CHAPTER II
MACRO ECONOMY OF NEPAL

This chapter deals with macroeconomic performance, monetary policy along with the measurement of inflation in Nepal.

1. MACRO PERFORMANCE

In this section, the important macroeconomic economic variables such as gross domestic product at factor costs (real agricultural and non-agriculture GDP), monetary aggregates, inflation, rate of interest, and budget deficit of the government in Nepal are discussed.

(A) Gross Domestic Product (GDP) at Factor Costs

The growth rate of Gross Domestic Product (GDP) in real term (base year FY1994/95) stood at 4.3 percent per annum (Table 2.3). The agricultural sector grew at a rate of 2.5 percent per annum and the non-agricultural sector at a rate of 6.3 percent. Real GDP has a negative growth in three years out of 28 years. The years of negative growth rate were FY1979/80, FY1982/83 and FY2001/02. In the year FY1982/83, GDP declined to the lowest negative growth of 3.4 percent. This was attributed mainly to the negative growth rate of more than 1 percent growth of agricultural sector due to drought (Nepal Rastra Bank, 1996) and negative 5 percent growth of the non-agricultural sector during the year. After 19 years from FY1982/83, the real GDP once again recorded a negative growth of 0.03 percent in FY2001/02.

Over the years, the relative contribution of the agricultural sector is declining and that of the non-agricultural sector rising. It implies that there is a structural

shift in the Nepalese economy. The contribution of the agricultural sector to the GDP declined from 66.8 percent in FY 1975/76 to 39.6 percent in FY2002/03 whereas in case of non-agricultural sector it increased from 33.2 percent in FY1975/76 to 60.4 percent in FY2002/03. The steady expansion of the services sector is attributed to the growing contribution of the non-agricultural sector. The growth rates of the agricultural sector vary from year to year.

The growth of GDP in real terms in the fifth plan was 3 percent (Table 2.2). It remained stable within the narrow band of 4.7 percent to 4.9 percent during the sixth to eighth plan. A better growth performance is attributable to the relatively high growth of the agricultural sector by more than 4 percent during the period. The rates of growth from the ninth plan onwards show a declining trend. It was 3.6 percent in the ninth plan and 2.4 percent in the tenth plan.

(B) Monetary Situation

Average annual rate of growth of M1, M2 and RM over the review period stood at 15.9 percent, 18.7 percent and 27.8 percent respectively (Table 2.4). M1 monetary aggregate registered the highest rate of growth of 28.3 percent in FY1986/87 attributable to high rate of growth of currency component of M1 by 29.9 percent. Similarly, M2 has the highest rate of growth of 27.7 percent in FY1977/78 and FY1993/94. Currency component of M1 as well as time deposit of M2 is responsible for this increase. For RM, the highest rate of growth stood at 95.6 percent in FY2001/02. RM monetary aggregate shows extreme fluctuation ranging between 0.6 percent and 95.6 percent during the period. Also, there is a persistently rising trend in its rate of growth during the recent years.

Assuming income elasticity of demand for money at 1.5 percent (Paudyal, 1999) and annual average growth rates of real GDP at 4.3 percent, the desired demand for money becomes 6.5= (1.5x4.3) percent. Given the rate of growth of

M1 monetary aggregate at 15.9, the estimated rate of inflation should be around 9.4 (15.9-6.5) percent in the long-run. But actual rate of inflation stood at 8.5 percent , during the period under review. This implies that there is a negligible effect of money supply on real sector in the long-run. This reflects the excess money supply bidding up inflation as postulated by classical economists. However, Acharya, Khatiwada, and Aryal (2003) found greater impact of money supply on real sector variables using 1.2 income elasticity of demand for money. Since there is not much difference between the predicted and the actual rate of increase in prices in the long-run, the rate of growth of money supply can be taken to be optimal (Paudyal, 1999). However, such closeness in predicted and actual rates is not observed on year-to-year basis.

(C) Price Situation

The overall inflation measured by annual variation in national urban consumer price index (base year FY1995/96) was 8.5 percent during the review period (Table 2.5). Inflation increased to double digits for nine out of 28 years. The rates of growth in individual years range from 21.1 percent in FY1991/92 to negative 0.6 percent in FY1975/76.

Factors that contributed to the highest rate of inflation in FY 1991/92 are internal as well as external. The internal reasons for acceleration of inflation were shortages in the supply of essential food grains, devaluation of Nepalese rupees vis-à-vis foreign currencies, the policy of current account convertibility, expansionary fiscal and monetary policy adopted in the domestic economy, rise in food and beverages index by 24 percent, the steep rise in the index of rice. The external factor contributing to Nepalese inflations is higher rate of inflation in India.

Overall inflation as measured by annual variation of national urban consumer price index (base year FY1995/96) shows a rising trend from the fifth plan to

the seventh plan and a falling trend during subsequent plans (Table 2.2). Inflation during the fifth plan was 5.2 percent during the fifth plan and it increased to 9.7 percent in the sixth plan. This increase is attributed to the combined effects of an abrupt rise in both the food and non-food price indices in the sixth plan. During the seventh plan, inflation increased moderately and reached its peak at 11.6 percent. Only the food price index fuelled overall inflation during the seventh plan period because the non-food price index was already in a declining trend. The rate of inflation declined gradually from 8.3 percent in the eighth plan to 5.7 percent in the ninth plan and further to 4.8 percent in the tenth plan. Both the food and non-food indices followed the declining pattern during the period. Since, food and non-food indices are the two components of overall index; the pattern of fluctuation of food and non-food indices determined the variability of the overall index. However, food inflation approximates the pattern of variability of total inflation than that of non-food inflation.

Money supply in excess of demand results into inflation. Demand for money is determined by transaction of goods and services available in the economy. Transaction demand is represented by real income. Therefore, excess money supply is calculated by deducting real GDP growth rate from actual growth rate of money supply. Excess money supply in terms of both the M1 and M2 monetary aggregates are given in Table 2.1.

Table 2.1
Variation of Inflation and Excess Supply of Money
(1975-2003)

Period (Year)	Inflation	Real GDP (base 1994/95) p.a.	Standard Deviation of Inflation	Nominal GDP	M1	M2	Excess money growth (M1)	Excess money growth (M2)
1975-80	5.2	3.0	6.22	7.2	14.7	18.9	11.7	15.9
1981-85	9.7	4.7	1.83	13.8	14.5	18.4	9.8	13.7
1986-90	11.6	4.8	2.5	17.6	19.2	20.6	14.4	15.8
1991-95	11.3	5.1	6.82	16.2	19.4	21.3	14.3	16.2
1995-00	7.9	4.9	0.13	11.8	12.4	17.0	7.5	12.1
2001-03	3.4	2.2	1.27	5.4	14.8	13.8	12.6	11.6
1975-2003	8.5	4.3	-	12.5	15.9	18.7	11.6	14.4

The growth of excess money supply in terms of M2 is higher than that of M1. The highest level of inflation was associated with corresponding growth of money supply (M1) and (M2) during 1986-1995. During 1986-90 inflation increased to the highest rate of 11.6 percent which is accompanied by the highest rate of growth of 14 percent in terms of M1 and above 15 percent in terms of M2. This implies that money supply is one of the factors contributing to the acceleration of inflation in Nepal.

In developing countries, a significant relationship can be traced between the magnitude of inflation and variability of inflation (Rao, 1992). If the volatility of the inflation rate increases with rising inflation, the expectations of the future course of inflation becomes uncertain. In this situation, expectations are not realized. In Nepal, the five years mean inflation was recorded at 5.2 during FY1975-80 and increased to a peak of 11.6 during FY1986-90. It marginally declined to 11.3 percent in 1991-95. After FY1995-96 inflation started to decline and it came down to 3.4 percent during the last three years of the study. However, the standard deviation which measures the volatility of inflation was found to be quite erratic throughout the periods.

(D) Public Finance and Fiscal Deficit

A high deficit in budget is the main characteristic of the Nepalese economy. The total government expenditure as percentage of GDP increased, on an average, by 17.9 percent whereas the revenue increased by 11.9 percent ensuing 6 percent revenue expenditure gap (Table 2.6). The budget deficit as percentage of GDP stood at 6 percent during the period. There has been a growing trend of revenue-expenditure gap of the government finances. This is one of the important factors ensuring imbalance in saving-investment gap of the economy.

The rates of growth of total expenditure as percentage of GDP exceeded that of total receipts causing budget deficit. The growth of total expenditure as percentage of GDP in FY1975/76 stood at 11 percent and it increased to a peak of 21 percent in FY1988/89. However, it declined to 19.6 percent in FY2002/03. Similarly, the total receipts' growth was 8.5 percent in FY1975/76 and peaked at 15.1 percent in FY2002/03. Budget deficit increased from 2.5 percent in FY1975/76 to the highest of 10 percent in FY1988/89. Later on it declined to 4.6 percent in FY2002/03. The highest rate of deficit in FY1988/89 can be attributed to the highest rate of growth of total expenditure combined with relatively constant receipts.

The rate of growth of total expenditure as percentage of GDP exceeded than that of total receipts during fifth to sixth plans (Table 2.2). The total expenditure to GDP ratio increased from 13.3 percent to 18.1 percent, whereas total receipt to GDP ratio increased merely from 10.2 percent to 11.5 percent. Therefore, this differential growth rate of expenditure and receipts was main reason for budget deficit. Thus a higher budget deficit of 6.7 percent is witnessed in the sixth plan as compared to 3.1 percent in the fifth plan. During other plan periods, the total expenditure fluctuates between 18.6 percent and 19.6 percent. Total receipt, however, is seen as continuously increasing, from the seventh plan onwards. It was 11.6 percent in the seventh plan which rose to 12.7 percent, to 13.5 percent and to 15.1 percent in eighth, ninth and tenth plans respectively. Budget deficit shows a declining trend from seventh plan.

(E) Rate Interest

The short term nominal rates of interest measured by discount rate seemed to be stable in the range of 4.2 percent and 5.1 percent. However, the highest interest rate of 8.3 percent during the eighth plan period was an exception (Table 2.2). The long-run rates of interest as measured by government yield are found to be increasing during the fifth to the seventh plan. It increased from 9.7

percent in the fifth plan to 10.9 percent in the sixth plan and increased further to the highest of 13 percent in seventh plan. It recorded a decline at 10.5 percent, 8.8 percent and 8.3 percent in the eighth, ninth and tenth plan periods. All the short-term real interest rates are found negative while all long-term real interest rates are found to be positive during all plan periods.

(F) Consumption, Investment and Saving

Consumption is a major constituent of aggregate demand. The ratio of total consumption to GDP is fluctuating at a high level ranging between 87.8 percent and 93.7 percent throughout the plan periods (Table 2.2). There is a gradual increase in the level of consumption from the lowest level of consumption at 87.8 percent in the fifth plan to the highest level of 93.7 percent in the seventh plan. However, it declined to 89.3 percent in the eighth plan and recovered back to 89.5 percent and 92.3 percent during the ninth and tenth plans respectively. Total investment is another component of aggregate demand. Its trend as percentage of GDP is found to be increasing throughout the plan periods. Total investment increased to 16.6 percent, 19.2 percent, 20.7 percent, 25.7 percent, 24.8 percent and 28.5 percent from the fifth plan to tenth plan respectively.

Total saving is the residual of total consumption and investment. Total saving as percentage of GDP declined to 9.7 percent in sixth plan from the highest ever of 12.2 percent in fifth plan. It further declined to the lowest of 6.3 percent in the seventh plan. During the eighth plan, there was sharp increase of 10.7 percent. However, it showed a declining trend at 10.5 percent and 7.7 percent during the ninth and tenth plans respectively. The decade-wise trend of investment to GDP ratio witnessed a continuous rise throughout the review period, whereas the ratio of saving to GDP reached to its peak level during the second decade.

To sum up the performance of the Nepalese economy, it can be stated that the growth rate of Gross Domestic Product (GDP) in real term (base year FY1994/95) is found to be 4.3 percent per annum during 1975-2003. The agricultural sector grew at a rate of 2.5 percent per annum and the non-agricultural sector at a rate of 6.3 percent. Real GDP has a negative growth in three years out of 28 years. Average annual rate of growth of M1, M2 and RM over the review period stood at 15.9 percent, 18.7 percent and 27.8 percent respectively. The budget deficit as percentage of GDP stood at 6 percent during the period. Total consumption as percentage of GDP stood at 90.4 percent whereas total investment was at 22 percent. The overall inflation was 8.5 percent per annum during the period.

Table 2.2

Macroeconomic Indicators of Nepalese Economy (1975-2003)

	Macroeconomic Variables / Development Plans	Average Annual Growth Rate (%)								
		Fifth Plan	Sixth Plan	Seventh Plan	Eighth Plan	Nineth Plan	Tenth Plan	Decade		
								First	Second	8 years
		(1975-1980)	(1980-1985)	(1985-1990)	(1993-1997)	(1997-2002)	(2002-2003)	(1975-1984)	(1985-1994)	(1995-2003)
1	**Gross Doemstic Product (at Factor Costs)**	1975-80	1980-85	1985-90	1993-97	1997-02	2002-03			
1 1	**Real GDP(1994/95 Prices)**	3 0	4 7	4 8	4 9	3 6	2 4	3 8	4 9	3 9
a	Agriculture	-1 1	4 0	4 1	2 9	3 2	2 1	1 5	2 8	3 3
b	Non-Agriculture	9 1	5 7	5 6	6 4	3 9	2 6	7 4	6 8	4 3
2	**Resource Available**									
2 1	Consumption	7 1	14 2	18 8	12 6	9 0	6 5	10 6	16 7	9 9
a	Private	7 2	13 4	19 2	12 3	8 8	5 9	10 3	16 7	9 7
b	Public	5 7	23 2	15 8	16 3	11 2	10 6	14 5	17 0	11 1
2 2	Total Investment	12 6	19 5	13 9	16 4	9 4	12 9	16 0	18 9	11 0
2 3	Gross Domestic Savings	9 6	10 4	8 5	20 2	4 8	-0 1	10 0	24 7	5 5
2 4	Gross Fixed Capital Formation	11 0	21 0	13 0	15 9	6 1	5 2	16 0	18 3	7 5
2 5	Change in Stock	34 2	-39 6	28 0	37 7	55 5	36 2	-2 7	36 7	46 7
2 6	Consumption/GDP(%)	87 8	90 3	93 7	89 3	89 5	92 3	89 1	92 2	89 9
2 7	Saving /GDP(%)	12 2	9 7	6 3	10 7	10 5	7 7	10 9	7 8	10 1
2 8	Investment/ GDP(%)	16 6	19 2	20 7	25 7	24 8	28 5	17 9	22 2	25 9
3	**Public Finance**									
3 1	Expenditure	18 2	19 7	18 7	14 0	9 8	5 2	18 9	16 7	10 3
3 2	Receipts	15 8	12 6	18 9	19 3	9 6	11 5	14 2	19 7	10 7
3 3	Budget Deficit	33 0	41 8	22 0	5 8	11 0	-10 6	37 4	13 6	9 9
3 4	Expenditure/GDP(%)	13 3	18 1	19 4	18 6	19 1	19 6	5 7	6 9	11 1
3 5	Receipts/GDP(%)	10 2	11 5	11 6	12 7	13 5	15 1	10 6	12 1	8 9
3 6	Budget Deficit/GDP (%)	3 1	6 7	7 8	5 9	5 6	4 6	15 7	19 1	19 2
4	**Monetary Survey**									
4 1	Narrow Money (M1)	14 7	14 5	19 2	17 6	14 2	9 3	14 6	19 3	13 3
4 2	Broad money (M2)	18 9	18 4	20 6	19 8	18 3	4 4	18 6	21 0	15 8
4 3	Reserve Money (RM)	2 0	5 0	13 4	37 2	70 4	84 0	3 5	23 8	63 2
4 4	M1/GDP(%)	9 1	10 7	11 2	13 0	14 8	18 0	9 9	11 7	14 9
4 5	M2/GDP(%)	15 8	21 7	24 7	31 9	43 2	52 3	18 8	26 8	42 1
4 6	RM/GDP(%)	7 9	9 7	10 5	12 9	15 1	18 4	8 8	11 4	15 1
5	**Inflation (Annual variation in National Urban Consumer Price Index (Base Year 1995/96)**									
5 1	Inflation (Overall)	5 2	9 7	11 6	8 3	5 7	4 8	7 5	11 4	6 2
5 2	Food (weight 53 20)	4 8	9 4	12 5	8 0	5 2	4 4	7 1	12 0	5 9
5 3	Non-Food (weight 46 80)	6 7	10 4	10 0	9 0	6 4	5 0	8 6	10 5	6 5
6	**Interest Rate (percentage per annum)**									
A	Nominal Interest Rate									
6 1	Short Run	4 4	5 0	5 1	8 3	4 2	4 7	4 7	6 0	5 9
6 2	Long Run	9 7	10 9	13 0	10 5	8 8	8 3	10 3	12 0	8 8
B	Real Interest Rate									
6 3	Short Run	-0 8	-4 7	-6 5	-0 1	-1 5	-0 1	-2 8	-5 0	-0 3
6 4	Long Run	4 5	1 2	1 4	2 1	3 1	3 5	2 8	1 0	2 6

Sources

1 Economic Survey, Ministry of Finance, FY 1995/96, 2002/03 and 2003/04

2 Quarterly EconomicBulletin, Nepal Rastra Bank, Vol XXXVIII

3 Economic Review, Nepal Rastra Bank, April 2004, No 14

4 Acharya M Khatiwada Y and Aryal S (2003), "Structural Adjustment Policies and Poverty Eradication", IIDS, Kathmandu, Nepal

5 International Financial Statistics yearbook (1993 and 2003), International Monetary Fund

Table 2.3
Gross Domestic Product (GDP) at Factor Cost

Fiscal Years	Figures in Million NRs									Annual Growth Rate (%)					
	Nominal GDP (at Current Price)			Real GDP (at 1994/95 Price)			GDP Deflator (at 1994/95 Prices)			Nominal GDP (Current Prices)			Real GDP (at 1994/95 Prices)		
	Total	Agri-culture	Non-agri-culture	Total	Agri-culture	Non-agri-culture	Total	Agri-culture	Non-agri-culture	Total	Agri-culture	Non-agri-culture	Total	Agri-culture	Non-agri-culture
1974/75	16571 0	11550 0	5021 0	89670 6	57121 7	32548 9	18 0	20 2	15 4						
1975/76	17394 0	11611 0	5783 0	94314 6	57480 2	36834 4	18 1	20 2	15 7	5 0	0 5	15 2	5 2	0 6	13 2
	(100 0)	(66 8)	(33 2)	(100 0)	(61 0)	(39 0)									
1976/77	17280 0	10506 0	6774 0	98428 3	55005 2	43423 1	17 5	19 1	16 6	-0 7	-9 5	17 1	4 4	-4 3	17 9
	(100 0)	(60 8)	(39 2)	(100 0)	(56 0)	(44 0)									
1977/78	19732 0	11752 0	7980 0	103537 3	55173 7	48363 6	19 1	21 3	16 5	14 2	11 9	17 8	5 2	0 3	11 4
	100 0	(59 6)	(40 4)	(100 0)	(53 2)	(46 8)									
1978/79	22215 0	13522 0	8693 0	105928 1	56815 1	49113 0	21 0	23 8	17 7	12 6	15 1	8 9	2 3	3 0	1 5
	(100 0)	(60 9)	(39 1)	(100 0)	(53 7)	(46 3)									
1979/80	23351 0	13683 0	9668 0	103918 1	54083 0	49835 1	22 6	25 3	19 4	5 1	1 2	11 2	-1 9	-4 8	1 5
	(100 0)	(58 6)	(41 4)	(100 0)	(52 1)	(47 9)									
1980/81	27307 0	15679 0	11628 0	112062 4	59684 1	52378 4	24 4	26 3	22 2	16 9	14 6	20 3	7 8	10 4	5 1
	(100 0)	(57 4)	(42 6)	(100 0)	(53 2)	(46 8)									
1981/82	30988 0	17903 0	13085 0	116249 3	62401 5	53847 7	26 7	28 7	24 3	13 5	14 2	12 5	3 7	4 6	2 8
	(100 0)	(57 8)	(42 2)	(100 0)	(53 7)	(46 3)									
1982/83	33761 0	19282 0	14479 0	112348 0	61722 2	50625 9	30 0	31 2	28 6	8 9	7 7	10 7	-3 4	-1 1	-6 0
	(100 0)	(57 1)	(42 9)	(100 0)	(54 9)	(45 1)									
1983/84	39390 0	22771 0	16619 0	123378 3	67609 9	55768 5	31 9	33 7	29 8	16 7	18 1	14 8	9 8	9 5	10 2
	(100 0)	(57 8)	(42 2)	(100 0)	(54 8)	(45 2)									
1984/85	44441 0	22761 0	21680 0	129878 2	65161 8	64716 4	34 2	34 9	33 5	12 8	0 0	30 5	5 3	-3 6	16 0
	(100 0)	(51 2)	(48 8)	(100 0)	(50 2)	(49 8)									
1985/86	53215 0	27136 0	26079 0	135928 4	66936 4	68992 1	39 1	40 5	37 8	19 7	19 2	20 3	4 7	2 7	6 6
	(100 0)	(51 0)	(49 0)	(100 0)	(49 2)	(50 8)									
1986/87	61140 0	30623 0	30517 0	138771 3	66456 2	72315 2	44 1	46 1	42 2	14 9	12 9	17 0	2 1	-0 7	4 8
	(100 0)	(50 1)	(49 9)	(100 0)	(47 9)	(52 1)									
1987/88	73170 0	36755 0	36415 0	148462 8	70818 9	77643 9	49 3	51 9	46 9	19 7	20 0	19 3	7 0	6 6	7 4
	(100 0)	(50 2)	(49 8)	(100 0)	(47 7)	(52 3)									
1988/89	85830 0	42572 0	43258 0	156394 9	75082 9	81312 0	54 9	56 7	53 2	17 3	15 8	18 8	5 3	6 0	4 7
	(100 0)	(49 6)	(50 4)	(100 0)	(48 0)	(52 0)									
1989/90	99702 0	50470 0	49232 0	163926 3	79480 3	84446 0	60 8	63 5	58 3	16 2	18 6	13 8	4 8	5 9	3 9
	(100 0)	(50 6)	(49 4)	(100 0)	(48 5)	(51 5)									
1990/91	116128 0	55368 0	60760 0	174924 9	81304 0	93621 0	66 4	68 1	64 9	16 5	9 7	23 4	6 7	2 3	10 9
	(100 0)	(47 7)	(52 3)	(100 0)	(46 5)	(53 5)									
1991/92	144933 0	65156 0	79777 0	183377 6	80439 5	102938 1	79 0	81 0	77 5	24 8	17 7	31 3	4 8	-1 1	10 0
	(100 0)	(45 0)	(55 0)	(100 0)	(43 9)	(56 1)									
1992/93	165350 0	70090 0	95260 0	188765 7	79647 7	109118 0	87 6	88 0	87 3	14 1	7 6	19 4	2 9	-1 0	6 0
	(100 0)	(42 4)	(57 6)	(100 0)	(42 2)	(57 8)									
1993/94	191596 0	80589 0	111007 0	204468 8	86376 2	118092 6	93 7	93 3	94 0	15 9	15 0	16 5	8 3	8 4	8 2
	(100 0)	(42 1)	(57 9)	(100 0)	(42 2)	(57 8)									
1994/95	209976 0	85569 0	124407 0	209976 0	85569 0	124407 0	100 0	100 0	100 0	9 6	6 2	12 1	2 7	-0 9	5 3
	(100 0)	(40 8)	(59 2)	(100 0)	(40 8)	(59 2)									
1995/96	239388 0	96896 0	142492 0	221241 4	88813 9	132427 5	107 9	109 1	107 6	14 0	13 2	14 5	5 4	3 8	6 4
	(100 0)	(40 5)	(59 5)	(100 0)	(40 1)	(59 9)									
1996/97	269570 0	108785 0	160785 0	233041 9	92740 8	140301 0	115 7	117 3	114 6	12 6	12 3	12 8	5 3	4 4	5 9
	(100 0)	(40 4)	(59 6)	(100 0)	(39 8)	(60 2)									
1997/98	289798 0	112495 0	177303 0	240773 7	93512 1	147261 6	120 3	120 3	120 4	7 5	3 4	10 3	3 3	0 8	5 0
	(100 0)	(38 8)	(61 2)	(100 0)	(38 8)	(61 2)									
1998/99	330018 0	132373 0	197645 0	251827 3	96201 3	155626 0	131 1	137 6	127 0	13 9	17 7	11 5	4 6	2 9	5 7
	(100 0)	(40 1)	(59 9)	(100 0)	(38 2)	(61 8)									
1999/00	366251 0	145131 0	221120 0	267111 1	100855 5	166255 6	137 1	143 9	133 0	11 0	9 6	11 9	6 1	4 8	6 8
	(100 0)	(39 6)	(60 4)	(100 0)	(37 8)	(62 2)									
2000/01	393566 0	151059 0	242507 0	279351 3	105635 7	173715 6	140 7	143 0	139 6	7 5	4 1	9 7	4 6	4 7	4 5
	(100 0)	(38 4)	(61 6)	(100 0)	(37 8)	(62 2)									
2001/02	405632 0	160144 0	245488 0	268646 7	108719 6	159927 0	145 5	147 3	153 5	3 1	6 0	1 2	-3 8	2 9	-7 9
	(100 0)	(39 6)	(60 4)	(100 0)	(39 1)	(60 9)									
2002/03	435531 0	171104 0	264427 0	286469 7	111468 4	175001 3	152 0	153 5	151 1	7 4	6 8	7 7	6 6	2 5	9 4
	(100)	(39 3)	(60 7)	(100)	(39 9)	(61 1)									
2003/04	472424 0	183357 0	289067 0	296389 6	115609 7	180779 9	159 4	158 6	159 9	8 5	7 2	9 3	3 5	3 7	3 3
	(100 0)	(39 6)	(60 4)	(100 0)	(39 0)	(61 0)			Average	***12 5***	***10 3***	***15 4***	***4 3***	***2 5***	***6 3***

Sources
1 Economic Survey, FY 1994/95, HMGN, Ministry of Finance, 1995
2 Economic Survey, FY 1995/96, HMGN, Ministry of Finance,1996
3 Economic Survey, FY 2002/03, HMGN, Ministry of Finance, 2003
4 Figures in parenthesis are share of contribution to the total

Table 2.4
Monetary Growth

	Figures are in Million NRs			Annual Growth Rate		
Fiscal Years	Narrow Money Supply (M1)	Broad Money Supply (M2)	Reserve Money (RM)	M1	M2	RM
1975/76	1337 7	2064 4	1178 9	4 4	8 0	0 6
1976/77	1452 5	2524 0	1278 5	8 6	22 3	1 0
1977/78	1852 9	3223 0	1594 8	27 6	27 7	3 2
1978/79	2060 6	3772 1	1849 7	11 2	17 0	2 5
1979/80	2504 9	4511 4	2117 3	21 6	19 6	2 7
1980/81	2830 4	5285 3	2468 6	13 0	17 2	3 5
1981/82	3207 8	6307 7	2706 2	13 3	19 3	2 4
1982/83	3611 5	7458 0	3375 6	12 6	18 2	6 7
1983/84	4348 9	9222 4	4012 6	20 4	23 7	6 4
1984/85	4931 5	10455 2	4624 1	13 4	13 4	6 1
1985/86	5480 0	12296 6	5177 3	11 1	17 6	5 5
1986/87	7029 3	15159 0	6587 3	28 3	23 3	14 1
1987/88	8120 2	17498 2	7600 0	15 5	15 4	10 1
1988/89	9596 6	21422 6	8995 9	18 2	22 4	14 0
1989/90	11775 4	26605 1	11336 8	22 7	24 2	23 4
1990/91	14223 0	31552 4	13924 8	20 8	18 6	25 9
1991/92	16283 6	37712 5	16786 0	14 5	19 5	28 6
1992/93	19457 7	45670 5	18863 1	19 5	21 1	20 8
1993/94	23833 0	58322 5	24443 8	22 5	27 7	55 8
1994/95	28510 4	69777 1	28405 7	19 6	19 6	39 6
1995/96	32985 4	80984 7	32686 3	15 7	16 1	42 8
1996/97	36498 0	92652 2	35390 0	10 6	14 4	27 0
1997/98	38460 3	103720 6	41027 3	5 4	11 9	56 4
1998/99	45163 8	126462 6	45995 5	17 4	21 9	49 7
1999/00	51062 4	152800 1	52225 3	13 1	20 8	62 3
2000/01	60979 8	186120 9	61003 7	19 4	21 8	87 8
2001/02	70577 0	214454 1	70566 6	15 7	15 2	95 6
2002/03	77156 2	223988 0	78969 7	9 3	4 4	84 0
2003/04	83754 1	245911 2		***15.9***	***18.7***	***27.8***

Sources

1 Economic Survey, FY 1986-87, His Majesty's Government, Ministry of Finance, 1987

2 Quarterly Economic Bulletin, Nepal Rastra Bank, Mid-October 2003-Mid-January 2004 Vol XXXVIII

3 Economic Survey, FY 1994/95, HMGN, Ministry of Finance, 1995

4 Economic Survey, FY 1995/96, HMGN, Ministry of Finance, 1996

Table 2.5

National Urban Consumer Price Index(Base Year: 1995/96=100)

Fiscal Years	Food and Beverages (weight=53 20)		Non-Food and Services (weight =46 80)		Overall Index (weight=100)	
	Index	% change	Index	% change	Index	% change
1974/75	15 4		15 3		15 5	
1975/76	14 8	-3.9	16 4	7 2	15 4	-0 6
1976/77	14 8	0 0	17 6	7 3	15 8	2 6
1977/78	17 1	15 5	18 3	4 0	17 6	11 4
1978/79	17 3	1 2	19 7	7 7	18 2	3 4
1979/80	19 2	11 0	21 2	7 6	19 9	9 3
1980/81	21 8	13 5	24 1	13 7	22 6	13 6
1981/82	24 2	11 0	26 3	9 1	25 0	10 6
1982/83	28 1	16 1	29 1	10 6	28 5	14 0
1983/84	29 6	5 3	31 6	8 6	30 3	6 3
1984/85	29 9	1 0	34 7	9 8	31 5	4 0
1985/86	35 5	18 7	38 4	10 7	36 5	15 9
1986/87	40 9	15 2	42 1	9 6	41 4	13 4
1987/88	45 8	12 0	45 9	9 0	45 9	10 9
1988/89	48 5	5 9	51 8	12 9	49 7	8 3
1989/90	53 8	10 9	55 9	7 9	54 5	9 7
1990/91	59 2	10 0	61 1	9 3	59 8	9 7
1991/92	73.7	24 5	70 2	14 9	72 4	21 1
1992/93	78 4	6 4	79 7	13 5	78 8	8 8
1993/94	85 5	9 1	86 8	8 9	85 9	9 0
1994/95	91 8	7 4	93.7	7.9	92 5	7 7
1995/96	100 0	8 9	100 0	6 7	100 0	8 1
1996/97	108 2	8 2	108 0	8 0	108 1	8 1
1997/98	116 6	7 8	117 8	9 1	117 1	8 3
1998/99	135 5	16 2	124 6	5.8	130 4	11 4
1999/00	136 1	0 4	133 4	7 1	134 9	3 5
2000/01	133 0	-2 3	144 2	8 1	138 1	2 4
2001/02	137 9	3 7	147 2	2 1	142 1	2 9
2002/03	144 0	4 4	154 6	5 0	148 9	4 8
	Average	***8.5***		***8.6***		***8.5***

Sources

1 Quarterly Economic Bulletin, Nepal Rastra Bank, Mid-July 2003, Volume XXXVII, No 4

Table 2.6
Public Finance and Fiscal Deficit

	Figues in Million NRs			As percentage of GDP						Annual Growth Rate (%)		
Fiscal Years	Total Expenditure	Total Receipt	Budget Deficit	Total Expemdutre	Total Receipt	Budget Deficit	Foreign Aid	Foreign Loan	Foreign Debt	Total Expemdutre	Total Receipt	Budget Deficit
1975/76	1913 3	1475 8	437 5	11 0	8 5	2 5	2 9	0 8	2 7	26 4	14 3	96 6
1976/77	2330 4	1715 5	614.9	13 5	9 9	3 6	3 2	1 0	3 6	21 8	16 2	40 5
1977/78	2674.9	2048 7	626 2	13 6	10 4	3 2	4 3	1 8	4 9	14 8	19 4	1 8
1978/79	3020 5	2410 9	609 6	13 6	10 9	2 7	4 5	1 7	5 9	12 9	17 7	-2 7
1979/80	3470 7	2685 6	785 1	14 9	11 5	3 4	5 7	2 3	7 7	14 9	11 4	28 8
1980/81	4092 3	3288 2	804 1	15 0	12.0	2 9	5 7	2 6	9 0	17 9	22 4	2 4
1981/82	5361 3	3672 8	1688 5	17 3	11 9	5 4	5 6	2 5	10 3	31.0	11 7	110 0
1982/83	6979 2	3931 7	3047 5	20 7	11 6	9 0	6 1	3 1	14 0	30 2	7 0	80 5
1983/84	7437 3	4285 9	3151 4	18 9	10 9	8 0	6 5	4 2	16 0	6 6	9 0	3 4
1984/85	8394 8	4840 2	3554 6	18 9	10 9	8 0	6 0	3 9	20 7	12 9	12 9	12 8
1985/86	9797 1	5817 4	3979 7	18 4	10 9	7 5	6 6	2 4	19 4	16 7	20 2	12 0
1986/87	11513 2	7260 2	4253 0	18 8	11 9	7 0	5 4	3 9	24 8	17 5	24 8	6 9
1987/88	14105 0	9427 2	4677 8	19 3	12 9	6 4	6 9	5 6	28 5	22 5	29 8	10 0
1988/89	18005 0	9457 4	8547 6	21 0	11 0	10 0	6 6	6 6	34 0	27 6	0 3	82 7
1989/90	19669 3	11262 9	8406 4	19 7	11 3	8 4	6 4	6 0	36 9	9 2	19 1	-1 7
1990/91	23549 8	12894 7	10655 1	20 3	11 1	9 2	5 2	6 3	51 2	19 7	14 5	26 7
1991/92	26418 2	15156 5	11261 7	18 2	10 5	7 8	5 4	5 0	48 9	12.2	17 5	5 7
1992/93	30897 7	18941 7	11956 0	18 7	11 5	7 2	5 6	4 2	52 9	17 0	25 0	6 2
1993/94	33597.4	21974 4	11623 0	17 5	11 5	6 1	6 0	4 8	53 2	8 7	16 0	-2 8
1994/95	39060 0	28542 5	10517 5	18 6	13 6	5 0	5 4	3 5	53 8	16 3	29 9	-9 5
1995/96	46542 4	32718 2	13824 2	19.4	13 7	5 8	6 0	4 0	53 5	19 2	14 6	31 4
1996/97	50723 7	36361 8	14361 9	18 8	13 5	5 3	5 6	3 3	49 0	9 0	11 1	3 9
1997/98	56118 3	38340 5	17777 8	19 4	13 2	6 1	5 7	4 8	55 6	10 6	5 4	23 8
1998/99	59579 0	41587 9	17991 1	18 1	12 6	5 5	4 9	3 3	51 4	6 2	8 5	1 2
1999/00	66272 5	48605 1	17667 4	18 1	13 3	4 8	4 8	3 4	52 1	11 2	16 9	-1 8
2000/01	79835 1	55647 1	24188 0	20 3	14 1	6 1	4 8	2.8	50 9	20 5	14 5	36 9
2001/02	80072 3	57131 6	22940 7	19 8	14 1	5 7	3 6	2 5	54 4	0 3	2 7	-5 2
2002/03	84200 0	64629 8	19570 2	19 6	15 1	4 6	0 0	0 0	0 0	5 2	13 1	-14 7
			Average	***17.9***	***11.9***	***6.0***	***5.4***	***3.6***	***32.1***	***15.7***	***15.2***	***20.9***

Sources

1 Economic Survey, FY 1994/95, HMGN, Ministry of Finance, 1995

2 Economic Survey, FY 1995/96, HMGN, Ministry of Finance,1996

3 Economic Survey, FY 2002/03, HMGN, Ministry of Finance, 2003

4 Economic Review, Occasional paper April 2004, No 16

5 Quarterly Economic Bulletin, Nepal Rastra Bank, Mid-October 2003-Mid-January 2004, Vol XXXVIII

Table 2.7
Interest Rates in Nepal

Fiscal Years	Nominal Rate of Interest		Real Rate of Interest		Inflation (National Urban Consumer Price Index (base year 1995/96)
	Short Run*	Long Run**	Short Run	Long Run	
1975/76	4 0	8 5	4 6	9 1	-0 6
1976/77	4 0	10 0	1 4	7 4	2 6
1977/78	4 0	10 0	-7 4	-1 4	11 4
1978/79	5 0	10 0	1 6	6 6	3 4
1979/80	5 0	10 0	-4 3	0 7	9 3
1980/81	5 0	10 0	-8 6	-3 6	13 6
1981/82	5 0	10 5	-5 6	-0 1	10 6
1982/83	5 0	10 5	-9 0	-3 5	14 0
1983/84	5 0	10 5	-1 3	4 2	6 3
1984/85	5 0	13 0	1 0	9 0	4 0
1985/86	5 0	13 0	-10 9	-2 9	15.9
1986/87	5 0	13 0	-8 4	-0 4	13 4
1987/88	5 0	13 0	-5 9	2 1	10 9
1988/89	5.0	13 0	-3 3	4 7	8 3
1989/90	5 6	13 2	-4 0	3 5	9 7
1990/91	7 9	13 5	-1 8	3 8	9 7
1991/92	8 8	10 0	-12 3	-11.1	21 1
1992/93	9 0	13 3	0 2	4 5	8 8
1993/94	4 5	12 0	-4 5	3 0	9 0
1994/95	6 5	9 0	-1 2	1 3	7 7
1995/96	9 9	9 0	1 8	0 9	8 1
1996/97	11 6	9 0	3 5	0 9	8 1
1997/98	2 5	9 0	-5 8	0 7	8 3
1998/99	3 7	9 0	-7 7	-2 4	11 4
1999/00	4 3	8.8	0 8	5 3	3 5
2000/01	5 3	8 5	2 9	6 1	2 4
2001/02	5 0	8 5	2 1	5 6	2 9
2002/03	4 7	8 3	-0 1	3 5	4 8

Sources

1 International Financial Statistics yearbook (1993 and 2003), International Monetary Fund.

*Short term rate of interest measured by discount rate

**Long term rate of interest measured by Government bond yield

2. MONETARY POLICY IN NEPAL

This section includes the objectives and instruments of monetary policy and measurement of inflation in Nepal

(A) Objectives of Monetary Policy

The Nepal Rastra Bank (NRB)- the central bank of Nepal, has been formulating and implementing monetary policy since its establishment in 1956. Recently the new NRB Act, 2002 has replaced old NRB Act, 1956. According to the provisions of new NRB act, the bank should prepare and publish a monetary policy report for the general public every year. The objectives of the monetary policy as stated in the Act are to secure both domestic price and the balance of payment stability for sustainable economic growth and to maintain financial sector stability, soundness and credibility. NRB has narrowed down the goals of monetary policy since the early Nineties because of its mutually conflicting goals. Therefore, price stability has been set as the sole goal of monetary policy.

The conduct of monetary policy will be simple if causation of monetary instruments to ultimate goals is straight. However, uncertainty in the actual structure of the economy, sudden appearance of exogenous shocks, the changing nature of coefficient of the variables, etc. create a situation of uncertainty in the link between the instrument variables and the ultimate goal variables. Policy instrument variables (open market operation, bank rate and cash reserve ratio), ceteris paribus, affect intermediate target variables (monetary aggregates) through operating target variables (reserve money and net domestic asset of the central bank). Indicator variables (inter-bank rate and position of reserve money-information variables) show whether there is desired impact of instrument variables on operating target variables. Finally, the

intermediate target influences the final goal variables (economic growth and price stability).

At the time of the establishment of the Nepal Rastra Bank (NRB), Nepal's financial system was characterized by a single commercial bank in the financial system, dual currency system (NRs and IRs), low monetization, financial transaction limited with India, exchange rate volatility of NRs vs IRs, unorganized financial market, etc. In this background, NRB initiated its monetary policy to create a congenial atmosphere of monetary system in the economy so that the effective use of its desired monetary instruments will be advanced. Therefore, in the first decade of the Bank's establishment, it engaged in extending circulation of NRs by branch expansion, enactment of foreign exchange regulation act, 1963. By 1966, the Nepalese rupee was established as the sole legal tender, exchange rate with IRe was stabilized and foreign exchange reserves of the country had come under the NRB's control. Therefore, the NRB did not operate any monetary instruments in such an underdeveloped financial market till the mid-Sixties (Nepal Rastra Bank, 1996).

(B) Instruments of Monetary Policy

Nepal Rastra Bank, for the first time, chose direct monetary instruments. It brought into use the instruments like interest rate, refinance rate and cash reserve ratio (CRR) in 1966. Such instruments further extended to ceilings on individual bank credit, mandatory priority sector credit floor and differential interest rates affecting both the cost and availability of credit. These instruments were used with the objectives of increasing deposits in the banking sector, preventing capital flight to India, achieving higher economic growth through industrialization, attaining stability both in the balance of payment and price level and protecting the depositors' interest.

NRB adopted completely indirect monetary policy instruments in the early Nineties, though the process was started in 1984 with the launching of Structural Adjustment Facility (SAF) programme in FY1989/90. Under the indirect monetary policy instance, there is no direct control on both the volume (availability) and the price of loans (cost) of commercial banks. Market behavior is sought to be aligned with the monetary policy stance through the use of indirect monetary policy instruments such as bank rate and Open Market Operations (OMO).

The monetary policy instruments that the NRB has been using can be broadly classified into four categories: (A) interest rate, (B) Cash Reserve Requirement (CRR), (C) bank rate, and (D) Open Market Operation (OMO). Among these instruments, the interest rate instrument has been abolished since the early Nineties. The remaining three instruments have been used to control money supply.

(i) Interest Rate

In order to prevent capital outflows to India and to attract savings into the banking sector, NRB initiated a landmark step in the regulation of interest rate as a monetary policy instrument since 1966. Accordingly, the Bank directed the minimum interest rate on saving and fixed (one year) deposits at 4 percent and 6 percent respectively. The rate of interests on these deposits rose upward to 5 percent and 8.5 percent (however 8.75 percent for two-year fixed deposit) in 1971. These further rose to 6.5 percent and 10.5 percent in 1974. However, banks were given discretionary power in fixing lending rates before 1971 but were required to obtain prior approval of the NRB. In 1971, the NRB fixed lending rates ranging between 7 percent and 13 percent according to the purpose of the lending. The upper range of lending rate increased further to 15 percent in 1974. The call deposits rates ranged from 3.50 percent to 4.50 percent.

However, during the first half of the Seventies, the rate of growth in fixed and saving deposits of banks and financial institutions declined whereas the demand for credit was found to be continuously expanding. This resulted in acceleration of inflation in the economy. It has a direct impact on real rate of interest on deposits and hence discourages deposit mobilization. Therefore, in order to gear resource mobilization by providing positive real rate of deposit in the inflationary situation, a historical upward revision of all the deposits and lending rate was made in 1975. Saving rate increased from 6.5 percent to 8 percent and fixed deposit rate from 10.5 percent to 15 percent. The lending rate was also revised from 15 percent to 18 percent with a significant decline in the numbers of lending rates in two rates from nine rates earlier. This policy stance helped in improving the monetary situation.

The administered interest rates, as explained above, resulted not only in financial disintermediation but also in misallocation of scarce resources in the economy. Considering this, the NRB granted autonomy to commercial banks in offering the rates of interest on savings and time deposits to the extent of 1.5 and 1 percentage points respectively above the minimum level in 1984. The minimum interest rates were 8.5 percent and 12.5 percent on saving and one year fixed deposits respectively. Regarding the lending rates, they were allowed to fix at their discretion in all areas except credit to the priority sector where the maximum interest rate was at 15 percent. Commercial banks and financial institutions were granted complete freedom in fixing their own deposit and lending rates since 1989. Such deregulation is expected to affect lowering interest rate spread by the healthy competition in the determination of rate of interest in the bank and financial institutions. At present, interest rate as a monetary policy instrument is no longer in existence.

(ii) Cash Reserve Requirement (CRR)

In Nepal, cash reserve requirement for commercial banks was first introduced in 1966. The banks were required to maintain with the NRB a minimum amount of cash reserve equivalent to 8 percent of their total deposit liabilities. It further declined to 5 percent in 1974. However, it was included in Statutory Liquidity Requirement (SLR). According to the provision of SLR, commercial banks were directed to maintain 32 percent liquidity of total deposit liabilities. SLR declined to 27 percent and further to 25 percent in 1975 with constant 5 percent cash reserve. Since 1978, there is an increase in cash reserve while SLR is constant at 25 percent. It increased to 7 percent in 1978 and 9 percent in 1981. The 9 percent cash reserve was divided into 4 percent and 5 percent in vault cash and cash reserve in the NRB respectively. There was complete removal of SLR provision in 1986. Cash reserve further increased to 12 percent in 1990. Out of 12 percent, 4 percent was allotted for vault cash and 8 percent for cash reserve in NRB. SLR was reintroduced in 1992 with a sharp increase to 36 percent but with constant cash reserve ratio. It tended to decline by two percentage points and was fixed at 34 percent in the same year. NRB again completely abolished SLR instrument from 1993 due to its incompatibility with the thrust of liberalized financial system. However cash reserve ratio has remained as an important tool till now. Effective from FY2003/04, commercial banks are required to maintain 6 percent of their total domestic deposit liabilities at the NRB as compulsory reserve. Now banks are not required to maintain any reserve in their vault out of the 6 percent.

(iii) Bank Rate

Effective from 1967, NRB made available credit (refinance) facilities to commercial banks to encourage them to provide export and industrial credit at the rate of 6 percent per annum against fully secured export and industrial credit. Refinance rate was revised according to purpose of credit ranging

between 2 percent and 6 percent for short and long-term credit in FY1970/71. Effective from 1986, NRB provided refinance at 13 percent interest to the commercial banks up to 80 percent of the loans to the specified sectors and purposes, for which maximum lending rate was 15 percent.

In order to strengthen the effectiveness of monetary policy, NRB redesigned the rediscounting and refinancing facilities by offering three windows in order to maintain liquidity in the economy in 1989. These facilities consist of basic refinancing rate, selective refinancing rate and lender of the last resort. Under the basic rate, government securities with a maturity period of 45 days or less were to be rediscounted. The basic rate of 11 percent had been fixed to regulate the refinance and rediscounting facilities. It was revised upward to 13 percent in 1991 and again downward to 11 percent in 1993. Selective rate for the purpose of export financing, pre-export credit and priority sector lending activities had been fixed as par with the basic rate. The rediscount facility of treasury bills, government bonds and NRB bonds is fixed at 3 percent more than the latest maximum treasury bills auction rate. Lender of the last resort window works as a rescue mechanism for the commercial banks if and when they face severe liquidity crisis.

Central bank rediscounting of government papers under basic rate, priority sector lending, refinancing of other bills and loans of commercial banks under selective rate are all treated on an equal footing at a single rate of 9 percent since 1997. It is called refinancing rate/bank rate. The bank rate will be used as an indication of monetary policy stance as the open market interest rates, and repo rate. In order to stabilize the market rate of interest, the bank shows its interest to adjust bank rate with the market rate of interest. Bank rate has been gradually coming down to 5.5 percent at present.

(iv) Open Market Operation (OMO)

Open Market Operation (OMO) is an instrument of monetary control with the disposal of the central bank with the bank functioning as banker and manager of the public debt of the government. It is used for purchase and sale of government securities from/to to public and banks on its account. It sells new government securities "on tap" basis. Buying and selling securities from/to the public and banks increase/decrease high power money (currency with the public and bank reserves) thereby increase/decrease money supply through the money multiplier. This criterion is satisfied only if banks are fully loaned up (actual excess reserve equal to desired excess reserve). This instrument has a side effect too, through changes in the government securities' rates of interest. This instrument is based on reserve money approach to control of money supply and interest rate.

Since FY1989/90, the monetary policy stance in Nepal shifted from direct to indirect methods of control as part of financial liberalization policies. Open market operation has been an effective instrument for monetary management since early the Nineties. The NRB laid special emphasis on open market operations as the main policy instrument to contain monetary aggregates within the target level. In order to implement this, the NRB initially introduced three instruments, consisting of Treasury Bills (TBs), NRB bonds and National Savings Certificates (NSC), and established a primary market to transact them. These steps were taken before the institutional set up of secondary market and Repurchase Agreements (Repos) in 1994 and 1997 respectively.

Primary issuance of TBs through an auction system was introduced in 1988 for the first time in Nepal with the objectives of reducing the NRB's holdings of TBs and allowing market forces to determine the interest rate on TBs. The TBs rate so determined would reflect the total liquidity condition in the economy. As a result, excess liquidity in the economy was mopped up through regular

auction of short-term treasury bills. Treasury bills issued are of 28-day, 91-day, 182-day and 364-day at present. Auctions are held on a weekly basis. To strengthen OMOs, past overdrafts and Special Bonds, held by the NRB, have been converted into marketable treasury bills. This has enhanced the NRB's capability in conducting monetary policy through OMOs.

The excess liquidity as a result of foreign inflows, and excess resort to TBs and hence an effect of rise in inflation in 1991 motivated the NRB to search for a new instrument to ease the situation. Accordingly to the NRB issued its own bonds (NRB bond) in order to sterilize the impact of foreign inflows on money supply. As a result, the economy faced a liquidity crunch in late 1997, and the NRB gradually reduced the issuance of NRB bonds.

National Savings Certificates (NSC) is the instrument used to borrow from the non-banking sector in order to reduce government borrowing from the banking sector. Though it is not a short term instrument of monetary policy, it has helped mainly NRB's burden of overdrafts to the government. This instrument is still in use.

The NRB introduced the secondary market for the transactions of short term government TBs and NRB bonds in 1994. It created 100 percent liquidity to government debt instruments. Outright purchase and sales of treasury bills takes place in the secondary window. Repurchase Agreements (Repos), as an additional institution, set up in 1997 for the secondary transactions of treasury bills. The maturity period of Repos has to be between one to seven days. Under this window, ownership transfer of TBs does not take place. Commercial banks can borrow from the NRB against the collateral of treasury bills at any time. This has helped commercial banks manage their portfolio efficiently.

In conclusion, the objectives of the monetary policy as stated in the Nepal Rastra Bank Act, 2002, are to secure both domestic price and the balance of payment stability for sustainable economic growth and to maintain financial sector stability, soundness and credibility. NRB has narrowed down the goals of monetary policy since the early Nineties. Price stability is one of the major goals of monetary policy at present.

Since FY1989/90, the monetary policy stance in Nepal shifted from direct to indirect methods of control as part of financial liberalization policies. Open market operation has been an effective instrument for monetary management since early the Nineties. Among the instruments of the monetary policy, NRB, at present, uses instrument like cash reserve requirement, bank rate and open market operation to control money supply though the fluctuation of reserve money.

3. MEASUREMENT OF INFLATION IN NEPAL

(A) Introduction

In Nepal, there are three price indices that have been compiled, calculated and published. These are: GDP deflator, consumer Price Index (CPI) and wholesale price index (WPI). GDP implicit deflator has been produced by the Central Bureau of Statistics (CBS); a central statistical organization of the government of Nepal. The collection, computation and publication of WPI and CPI have been made by the Nepal Rastra Bank (NRB-the central bank of Nepal). The basic motive behind this is to facilitate formulation of monetary policy in the economy. The Bank started to compute WPI from the mid-Nineties, so that, there is a lack of long frequency of data. Therefore, CPI and GDP deflator are the only inflation variables for the analysis.

CPI is a major price index computed for the measurement of inflation (macro aggregate) in Nepal. It began to be available for Kathmandu (capital city) during the fifties but the index was unweighted. The unweighted price index for Kathmandu was taken as a proxy for the country. NRB started to compute weighted national urban consumer price index for the first time in FY1972/73 taking it as the base year. CPI basket is revised every ten years by conducting household budget surveys in order to revise the weight pattern of goods and services in order to make CPI more representative. The first survey was carried out in FY1972/73 and the second survey in FY1983/84. The basket currently used for constructing the CPI is that based on the household budget survey conducted in FY1995/96. The NRB has been publishing the new series of urban consumer price index with FY1995/96 as the base year.

(B) Scope of Data

Nepal's CPI is based on urban consumer price index having a coverage of 21 representative urban market centers. Such market centers have been distributed in all the geographical regions of the kingdom comprising Kathmandu Valley, the Hills, and Terai. Kathmandu valley consists of four market centers (Kahtmandu, Lalitpur, Bhaktapur and Thimi); the Hills consists of seven market centers (Ilan, Dhankuta, Hetauda, Pokhara, Banepa, Dipayal and Birendranagar); and Terai consists of ten market centers (Damak, Biratnagar, Lahan, Janakpur, Birgunj, Bharatpur, Siddharthanagar, Nepalgunj, Mahendranagar and Dhangadhi).

The national urban consumer price index is derived from regional urban consumer price indices by using the population weight of each region. The population weight is based on the 1995 population projection made by Central Bureau of Statistics (CBS). The total population covered by the index is estimated to be 2,675,149. It is almost 13 percent of the total population (20.83 million) in 1995. This population, however, is representative of the whole

population in order to calculate inflation in terms of its coverage of around 80 percent economic activities of the country as a whole which takes place in the aforementioned 21 market centers; which is considered as quite sufficient. Consideration of the population belonging to non-monetized and subsistence sector in calculating inflation, which is found in rural areas where goods are still exchanged in kind, has little relevance and meaning. Therefore, the NRB has focused only on the urban sector to derive representative inflation.

In order to develop the weighting factors for urban CPI, households were selected from the total sample excluding the following four categories:

a. Households falling on the first, second, ninth and tenth income decile,

b. One person households and households composed of more than eight persons,

c. Households which obtain more than 50 percent of the value of their consumption expenditures from home production or sources other than the market place, and

d. Households which have less than 50 percent of their income in cash.

Based on the above four criteria, the income range for households in the different urban regions was found as follows:

Kathmandu Valley	-	Rs. 4,200 – Rs. 13,498
Hills	-	Rs. 2,851 – Rs. 8,466
Terai	-	Rs. 2,570 – Rs. 8,570.

(C) Sources of Data

The sources of data for price indices are household budget surveys. At present the NRB has been using weights which are based on the household budget survey conducted during FY1995/96. In order to construct the price indices, information relating to the prices of the commodities is collected according to the fixed price collection cycle. At present 23 main commodities are included in the commodity basket of the CPI. On the basis of the importance of

particular commodities, the household budget survey has selected 301 commodities in Kathmandu Valley, 284 in the Hills and 267 in Terai for regular prices from main commodity basket. In order to specify item, size, weight and material used in the commodity, as well as selection of market areas and outlets for future price collection, the Bank conducts a market survey soon after the budget survey. At present, the total approximate number of price quotations are 5862, including sub-items in a particular item. However, house rents are collected once a year through house rent survey, which covers about 1612 households.

Prices are collected from about 900 retail stores and outlets. All prices used for index calculation are collected by personal visit to representative retail market outlets and shops selected during the survey period. The retail price of every item is collected from 3 outlets in order to capture the market trend. To compute the indices, prices are collected from those market centers where the consumers have to pay on the pricing day to purchase the specified goods and services, including VAT and excise duties. Retail prices of the items, which included in the commodity basket, are collected in a regular pricing cycle.

The frequencies of data collection for commodity prices are weekly (every Friday), monthly (last day of the month), quarterly (July/October/January and April), half yearly (July and January) and yearly (July). The bank collects the retail prices of consumer items from its 8 branches spread throughout the kingdom, in addition to its central office located in Kathmandu.

(D) Computation Method

NRB computes and publishes the national and regional consumer price indices every month. The time lag in publication is three to four weeks. The CPI is computed according to Laspeyre's weighted arithmetic average method. Laspeyre's method is biased upward because of its being the method of fixed

base. Any rise or fall in the price of a particular commodity results substitution of other commodities which is not considered by this fixed quantity base method. However, this method is superior to other methods in terms of simplicity and extent of availability of data. Therefore, this method is extensively used by many countries throughout the world.

The average price changes from the previous month to the current month are expressed in percentage terms (price relative) for each item. The expenditure weight adjusted to the previous month is multiplied by the current price relatives in order to get the expenditure weights forward to current month. Expenditures are aggregated for groups, subgroups and all items combined and then the aggregates are compared with the base year aggregates to calculate the index numbers.

$$I_t = \frac{\sum (Q_0 P_{t-1}) \frac{P_t}{P_{t-1}}}{\sum Q_0 P_0}$$

Where,

I_t = represents the index number for ith period with base period equal to 100.

$(Q_0 P_{t-1})$ = index expenditure weights adjusted for price change to the preceding period

$\frac{P_t}{P_{t-1}}$ = represents the change in price from the preceding period to the current period.

$Q_0 P_0$ = represents the index expenditure weight.

In the compilation of regional indices, the index numbers of separate towns are combined using the urbanized population weight to represent every town for which the indices are calculated. Similarly, the regional indices are combined

to get the national urban consumer price index using relative regional population weight.

If the product selected for pricing is no longer available, it is replaced or substituted by other similar products. While substituting an item, the prices of two periods are collected and the index is also adjusted accordingly. In case of seasonal items such as fresh vegetables and fruits, that are not available in the market during the off season period, the latest available prices are used for the index calculation until new prices are available. The owners who occupy dwelling services are excluded in the house rent survey.

Table: 2.8
Weights of Household Expenditure for Consumer Price Indices (CPI)
(Base Year 1995/96=100)

	Groups and sub-groups of items	National	Kathmandu	Hills	Terai
A	**Food and beverages**	**53.2**	**51.53**	**53.04**	**54.98**
1.	Grains and cereals products	18	16.37	17.76	19.76
a.	Rice and rice products	(14.16)	(13.05)	(13.86)	(15.42)
b.	Wheat and wheat flour		(0.62)	1.06)	(3.3)
2.	Pulses	2.73	2.14	2.66	3.35
3	Vegetables, fruits and nuts	7.89	8.27	7.61	7.63
4	Species	1.85	1.57	2.01	2.06
5	Meat, fish and eggs	5.21	5.28	5.48	5.02
6	Milk and milk products	4.05	4.18	3.94	3.98
7	Oil and ghee	3.07	2.62	3.77	3.23
8	Sugar and related products	1.21	1.36	1.15	1.09
9	Beverages	2.28	2.39	2.65	2.00
10	Restaurant Meals	6.91	7.35	6.01	6.86
B	**Other goods and services**	**46.8**	**48.47**	**46.96**	**45.02**
12	Cloths, clothing and sewing services	8.92	8.67	8.94	9.16
a.	Cloths	(2.28)	(1.83)	(2.54)	(2.63)
b.	Clothings	(5.75)	(6.14)	5.51)	(5.45)
13	Footwear	2.2	2.41	2.63	1.78
14	Housing	14.87	5.14	14.40	14.80
a.	Fuel, light and water	(5.92)	(4.95)	(5.92)	(6.91)
15	Transport and communication	4.03	4.21	3.31	4.16
16	Medical and personal care	8.03	7.86	8.39	8.04
17	Education, reading and recreation	7.09	8.33	7.78	5.54
18.	Tobacco and related products	1.66	1.85	1.51	1.54

Table 2.9
Number of Items in the Commodity Basket of CPI

Groups and sub-groups of commodities	Kathmandu	Hills	Terai
Food and Beverages	102	100	88
Cloth, Clothings and Sewing Services	54	52	52
Footwear	13	14	12
Housing:			
House Furnishing and Household goods	26	20	22
Fuel, Light and Water	7	7	7
Cleaning Supplies	9	6	12
House Rent	1	1	1
Transport and Communication	11	6	8
Medical and Personal Care	41	41	35
Education, Reading and Recreation	30	30	22
Tobacco	7	7	8
Total	**301**	**284**	**267**

Table 2.10
Data Collection Period and Commodities of CPI

Period	Commodities
Weekly (four times per month)	Rice, Pulses, Flour, Cereal Products, Oil and Ghee, Fresh Vegetables and Fruits, Spices, Milk and Milk Products, Sugar and Sweets.
Monthly	Meat, Fish and Eggs, Beverages, Restaurant Meals, Cloth, Clothing, Fuel, Cleaning Supplies and Religious items.
Quarterly	Private Transport, Hard Drinks, Footwear, Household Goods, Medicine and Personal Care items and Cigarettes.
Half Yearly	Sewing Charges, Public Transport, Medical and Personal Care and Reading Material
Yearly	Education Fees, Telephone, Water and Electricity Charges and House Rent.

In summing up, CPI is a major price index computed for the measurement of inflation (macro aggregate) in Nepal. The collection, computation and publication of CPI have been made by the Nepal Rastra Bank (NRB-the central bank of Nepal) to facilitate monetary policy formulation. Nepal's CPI is based on urban consumer price index having coverage of 21 representative urban market centers. Such market centers have been distributed in all the geographical regions of the kingdom comprising Kathmandu Valley, the Hills, and Terai.

CPI is derived from regional urban consumer price indices by using the population weight of each region. The total population covered by the index is estimated to be 2,675,149. It is almost 13 percent of the total population (20.83 million) in 1995. This population, however, is representative of the whole population because of its coverage of around 80 percent economic activities. For regular pricing, 852 commodities are selected in the commodity basket. Prices are collected from about 900 retail stores and outlets. CPI is computed according to Laspeyre's weighted arithmetic average method.