Sep/Oct	136.8	159.3	151.3	218.1	206.1	161.9	143.7	143.7	168.1	162.0	150.4	150.9
II Qtr	**137.0**	**157.9**	**153.8**	**228.9**	**176.2**	**163.6**	**145.9**	**141.9**	**140.8**	**179.9**	**165.7**	**150.8**
Oct/Nov	137.6	160.1	152.9	224.7	205.5	161.9	145.3	142.0	151.4	168.0	156.8	150.7
Nov/Dec	137.2	158.1	153.9	230.3	180.0	162.8	145.3	141.5	136.9	174.6	168.1	150.8
Dec/Jan	136.4	155.4	154.7	231.5	143.1	165.9	147.0	142.0	134.1	197.1	172.1	151.0
III Qtr	**137.6**	**155.4**	**157.8**	**217.2**	**128.2**	**171.0**	**149.3**	**143.1**	**138.1**	**198.8**	**174.0**	**153.0**
Jan/Feb	137.6	155.9	158.1	229.7	130.3	168.3	149.0	143.6	133.4	212.6	175.3	151.6
Feb/Mar	137.4	154.9	157.0	217.2	125.1	171.3	149.2	143.7	137.7	202.3	175.5	152.4
Mar/Apr	137.9	155.5	158.5	204.9	129.4	173.5	149.6	142.1	143.4	181.4	171.1	154.9
IV Qtr	**140.6**	**159.9**	**160.1**	**205.9**	**145.2**	**172.9**	**153.8**	**141.6**	**162.4**	**169.4**	**187.6**	**160.8**
Apr/May	139.2	156.7	157.7	205.4	133.9	172.3	149.8	141.8	160.7	171.8	174.9	160.1
May/Jun	140.2	159.1	159.2	205.5	140.3	172.8	153.7	141.6	164.6	169.9	189.1	160.8
Jun/July	142.4	163.8	163.2	206.9	161.4	173.6	158.1	141.5	162.0	166.4	198.8	161.3
2010/11	**147.7**	**176.8**	**176.6**	**202.3**	**200.6**	**179.3**	**163.0**	**142.9**	**191.8**	**176.8**	**204.6**	**182.4**
I Qtr	**145.0**	**173.1**	**176.5**	**202.8**	**189.1**	**175.7**	**156.9**	**141.4**	**171.0**	**176.2**	**208.2**	**182.4**
July/Aug	145.8	170.8	173.3	204.1	178.2	173.7	155.5	141.6	174.4	176.3	203.3	184.3
Aug/Sep	144.8	172.2	177.1	203.1	183.9	174.7	156.9	141.6	165.6	176.7	206.2	182.6
Sep/Oct	144.4	176.2	179.0	201.1	205.1	178.8	158.2	141.0	173.1	175.6	215.0	180.4
II Qtr	**146.6**	**178.2**	**179.2**	**203.5**	**220.2**	**177.2**	**159.6**	**140.2**	**181.5**	**178.7**	**207.7**	**181.1**
Oct/Nov	145.2	177.6	179.9	200.2	219.9	177.1	156.9	140.9	177.6	176.3	211.7	180.5
Nov/Dec	146.0	178.3	179.9	205.6	216.8	176.4	160.7	140.1	184.8	178.7	206.4	181.2
Dec/Jan	148.5	178.8	177.8	204.6	223.9	178.2	161.2	139.5	182.2	183.2	204.9	181.7
III Qtr	**148.2**	**176.6**	**175.8**	**204.7**	**191.2**	**182.7**	**163.2**	**143.6**	**195.1**	**177.5**	**203.0**	**182.9**
Jan/Feb	147.5	175.8	174.5	203.9	196.2	181.7	161.2	141.7	184.1	180.2	205.2	183.4
Feb/Mar	148.1	176.0	176.4	206.5	185.2	183.1	160.5	144.0	195.7	176.8	206.1	182.7
Mar/Apr	149.1	177.9	176.4	203.7	192.3	183.2	167.9	145.0	205.6	175.5	197.7	182.7
IV Qtr	**151.0**	**179.4**	**174.9**	**198.4**	**202.0**	**181.5**	**172.3**	**146.6**	**219.5**	**174.9**	**199.6**	**183.3**
Apr/May	148.9	177.1	175.7	199.9	184.2	181.8	169.7	144.2	215.0	174.7	200.7	182.9
May/Jun	149.7	178.5	175.0	198.0	195.3	179.4	173.0	146.2	221.0	174.9	197.4	182.9
Jun/Jul	154.3	182.7	174.0	197.3	226.6	183.2	174.2	149.4	222.6	175.0	200.6	184.0
2011/12	**159.7**	**188.4**	**172.1**	**199.1**	**249.8**	**191.1**	**185.7**	**165.0**	**229.2**	**189.7**	**185.8**	**192.4**
I Qtr	**156.9**	**188.6**	**174.8**	**194.0**	**277.5**	**184.4**	**176.5**	**153.1**	**236.9**	**180.4**	**194.7**	**187.6**
Jul/Aug	155.8	186.5	174.7	194.2	254.0	184.2	176.1	151.1	243.3	177.7	193.1	186.6
Aug/Sep	157.0	189.2	174.7	194.0	283.3	184.5	176.3	153.7	241.4	180.7	193.7	185.1
Sep/Oct	157.8	190.0	174.9	193.8	295.2	184.5	177.0	154.5	226.1	182.9	193.0	191.0
II Qtr	**157.0**	**185.2**	**171.4**	**197.3**	**243.1**	**185.2**	**181.4**	**157.7**	**213.9**	**191.9**	**190.6**	**191.0**
Oct/Nov	157.8	189.8	173.3	195.9	288.3	185.9	181.2	155.7	222.5	185.7	191.4	190.6
Nov/Dec	156.7	186.1	173.7	197.4	245.7	184.9	181.2	156.7	209.7	193.0	190.5	190.8
Dec/Jan	156.6	179.7	167.1	198.5	195.2	184.7	181.8	160.8	209.6	196.9	190.0	191.5
III Qtr	**158.9**	**183.2**	**167.6**	**197.7**	**203.7**	**192.8**	**190.0**	**167.4**	**216.6**	**190.4**	**182.9**	**193.4**
Jan/Feb	157.3	180.4	166.4	198.3	192.1	187.1	188.7	163.4	210.8	191.9	187.1	192.3
Feb/Mar	158.6	182.7	168.3	198.1	199.0	192.6	189.7	166.0	215.5	189.9	184.0	192.2
Mar/Apr	160.7	186.4	168.1	196.8	219.9	198.7	191.6	172.8	223.4	189.4	177.7	195.6
IV Qtr	**166.1**	**196.8**	**174.7**	**207.2**	**274.9**	**202.1**	**194.8**	**181.6**	**249.4**	**196.0**	**175.1**	**197.6**
Apr/May	162.3	190.6	170.4	199.2	242.4	201.7	192.0	178.0	231.8	190.9	174.8	195.7
May/Jun	164.8	196.9	174.3	208.0	278.1	201.8	193.6	182.6	250.1	197.5	173.4	197.1
Jun/Jul	171.3	203.0	179.3	214.5	304.1	202.9	198.8	184.2	266.4	199.7	177.1	200.0
2012/13												
I Qtr	**174.5**	**208.7**	**187.1**	**233.2**	**316.1**	**206.0**	**200.8**	**188.9**	**251.5**	**220.2**	**182.6**	**210.9**
Jul/Aug	174.2	209.4	185.5	229.7	331.2	204.8	199.9	187.8	268.6	214.4	182.4	209.9
Aug/Sep	174.6	208.7	187.8	234.0	308.5	206.0	200.2	189.3	254.3	221.7	181.9	210.9
Sep/Oct	174.8	208.0	188.1	236.0	308.6	207.3	202.3	189.6	231.6	224.4	183.6	211.9

Appendix D (contd)

Consumer Price Index of Terai (Base Year 2005/06 =100)

Hard Drinks	Tobacco Products	Restaurant & Hotel	Non-Food & Services	Clothing & Footware	Housing & Utilities	Furnishing & Household Equipment	Health	Transport	Commu-nication	Recreation & Culture	Education	Miscellaneous Goods & Services
107.2	**105.5**	**103.3**	**104.0**	**102.3**	**104.7**	**104.3**	**102.8**	**106.8**	**100.0**	**101.8**	**106.9**	**102.5**
107.8	**114.7**	**111.0**	**108.2**	**105.8**	**111.1**	**109.9**	**108.9**	**108.9**	**100.0**	**106.6**	**110.8**	**106.3**
118.3	**130.6**	**131.8**	**118.2**	**114.7**	**122.1**	**122.9**	**113.7**	**126.7**	**100.0**	**135.8**	**121.0**	**113.0**
134.2	**145.2**	**155.9**	**123.7**	**124.9**	**127.7**	**128.8**	**117.5**	**121.0**	**100.0**	**125.4**	**129.8**	**124.1**
128.2	**141.2**	**148.2**	**120.8**	**121.2**	**121.2**	**125.6**	**116.9**	**119.4**	**100.0**	**123.0**	**128.5**	**120.2**
128.2	141.2	147.5	120.6	120.8	121.2	125.5	116.9	119.4	100.0	122.1	128.5	120.2
128.2	141.2	148.2	120.8	121.0	121.2	125.5	116.9	119.4	100.0	123.0	128.5	120.2
128.2	141.2	149.0	121.1	121.8	121.3	125.8	116.9	119.4	100.0	124.0	128.5	120.2
135.3	**144.5**	**151.7**	**122.3**	**123.6**	**124.2**	**128.5**	**117.7**	**120.2**	**100.0**	**124.6**	**128.5**	**120.2**
135.3	144.5	150.0	121.8	123.1	121.6	128.4	117.7	120.2	100.0	124.7	128.5	120.2
135.3	144.5	151.0	122.4	123.5	124.5	128.6	117.7	120.2	100.0	124.6	128.5	120.2
135.3	144.5	154.0	122.8	124.1	126.4	128.6	117.7	120.2	100.0	124.6	128.5	120.2
136.1	**146.8**	**160.3**	**124.9**	**125.9**	**130.0**	**129.3**	**117.5**	**121.3**	**100.0**	**126.6**	**131.0**	**127.0**
136.1	146.8	159.0	124.5	125.7	128.5	129.1	117.5	121.3	100.0	126.6	131.0	127.0
136.1	146.8	160.0	124.8	125.9	130.0	129.1	117.5	121.3	100.0	126.6	131.0	127.0
136.1	146.8	162.0	125.3	126.3	131.6	129.6	117.5	121.3	100.0	126.7	131.0	127.0
137.5	**148.4**	**163.3**	**126.9**	**128.8**	**135.3**	**131.9**	**118.0**	**122.9**	**100.0**	**127.3**	**131.0**	**129.0**
137.5	148.4	162.4	126.6	128.1	134.5	131.7	118.0	122.9	100.0	127.2	131.0	129.0
137.5	148.4	163.5	126.7	128.7	134.6	131.8	118.0	122.9	100.0	127.3	131.0	129.0
137.5	148.4	164.0	127.3	129.6	136.6	132.1	118.0	122.9	100.0	127.2	131.0	129.0
144.5	**177.0**	**183.3**	**128.3**	**139.5**	**135.6**	**138.7**	**121.0**	**138.5**	**88.0**	**109.2**	**134.1**	**132.6**
145.1	**160.6**	**174.8**	**126.3**	**133.2**	**134.1**	**134.1**	**125.8**	**129.2**	**91.6**	**111.8**	**133.2**	**128.2**
145.1	160.6	173.8	128.7	134.5	136.8	134.9	129.4	129.0	93.8	121.8	133.2	129.0
145.1	160.6	175.5	126.5	134.5	135.8	134.6	129.4	129.3	93.8	106.3	133.2	127.9
145.1	160.6	175.0	123.7	130.7	129.8	132.7	118.5	129.3	87.3	107.4	133.2	127.8
144.6	**169.7**	**180.7**	**125.7**	**134.7**	**132.5**	**135.4**	**118.8**	**133.7**	**87.6**	**107.8**	**133.2**	**130.6**
145.1	160.6	175.3	124.0	131.1	130.2	133.0	118.5	129.3	87.3	108.3	133.2	128.1
145.1	160.6	182.4	124.7	131.1	133.2	132.9	118.5	130.4	87.3	108.1	133.2	130.1
143.5	188.0	184.5	128.3	142.0	134.2	140.3	119.3	141.5	88.2	107.0	133.2	133.6
143.5	**188.0**	**187.2**	**129.3**	**143.2**	**136.5**	**140.8**	**119.4**	**143.0**	**87.2**	**108.0**	**133.2**	**134.0**
143.5	188.0	185.7	128.6	142.0	135.5	140.0	119.3	141.5	88.2	106.7	133.2	133.8
143.5	188.0	187.6	129.4	142.0	136.9	140.6	119.3	143.7	88.2	108.5	133.2	133.8
143.5	188.0	188.4	129.8	145.5	137.2	141.8	119.6	143.7	85.3	108.7	133.2	134.4
144.7	**189.7**	**190.5**	**131.8**	**146.7**	**139.2**	**144.3**	**120.0**	**148.0**	**85.3**	**109.3**	**136.7**	**137.5**
143.5	188.0	189.1	130.0	145.5	137.9	141.9	119.6	143.7	85.7	109.0	133.2	134.3
143.5	188.0	190.6	130.4	145.5	138.2	142.5	119.6	144.7	85.7	108.9	133.2	137.4
147.2	193.1	191.8	135.0	149.2	141.4	148.6	120.9	155.6	84.6	109.9	143.7	140.7
151.0	**202.6**	**202.6**	**140.2**	**159.2**	**146.9**	**157.1**	**123.8**	**164.2**	**83.6**	**114.7**	**145.7**	**145.7**
147.2	**193.1**	**192.6**	**135.6**	**150.5**	**142.6**	**149.7**	**121.3**	**155.8**	**84.4**	**110.4**	**143.7**	**140.8**
147.2	193.1	190.9	135.1	149.2	141.7	148.8	120.9	155.6	84.6	110.7	143.7	139.8
147.2	193.1	192.0	135.4	149.2	142.7	149.3	120.9	155.6	84.6	110.3	143.7	140.9
147.2	193.1	194.9	136.1	153.0	143.3	151.0	122.0	156.3	83.9	110.1	143.7	141.6
149.3	**196.3**	**200.4**	**138.0**	**155.9**	**144.3**	**154.5**	**122.7**	**159.8**	**83.8**	**112.6**	**143.7**	**143.7**
147.2	193.1	199.3	136.5	153.0	143.5	151.7	122.0	156.4	83.9	110.6	143.7	142.0
147.2	193.1	200.3	136.9	153.0	144.3	152.2	122.0	156.4	83.9	112.1	143.7	143.1
153.4	202.7	201.5	140.5	161.8	145.2	159.5	124.1	166.5	83.5	115.0	143.7	146.1
153.4	**207.7**	**205.4**	**141.9**	**163.1**	**148.7**	**160.7**	**124.6**	**168.8**	**83.4**	**116.9**	**143.7**	**147.3**
153.4	207.7	203.2	141.1	161.8	147.6	160.0	124.1	167.8	83.5	115.3	143.7	145.7
153.4	207.7	204.7	141.8	161.8	148.9	160.5	124.1	168.8	83.5	117.6	143.7	146.8
153.4	207.7	208.3	142.9	163.6	149.7	161.5	125.5	169.8	83.2	117.9	143.7	149.4
154.3	**213.1**	**211.9**	**145.4**	**167.2**	**151.9**	**163.5**	**126.7**	**172.3**	**82.7**	**118.8**	**151.9**	**151.0**
153.4	207.7	210.1	143.0	163.6	149.9	161.6	125.5	169.8	83.2	117.9	143.7	149.9
153.4	207.7	210.7	143.2	165.6	150.7	162.1	125.5	169.9	83.2	118.0	143.7	150.6
156.0	223.9	214.9	149.9	170.3	155.1	166.8	129.2	177.1	81.7	120.6	168.2	152.6
156.0	**223.9**	**219.2**	**151.8**	**171.8**	**157.1**	**171.2**	**129.9**	**177.9**	**81.6**	**125.5**	**168.2**	**156.3**
156.0	223.9	217.9	150.8	170.3	155.5	168.8	129.2	177.1	81.7	124.9	168.2	155.1
156.0	223.9	218.1	151.8	170.3	158.3	170.9	129.2	178.3	81.7	125.4	168.2	156.7
156.0	223.9	221.3	152.7	174.7	157.5	173.9	131.2	178.3	81.4	126.1	168.2	157.0