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# Role of Saving, Investment and Capital Formation in Economic Development: A Case of Nepal

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**Abstract**

*This paper aims at determining the role and impact of saving, investment and capital formation in economic development of Nepal. The macro economic variables are introduced via an extension of the econometric model, which explicitly includes Almon (1965) Polynomial Lag Model. The empirical results have been estimated by using annual data for the period of 1974/75 to 2000/01 at current prices and in real terms with the entire study period divided into different sub-periods. The study revealed the strong role and impact of saving, investment and capital formation on economic development of Nepal. The estimated regression equations showed that current and past values of saving, investment and capital formation have positive impact on economic development but the current values have the largest impact. The study also showed that the role played by investment in economic development is weak while the role played by saving and capital formation is strong.*

## 1. Introduction

Saving is income not consumed (Eatwell et al.: 1987, 336). It is one of the most important and perhaps the chief sources of investment. In developing countries, about 45 percent of the incremental saving is invested domestically, while in developed countries about 75 percent of the incremental saving is invested domestically (Koirala: 1991,39). This suggests that capital is more mobile in developing countries than in developed countries. Savings are of great significance in a country's development. While high saving results in high economic growth rate, rapid development leads in turn to high savings. Nepal's savings rate is lower as compared to other developing countries, however, even to achieve 5 to 6 percent economic growth rate, more than 25 percent annual investment of GDP is considered necessary (NPC: 1998,81). As the country's current domestic savings are about 14 percent, the economic resources are short

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by nearly 11 percent in proportion of the GDP (NPC: 1998,81). The situation is such that huge portion of investment has still to be made with external resources.

The savings growth rate depends, among others, on the level of country's per capita income and its growth rate, population growth rate, interest rate on savings or on bank accounts, banking and financial facilities and net factor income etc. The national income is the measure of the money value of goods and services available, in a year, to the nation from the economic activities. Saving is the excess of income over consumption. In other words, it is the part of the income, which is left over after consumption. In addition, investment is the expenditure made for the formation of the fixed capital. Mobilization of saving implies transfer of resources from surplus spending units to deficit units. In this connection, financial intermediaries play an important role in mobilization of voluntary saving. The amount of saving of a typical household in Nepal is small because the people have limited opportunities for investment. They prefer to spend savings on commodities rather than on financial assets. This restricts the process of financial intermediation, which might otherwise bring benefits such as reduction of investment risk and increase in liquidity. When capital is highly mobile internationally, saving from abroad can also finance the investment needed at home. When capital is not mobile internationally, saving from abroad will limit investment at home.

On the other side, capital formation refers to the creation of physical productive facilities such as buildings, tools, equipments and roads (Seth: 1979,783). The process of adding to the amount or stock of the real assets produces growth in the economy. It means increasing a country's stock of real capital. It implies additions to the existing supply of capital goods in a country. It represents an addition of new capital stock to existing stock after deducting depreciation, damage and other physical deterioration of the existing capital stock. Economic progress in country depends upon its rate of capital formation. Hence, a key factor in the development of an economy is the mobilization of domestic resources. In the process of capital formation, the capacity to save by certain classes of people and institution becomes quite important. These people have varied asset-preferences, which change from time to time. The need of entrepreneurs who actually use savings for productive purposes also varies over time.

Capital formation is regarded as one of the important and principal factors in economic development because it leads to the expansion of market. A rapid rate of capital formation gradually dispense with the need for foreign aid. In fact, capital formation helps in making a country self-sufficient and reduces the burden of foreign aid. The process of capital formation helps in raising national income. Therefore, capital formation is a necessary pre-requisite for economic growth. Thus, the study devoted to saving, investment and capital formation may be very rewarding.

The major objective of this study is to determine the role and impact of saving, investment and capital formation in economic development of Nepal. The study has been organized into four sections. Section 1 of the study is devoted to review of some major literature while section 2 deals with methodological aspects, mainly, nature and sources of data and models to be estimated in this study. The empirical results of the study are presented in section 3. Finally, section 4 indicates summary and major conclusions of the study.

## 2. Review of Literature

The analysis of investment and its relation with growth has been one of the most strategic aspects of development planning. With a view to testing the theoretical presumption regarding the relationship between investment and growth, many authors have resorted to empirical studies in the context of both developed and developing countries. Modigliani's work (1970) based on a mixed sample of 36 countries showed a strong relation between output growth and the proportion of country's income invested. A similar result was obtained by Sommers and Suits (1971), taking a sample of 100 countries for the year 1966 and regressing rate of growth of GNP on investment ratio and population growth. The results show that the growth rate of GNP is influenced positively by the fraction of GNP invested and negatively by population growth. The same pattern of result is evident even when the sample is divided into two sub-samples of rich and poor countries based on per capita income level.

Robinson (1971), taking 39 less developed countries for the period 1958-66, found that growth rate is significantly influenced by the investment ratio. The coefficients of investment ratio took values ranging between 0.08 and 0.19 and were statistically significant. In his specification, the rate of growth of labour force was also included as additional explanatory variables, but it did not appear to be significant. Similarly, Thirlwall (1974) also found significant positive relation between the growth of income and investment ratio in a sample of 68 developed and developing countries for the period 1958-68. This study also worked with two sub-samples and found that the impact of investment on growth was higher in the developed countries group than in the developing countries group. From the above review of empirical studies, it thus seems that there is a significant relationship between growth and investment.

The empirical literature has paid a considerable attention to analyzing the relationship between growth rate and investment. The findings, in general, revealed strong positive association between rate of growth and investment. This may also be indicative of the fact that a certain stage has to be reached before the investment rates play an important role in the growth of output. However, it is found that there is a significant positive relationship between GDP and investment. The lagged values of investment are also found to be important in determining GDP, but it is the current value, which has the largest impact. This would imply that fresh investments activate the on-going projects that directly or indirectly contribute to raise the level of GDP.

Capital formation is regarded as one of the most important and principal factors in economic development. A strong association between capital accumulation and growth was found by Pesmazoglu (1972) in a sample of 43 countries over the period 1957-68 by using econometric models. It is the capital formation, which helps to remove market imperfection by the creation of economic and social overhead capital. Thus, the capital formation is a necessary pre-requisite of economic growth.

The study by Poudyal (1988a) verified the above-mentioned results in the context of Nepal. It revealed that the GDP is influenced not only by the current values of investment but also by past values. While saving positively influenced GDP, and it negatively influenced tax revenue. It is also revealed that investment significantly influenced GDP, foreign aid and imports.

The general conclusion that emerges from the above-mentioned studies is that saving, investment and capital formation are important in determining GDP. However, pertinent question arises as to what extent these findings are still relevant in the present day context. Many changes have taken place after the completion of these studies. In order to verify these results, this study is directed towards assessing the role and impact of saving, investment and capital formation on economic development of Nepal.

## 3. Research Methodology

### 3.1 DATA

This study is based on secondary data, which have been collected from various sources covering a period of 27 years, i.e., from 1974/75 to 2000/01. The necessary data and information have been collected on macro-economic variables such as, saving, investment, capital formation and gross domestic product. The major sources of these data and information are as follows:

- Economic Survey, FY 1994/95 and FY 2000/01, Ministry of Finance, HMG/N.
- National Accounts of Nepal 2001, Central Bureau of Statistics, CBS, HMG/N.
- Various Plan Documents, National Planning Commission, HMG/N.
- Quarterly Economic Bulletin, Nepal Rastra Bank, Various Issues.
- Statistical Pocket Book 2000, Central Bureau of Statistics, CBS, HMG/N.

### 3.2 The Model

This study attempts to assess the role and impact of saving, investment and capital formation on economic development by estimating various models. The theoretical statement of the models is that the gross domestic product (GDP) may be regarded as subject to the constraints of saving (S), investment (I) and capital formation (CF). The theoretical statement may be framed as,

$$GDP = f(S, I, CF) \qquad ...(1)$$

The equation to be estimated has therefore been specified as,

$$GDP = a + b_1 S + b_2 I + b_3 CF + U_i \qquad ...(2)$$

Where $U_i$ = Error term or disturbance

Although the lag models are extensively used in econometric analysis, all economic problems may not correspond to the assumption of monotonically decreasing lag pattern. There are some situations where the effect of the lagged independent variable may follow cyclical pattern, the coefficient increaes gradually before reaching a peak and then decreases. This type of lag pattern can be taken care of by using the Almon (1965) Polynomial Lag Model. The Almon Lag Scheme is expressed as a linear function of the current and the K previous values of X, namely,

$$Y_t = a + b_0 X_t + b_1 X_{t-1} + b_2 X_{t-2} + ... + b_t X_{t-k} + U_t \qquad ...(3)$$

Whereas the coefficient $b_0$ is known as the short run, or impact multiplier because it measures the change in the mean value of Y following a unit change in X in the same period, $b_1, b_2 \ldots b_t$ are called delay or interim multipliers because they measure the impact on mean Y of a unit changes in X in various previous time periods.

The relationship between GDP and saving, investment and capital formation is analyzed within the framework of Almon Polynomial Lag Scheme, as these relations are expected to follow an invested V-type lag pattern. Five-Years length of lag has been taken for applying the Almon Lag Scheme between the specified variables. The reason for this choice of lag length is that periodic plans (except the second) in Nepal are worked out for time horizon of 5 years. All the macro economic variables have been converted into real terms by means of national urban consumer price index and then regression run. In this study, statistical parameters are calculated with the help of computer via SPSS of the regression models.

## 4. Empirical Results

One of the important indicators of economic development is the growth rate of GDP. Although there are some other indicators of economic development, the overall effect of development efforts is examined in terms of growth in GDP. The growth rate of GDP alone does not truly reflect the level of economic progress; it is widely used as a measure of economic development.

### 4.1 Estimates at Current Prices

First of all, the time series linear of the model show the impact of saving, investment and capital formation on economic development as presented in Table 1.

**Table 1**
**Regression of Gross Domestic Product ($GDP_C$) on Saving ($S_C$) and Capital Formation ($CF_C$) at Current Prices**

Regression Equation: $GDP_C = a + b_1S_C + b_2I_C + b_3CF_C$ ...(4)

| Dependent Variable | Intercept | Regression Coefficient of | | | $R^2$ | SEE | F | Eq. No. |
|---|---|---|---|---|---|---|---|---|
| | | $S_C$ | $I_C$ | $CF_C$ | | | | |
| $GDP_C$ | 8973<br>(2.91) | 3.26<br>(3.51)* | <br>(3.84)* | 2.52 | 0.993 | 10547 | 1777 | I |
| $GDP_C$ | 11480<br>(3.56) | 4.00<br>(3.91)* | 1.71<br>(2.76)* | 0.992 | 11672 | 1449 | II | |
| $GDP_C$ | 5727<br>(1.53) | <br>(0.32) | 0.42<br>(2.81)* | 4.33 | 0.990 | 12950 | 1175 | III |

*Source: Appendix 1.*

Notes: (I) Figures in the parentheses are t-values.
(2)* indicates that the results are significant at 1 percent level.

The overall results presented in equations I to III of Table 1 are encouraging. The signs of all the coefficients are as expected. It presents the usual simple linear relationship between GDP and saving, investment and capital formation. These results show the customary strong saving, investment and capital formation effect on GDP. In the equation I, one rupee increase in saving leads to about Rs. 3.26 increase in GDP at current prices holding other variables constant. The same is noticed to be Rs. 4.00 in equation II. On the other side, one rupee increase in investment resulted in only Rs. 1.71 increase in GDP, holding saving and capital formation constant. The same is noticed to be Rs. 0.42 in equation III. Similarly, one rupee increase in capital formation leads to about Rs. 2.52 increase in GDP, holding all other independent variables constant. The same is noticed to be Rs. 4.33 equation III. The regression equations presented above show the strong role-played by saving and capital formation and weak role-played by investment.

It may now be interesting to see the results when entire-period of the study are divided into four sub-periods. Table 2 presents the regression results of gross domestic product on saving, investment and capital formation at current prices for various time-periods.

The results presented in Table 2 indicate that the estimated coefficients have expected signs of saving and capital formation for all the periods. The same is the case with investment for all the periods except the 1974/75 to 2000/01 period. The goodness of fit of the model is also satisfactory.

**Table 2**

**Regression of Gross Domestic Product ($GDP_C$) on Saving ($S_C$), Investment ($I_C$) and Capital Formation ($CF_C$) at Current Prices for Various Time-Periods**

Regression Equation: $GDP_C = a + b_1 S_C + b_2 I_C + b_3 CF_C$ ...(5)

| Time Periods | Intercept | Regression Coefficient of | | | $R^2$ | SEE | F | Eq. No. |
|---|---|---|---|---|---|---|---|---|
| | | $S_C$ | $I_C$ | $CF_C$ | | | | |
| 1974/75-1982/83 | 4089 (1.50) | 1.66 (0.97) | 1.54 (0.72) | 2.33 (1.20) | 0.98 | 1181 | 74 | I |
| 1983/84-2000/01 | 16312 (2.47) | 4.14 (3.23)* | 0.34 (0.26) | 2.19 (1.28) | 0.99 | 12800 | 493 | II |
| 1992/93-2000/01 | -33357 (2.26) | 4.74 (5.67)* | 1.95 (2.31)** | 4.41 (3.16)** | 0.99 | 6545 | 412 | III |
| 1974/75-2000/01 | 8650 (2.70) | 3.39 (3.47)* | -0.56 (0.50) | 3.10 (2.34)** | 0.99 | 10715 | 1148 | IV |

*Source: Appendix 1.*

Notes: (I) Figures in the parentheses are t-values.

(2)* and ** indicate that the results are significant at 1 percent and 5 percent level respectively.

Similarly, it may be interesting to see the results obtained by applying the Almon Lag Scheme. Saving, investment and capital formation contribute to GDP in a lagged pattern. The Almon Lag Scheme has been used to test the lag structure of the effects of saving, investment and capital formation on GDP. The results are presented in Table 3.

**Table 3**

**Regression of Gross Domestic Product ($GDP_C$) on Saving ($S_C$), and its one to five year lag values; $GDP_C$ on Investment ($I_C$), and its one to five year lag values; and $GDP_C$ on Capital Formation ($CF_C$), and its one to five year lag values at Current Prices for the period of 1974/75 to 2000/01**

**Regression Equations:**

$$GDP_C = a + b_1 S_{Ct} + b_2 S_{Ct-1} + b_3 S_{Ct-2} + b_4 S_{Ct-3} + b_5 S_{Ct-4} + b_6 S_{Ct-5} \quad ...(6)$$

$$GDP_C = a + b_1 I_{Ct} + b_2 I_{Ct-1} + b_3 I_{Ct-2} + b_4 I_{Ct-3} + b_5 I_{Ct-4} + b_6 I_{Ct-5} \quad ...(7)$$

$$GDP_C = a + b_1 CF_{Ct} + b_2 CF_{Ct-1} + b_3 CF_{Ct-2} + b_4 CF_{Ct-3} + b_5 CF_{Ct-4} + b_6 CF_{Ct-5} \quad ...(8)$$

| a | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $b_5$ | $b_6$ | $R^2$ | SEE | F | Eq. No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 6038 (5.75) | 1.63 (3.30)* | 1.68 (2.52)** | -0.26 (0.41) | 0.43 (0.66) | 0.72 (1.42) | 1.15 (3.56)* | 0.999 | 3181 | 1819 | 6 |
| 6880 (9.41) | 1.11 (4.06)* | 0.92 (2.61)** | 0.44 (1.43) | 0.23 (1.17) | 0.60 (3.57)* | -0.01 (0.09) | 0.999 | 2063 | 4328 | 7 |
| 5389 (5.41) | 2.21 (4.30)* | 1.10 (1.59) | -0.10 (0.16) | -0.04 (0.09) | 0.57 (1.23) | 0.24 (0.84) | 0.999 | 2651 | 2619 | 8 |

Source: Appendix 1.

Notes: (I) Figures in the parentheses are t-values.

(2)* and ** indicate that the results are significant at 1 percent and 5 percent level respectively.

The coefficients of saving, investment and capital formation are all positive except two-year lag value of saving, five-year lag value of investment and two-year and three-year lag values of capital formation, which are statistically insignificant. It means that GDP is influenced not only by the current values of saving, investment and capital formation but also by past values. However, current values of saving, investment and capital formation have the highest and significant impact on GDP.

The results of present study are more or less similar to the results of earlier study by Poudyal (1988a) in the case of Almon Lag Scheme. The regression coefficients of these lag values were positive in earlier study whereas some of these coefficients are negative in the present study. Besides, the present study has provided more statistically significant results.

### 4.2 Estimates in Real Terms

It may now be interesting to see the results when values of all the variables have been deflated into real terms by means of national urban consumer price index. The time series linear regression results of the model showing the role and impact of saving, investment and capital formation on economic development are presented in Table 4 for various time-periods.

**Table 4**

**Regression of Gross Domestic Product ($GDP_R$) on Saving ($S_R$), Investment ($I_R$) and Capital Formation ($CF_R$) in real Terms for Various Time-Periods**

Regression Equation: $GDP_R = a + b_1 S_R + b_2 I_R + b_3 CF_R$ ...(9)

| Time Periods | Intercept | Regression Coefficient of | | | $R^2$ | SEE | F | Eq. No. |
|---|---|---|---|---|---|---|---|---|
| | | $S_R$ | $I_R$ | $CF_R$ | | | | |
| 1974/75-1982/83 | 72518 (3.40) | 0.69 (0.60) | 0.85 (0.45) | 0.97 (0.55) | 0.60 | 4780 | 2.45 | I |
| 1983/84-2000/01 | 61150 (4.07) | 1.57 (1.23) | 1.20 (0.78) | 1.23 (0.61) | 0.93 | 14143 | 66 | II |
| 1992/93-2000/01 | -59649 (0.57) | 5.67 (5.10)* | 1.58 (0.71) | 3.88 (0.91) | 0.92 | 8688 | 19 | III |
| 1974/75-2000-01 | 47978 (7.42) | 1.07 (1.33) | 1.29 (1.05) | 1.29 (1.22) | 0.97 | 11890 | 224 | IV |

*Source: Appendix 3.*

Notes: (I) Figures in parentheses are t-values.

(2)* indicates that the results are significant at 1 percent level.

More precisely, during the 1974/75 to 1982/83 period, the estimated coefficients have expected signs for saving, investment and capital formation but these are statistically not significant. During the 1983/84 to 2000/01 period, the estimated coefficients have expected signs for saving, investment and capital formation that are statistically not significant. On the other side, during the 1992/93 to 2000/01 period, all the estimated regression coefficients have expected signs but only the coefficient of saving is significant. Lastly, during the 1974/75 to 2000/01 period (i.e., entire period of the study), all the estimated coefficients have expected signs for saving, investment and capital formation. The coefficients are, however, statistically not significant.

Similarly, it may now be interesting to see the results by applying the Almon Lag Scheme. It is hypothesized that the saving, investment and capital formation contribute to GDP in a lagged pattern. The estimates of Almon Lag Scheme to test the lag structure of the effects of saving, investment and capital formation on GDP in real terms are presented in Table 5.

**Table 5**

**Regression of Gross Domestic Product ($GDP_R$) on Saving ($S_R$), and its on to five year lag values; $GDP_R$ on Investment ($I_R$), and its one to five year lag values; and $GDP_R$ on Capital Formation ($CF_R$) and its one to five year lag values in Real Terms for the Period of 1974/75 to 2000/01**

Regression Equations:

$GDP_R = a + b_1 S_{Rt} + b_3 S_{Rt-2} + b_4 S_{Rt-3} + b_5 S_{Rt-4} + b_6 S_{Rt-5}$ ...(10)

$GDP_R = a + b_1 I_{Rt} + b_3 I_{Rt-2} + b_4 I_{Rt-3} + b_5 I_{Rt-4} + b_6 I_{Rt-5}$ ...(11)

$GDP_R = a + b_1 CF_{Rt} + b_3 CF_{Rt-2} + b_4 CF_{Rt-3} + b_5 CF_{Rt-4} + b_6 CF_{Rt-5}$ ...(12)

| a | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $b_5$ | $b_6$ | $R^2$ | SEE | F | Eq. No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 45224 (11.33) | 2.06 (3.82)* | 0.02 (0.03) | -0.19 (0.29) | 1.18 (1.80) | 0.52 (0.82) | 1.72 (3.63)* | 0.98 | 6855 | 162 | 10 |
| 49931 (13.62) | 1.32 (2.63)** | 0.61 (1.13) | 0.05 (0.09) | 0.48 (1.15) | 0.42 (1.07) | 0. 19 (0.61) | 0.99 | 6108 | 205 | 11 |
| 43332 (9.57) | 2.04 (2.74)** | 0.63 (0.84) | -0.37 (0.41) | 0.52 (0.76) | 0.39 (0.59) | 0.42 (0.82) | 0.98 | 6949 | 158 | 12 |

Source: Appendix 3.

Notes: (1) figure in parentheses are t-values.

(2)* and ** indicate that the results are significant at 1 percent and 5 percent level respectively.

The results presented in Table 5 indicate that the estimated coefficients have expected signs for all equations except the coefficients of two year lag value of saving and two year lag value of capital formation. The time series linear regression results show a positive relationship between GDP and saving, investment and capital formation at current prices and in real terms as well. The lagged values of saving, investment and capital formation are also found to be important in determining GDP, but the current values have the largest impact. As a whole, this study suggests that the saving, investment and capital formation play significant role in determining the level of GDP.

## 5. Summary and Conclusions

The purpose of this paper has been to investigate the role and impact of saving, investment and capital formation on economic development. This study was based on secondary data only. The necessary data on saving, investment, capital formation and gross domestic product has been collected for the period of 1974/75 to 2000/01. The role and impact of saving, investment and capital formation on economic development were accomplished by using various regression models. The regression equations used in this study have been estimated at current prices as well as in real terms with the entire study period divided into different sub-periods.

The results presented in this paper suggest that in all cases GDP is significantly associated with saving, investment and capital formation both at current prices and in real terms. The results of the empirical analysis lead to three important conclusions. *First*, saving, investment and capital formation have positive impact on economic development. *Second*, the current values and past values of saving, investment and capital formation have positive impact on economic development but the current values have the largest impact. *Third*, there is a strong role-played by saving and capital formation economic development while weak role played by investment.

**Appendix-1**

**Basic Data Relating to Saving ($S_C$), Investment ($I_C$), Capital Formation ($CF_C$) and Gross Domestic Product ($GDP_C$) for the Period of 1974/75 to 2000/01 at Current Prices**

(Rs. in Million)

| Year | $S_C$ | $I_C$ | $CF_C$ | $GDP_C$ |
|---|---|---|---|---|
| 1974/75 | 1662 | 2402 | 2223 | 16571 |
| 1975/76 | 2040 | 2632 | 2443 | 17394 |
| 1976/77 | 2332 | 2768 | 2580 | 17280 |
| 1977/78 | 2540 | 3507 | 3294 | 19732 |
| 1978/79 | 2585 | 3514 | 3263 | 22215 |
| 1979/80 | 2591 | 4270 | 3681 | 23351 |
| 1980/81 | 2974 | 4808 | 4299 | 27307 |
| 1981/82 | 3088 | 5314 | 5465 | 30988 |
| 1982/83 | 2887 | 6628 | 6576 | 33761 |
| 1983/84 | 3886 | 7351 | 6907 | 39390 |
| 1984/85 | 6239 | 10184 | 9386 | 46587 |
| 1985/86 | 5887 | 10599 | 9431 | 55734 |
| 1986/87 | 7321 | 12898 | 11825 | 63864 |
| 1987/88 | 7604 | 15237 | 13414 | 76906 |
| 1988/89 | 10150 | 19415 | 16392 | 89270 |
| 1989/90 | 8143 | 19076 | 17002 | 103416 |
| 1990/91 | 11514 | 25074 | 22780 | 120370 |
| 1991/92 | 16207 | 31619 | 29277 | 149487 |
| 1992/93 | 23172 | 39653 | 37278 | 171474 |
| 1993/94 | 29220 | 44644 | 42032 | 199272 |
| 1994/95 | 32465 | 55231 | 48370 | 219175 |
| 1995/96 | 34426 | 68017 | 56081 | 248913 |
| 1996/97 | 39162 | 71084 | 60794 | 280513 |
| 1997/98 | 41438 | 74728 | 65375 | 300845 |
| 1998/99 | 46563 | 70061 | 65269 | 342036 |
| 1999/00 | 55507 | 88402 | 73309 | 378033 |
| 2000/01 | 58138+ | 93917+ | 78091+ | 408218+ |

*Sources: Central Bureau of Statistics, HMG/N, Kathmandu.*
*Notes: + = Revised Estimates.*

## Appendix-2

### National Urban Consumer Price Index

**Base Year: 1995/96 = 100**

| Year | Overall Index |
|---|---|
| 1974/75 | 15.5 |
| 1975/76 | 15.4 |
| 1976/77 | 15.8 |
| 1977/78 | 17.6 |
| 1978/79 | 18.2 |
| 1979/80 | 19.9 |
| 1980/81 | 22.6 |
| 1981/82 | 25.0 |
| 1982/83 | 28.5 |
| 1983/84 | 30.3 |
| 1984/85 | 31.5 |
| 1985/86 | 36.5 |
| 1986/87 | 41.4 |
| 1987/88 | 45.9 |
| 1988/89 | 49.7 |
| 1989/90 | 54.5 |
| 1990/91 | 59.8 |
| 1991/92 | 72.4 |
| 1992/93 | 78.8 |
| 1993/94 | 85.9 |
| 1994/95 | 92.5 |
| 1995/96 | 100.0 |
| 1996/97 | 108.1 |
| 1997/98 | 117.1 |
| 1998/99 | 130.4 |
| 1999/00 | 134.8 |
| 2000/01 | 138.1 |

*Source: NRB, Quarterly Economic Bulletin, Vol. XXXV, No. 3-4, Mid-July 2001,44-45.*

## Appendix-3

**Basic Data Relating to Saving ($S_R$), Investment ($I_R$), Capital Formation ($CF_R$) and Gross Domestic Product ($GDP_R$) for the Period of 1974/75 to 2000/01 in Real Terms**

(Rs. in Million)

| Year | $S_R$ | $I_R$ | $CF_R$ | $GDP_R$ |
|---|---|---|---|---|
| 1974/75 | 10723 | 15497 | 14342 | 106910 |
| 1975/76 | 13247 | 17091 | 15864 | 112948 |
| 1976/77 | 14760 | 17519 | 16329 | 109367 |
| 1977/78 | 14432 | 19926 | 18716 | 112114 |
| 1978/79 | 14203 | 19308 | 17929 | 122060 |
| 1979/80 | 13020 | 21457 | 18497 | 117342 |
| 1980/81 | 13160 | 21274 | 19022 | 120827 |
| 1981/82 | 12352 | 21256 | 21860 | 123952 |
| 1982/83 | 10130 | 23256 | 23074 | 118460 |
| 1983/84 | 12825 | 24261 | 22795 | 130000 |
| 1984/85 | 19806 | 32330 | 29797 | 147895 |
| 1985/86 | 16129 | 29038 | 25838 | 152696 |
| 1986/87 | 17684 | 31155 | 28563 | 154261 |
| 1987/88 | 16566 | 33196 | 29224 | 167551 |
| 1988/89 | 20423 | 39064 | 32982 | 179618 |
| 1989/90 | 14941 | 35002 | 31196 | 189754 |
| 1990/91 | 19254 | 41930 | 38094 | 201288 |
| 1991/92 | 22385 | 43673 | 40438 | 206474 |
| 1992/93 | 29406 | 50321 | 47307 | 217607 |
| 1993/94 | 34016 | 51972 | 48931 | 231981 |
| 1994/95 | 35097 | 59709 | 52292 | 236946 |
| 1995/96 | 34426 | 68017 | 56081 | 248913 |
| 1996/97 | 36228 | 65758 | 56239 | 259494 |
| 1997/98 | 35387 | 63816 | 55828 | 256913 |
| 1998/99 | 35708 | 53728 | 50053 | 262293 |
| 1999/00 | 41177 | 65580 | 54384 | 280440 |
| 2000/01 | 42098 | 68007 | 56547 | 295596 |

*Source: Appendix 1 and 2.*

**References**

Almon, S. (1965). "The Distributed Lag Between Capital Appropriations and Expenditures", *Econometrica*, (January 1965), 178-196.

CBS (2002). *National Accounts of Nepal 2001*, Central Bureau of Statistics, HMG/N, Kathmandu.

____ (2002). *Statistical Pocket Book 2000*. Central Bureau of Statistics, HMG/N, Kathmandu.

Eatwell, J. et al. (1987). *The Palgrave A Dictionary of Economics*. The Macmillion Press Ltd., London.

Gomes, Joao F. (2001). "Financing Investment", *American Economic Review*, Vol. 91, No. 5, 1263-1285.

Koirala, Govinda P. (1991). "Domestic Savings and International Capital Flows in Developed and Developing Countries", *The Economic Journal of Nepal*, Vol. 14, No. 3, Issues 55, 39-40.

Mikesell, F.M. and J.E. Zinser (1973). "The Nature of the Savings Function in Developing Countries: A Survey of the Theoretical and Empirical Literature", *Journal of Economic Literature*, 1-26.

Modigliani, F. (1970). "The Life Cycle Hypothesis of Saving and Inter-country Differences in the Savings Ratio" in W.A. Eltis, M.F.G. Scott and N.J. Wolfe (eds.), *Induction, Trade and Growth: Essay in Honour of Sir Roy Harrod*, Oxford University Press, London.

MOF, (1995). *Economic Survey 1994/95*. Ministry of Finance, HMG/N, Kathmandu, Nepal.

____, (2001). *Economic Survey FY 2000/01*. Ministry of Finance, HMG/N, Kathmandu, Nepal.

NPC, (1992), *The Eight Plan (1992-1997)*, National Planning Commission, HMG/N. Kathmandu

____, The Ninth Plan (1997-2002), (Kathmandu:National Planning Commission, NPC, HMG/N, July 1998).

NRB, (2001). *Quarterly Economic Bulletin*. Nepal Rastra Bank, NRB, Kathmandu, Nepal.

Pesmazoglu, J. (1972). "Growth, Investment and Saving Ratios: Some Long and Medium Terms Association by Groups of Countries", *Bulletin of the Oxford Institute of Economics and Statistics*, 309-328.

Poudyal, S.R. (1988a). *Foreign Trade, Aid and Development in Nepal*. Commonwealth Publishers, New Delhi.

____, (1988b). "Investment and Income in Nepal", *The Economic Journal of Nepal*, Vol. 11, No.1, Issue 41, 38-59.

Robinson, S. (1971). "Sources of Growth in Less Developed Countries: A Cross-Section Study", *Quarterly Journal of Economics*, (August 1971), 339-408.

Seth, M L. (1979). *Principles of Economics: Micro and Macro Economics*. Lakshmi Narain Agrawal Educational Publishers, Agra.

Sommers, P.M. and D.B. Suits (1971). "A Cross Section Model of Economic Growth", *Review of Economics and Statistics*. (May 1971), 121-139.

Swamy, S. (1968). "A Dynamic, Personal Savings Functions and its Long Run Implications", *Review of Economics and Statistics*, 111-116.

Tesar, L. (1991). "Savings, Investment ad International Capital Flows", *Journal of International Economics*, Vol. 31. No.1-2, 55-78.

Thirlwall, A.P. (1974). *Inflation, Savings and Growth in Developing Economics*. Macmillan, London.

Weisskopf, T.F. (1972). "The Impact of Foreign Capital Inflow on Domestic Savings in Underdeveloped Countries", *Journal of International Economics*, Vol. 2, 25-38.