I. Introduction

The rate of inflation in Nigeria has increased steadily and markedly since independence in 1960. During the period following independence (1965-75), Nigeria's rate of inflation was about equal to that of its trading partners, averaging 10 percent annually (Chart 1). In the ensuing decade (1975-85), the respective rates of inflation diverged dramatically, as Nigeria's average annual rate nearly doubled, to 18 percent, while that of the trading partners narrowed significantly, to 4 percent. These trends continued between 1985 and 1990, as Nigeria's annual average rose to 24 percent while the trading partners posted an average rate of 13 percent. More recently, since late 1990, Nigeria has experienced a period of stagflation. By the end of 1993, inflation had reached 60 percent and real per capita income growth had stalled.

This paper reviews previous empirical studies regarding the determinants of inflation in Nigeria, analyzes the dominant factors influencing inflation, presents the empirical results of a reduced-form elasticities model, and discusses the policy implications of the empirical results.

II. Composition and Structure of the Consumer Price Index

The official consumer price index (CPI) is based on a composite of urban and rural price data compiled monthly by the Federal Office of Statistics (FOS) and reflects household expenditure patterns in the 1985/86 National Consumer Survey.

Composite food prices dominate the CPI, representing 69 percent of the total market basket (Table 1), with staple food commodities alone representing 42 percent. Consequently, factors affecting food prices dominate movements in the CPI (Chart 1). These factors include agroclimatic conditions, wages, domestic inputs, and import prices, with rainfall playing a key role. Subsistence agriculture, which is not included in marketed production, plays an important role in marginal supply and demand during periods of drought or abundant rainfall. Imports, while important in the economy as a whole, have tended to be less important in influencing the CPI since household consumption, which is predominantly food related, has a low import content.

1/ Price data are collected for 256 items in 83 urban towns and 312 rural centers on a weekly or monthly basis. The FOS compiles the data monthly to prepare a CPI for each of the 21 states and an aggregate rural and urban CPI as well as the national composite CPI.

2/ The FOS completed a new National Consumer Survey during the period April 1992 to March 1993. A preliminary analysis suggests that expenditure on food items is broadly in line with the data from the 1985/86 national survey.

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Table 1. Nigeria: Consumer Price Index Market Basket 1/

(In percent)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>CPI weights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Combined urban and rural</td>
</tr>
<tr>
<td>Food</td>
<td>69.1</td>
</tr>
<tr>
<td>Drinks, tobacco, and cola</td>
<td>4.7</td>
</tr>
<tr>
<td>Clothing and footwear</td>
<td>4.7</td>
</tr>
<tr>
<td>Accommodation, fuel, and light</td>
<td>11.9</td>
</tr>
<tr>
<td>Household goods</td>
<td>3.6</td>
</tr>
<tr>
<td>Health-related</td>
<td>1.1</td>
</tr>
<tr>
<td>Transportation</td>
<td>2.4</td>
</tr>
<tr>
<td>Recreation, education, and entertainment</td>
<td>1.4</td>
</tr>
<tr>
<td>Other services</td>
<td>1.2</td>
</tr>
<tr>
<td>All items</td>
<td>100.0</td>
</tr>
</tbody>
</table>


III. Inflation During the 1985-93 Period

The rate of inflation dropped sharply in 1985 and 1986, as favorable weather conditions led to abundant crop production and tight fiscal and monetary policies substantially reduced excess liquidity in the economy (Chart 2). Anchored by a tight fiscal and monetary policy stance, and aided by favorable weather, the devaluation of the naira in 1986 (96 percent in domestic currency terms) had virtually no impact on that year's rate of inflation. Inflation increased moderately in 1987, averaging 10 percent, with the onset of the 1987-88 drought and the lagged impact of the substantial devaluation in 1986. Table 2 presents data since the mid-1980s on some of the factors that have influenced the inflationary process in Nigeria.

A severe drought in key growing regions of the country in 1987 and 1988, combined with fiscal and monetary expansion, led to a virtual doubling of

1/ Based on the 1985/86 National Consumer Survey.

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CHART 1

NIGERIA

CONSUMER PRICES

(Annual percentage change)

Consumer price index, 1966-93

Consumer and composite food prices, 1971-93

Rainfall and composite food prices, 1971-92 1/

Sources: International Financial Statistics; and staff estimates.

1/ Rainfall defined as percentage deviation from average rainfall.

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NIGERIA
INFLATION, MONEY, AND EXCHANGE RATE DEVELOPMENTS, 1986-93
(Annual percentage change)
food prices in 1988. Consequently, the rate of inflation jumped to 59 percent in 1988. While food prices actually fell during the second half of 1989 as rains and production improved, the average rate of inflation remained above 50 percent, primarily as a result of the cumulative impact of broad money growth and the sizable devaluation of the naira in 1989.

Table 2. Nigeria: Factors Influencing Inflation

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget deficit (% of GDP)</th>
<th>Broad money growth</th>
<th>Exchange rate devaluation</th>
<th>Real GDP growth</th>
<th>Rainfall</th>
<th>Current year inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>5.7</td>
<td>2.7</td>
<td>96.3</td>
<td>2.5</td>
<td>Good</td>
<td>5.7</td>
</tr>
<tr>
<td>1988</td>
<td>13.1</td>
<td>43.3</td>
<td>13.0</td>
<td>9.9</td>
<td>Drought</td>
<td>59.4</td>
</tr>
<tr>
<td>1990</td>
<td>2.9</td>
<td>40.0 1/</td>
<td>9.1</td>
<td>8.2</td>
<td>Good</td>
<td>7.4</td>
</tr>
<tr>
<td>1993</td>
<td>17.5</td>
<td>51.9</td>
<td>27.5</td>
<td>2.9</td>
<td>Below avg.</td>
<td>57.2</td>
</tr>
</tbody>
</table>

Source: International Financial Statistics; and staff estimates.

Inflation slowed considerably in 1990, to an average annual rate of 7.4 percent, largely reflecting the contractionary fiscal and monetary policies implemented during late 1989 and early 1990, and the improved harvests in 1989 and 1990 resulting from excellent rains. As a result, the increase in food prices was held to 3 percent in 1990. Toward the end of 1990, fiscal and monetary policies loosened considerably, which led to the upward movement in inflation in 1991, to 13 percent. The depreciation of the naira by 23 percent during 1991 also added to the upward pressure on prices.

The rate of inflation increased markedly in 1992, to 46 percent on an annual average basis, as a result of substantial excess liquidity in the economy brought about by the continued monetization of the growing fiscal deficit, which increased to 8 percent of GDP in 1992. The sharp devaluation of the naira (75 percent in local currency terms) during this expansionary period put further upward pressure on prices.

Inflation accelerated further in 1993, to an estimated 57 percent annually, reflecting the sharp increase in the fiscal deficit, to 18 percent

1/ Broad money rose sharply during the second half of the year.
of GDP. The devaluation of the official exchange rate (28 percent in local currency terms) also added upward pressure on the rate of inflation, but this pressure was tempered somewhat by the estimated 4 percent decline in the index of foreign prices.

Table 3. Nigeria: Selected Price, Money, and Exchange Rate Indicators

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>9.6</td>
<td>17.7</td>
<td>24.0</td>
<td>7.4</td>
<td>13.0</td>
<td>46.2</td>
<td>57.2</td>
<td></td>
</tr>
<tr>
<td>Broad money</td>
<td>24.0</td>
<td>19.1</td>
<td>20.0</td>
<td>40.0</td>
<td>33.8</td>
<td>51.2</td>
<td>51.9</td>
<td></td>
</tr>
<tr>
<td>Exchange rate (Naira/US$)</td>
<td>-1.5</td>
<td>3.8</td>
<td>55.2</td>
<td>9.1</td>
<td>23.3</td>
<td>74.6</td>
<td>27.5</td>
<td></td>
</tr>
<tr>
<td>Foreign inflation</td>
<td>8.0</td>
<td>4.0</td>
<td>12.6</td>
<td>16.4</td>
<td>3.5</td>
<td>7.2</td>
<td>-4.4</td>
<td></td>
</tr>
</tbody>
</table>

(Average annual change)

Sources: International Financial Statistics and staff estimates.

IV. A Quantitative Analysis of Inflation Developments in Nigeria

1. Factors influencing inflation

Authors of recent studies on inflation in Nigeria broadly agree on the key factors influencing the rate of inflation: money growth, income growth, and exchange rate movements. These factors are presented for period averages in Table 3. It is noteworthy that, as the table indicates, the widening of the differential between domestic and foreign inflation has generally occurred during periods of rapid monetary expansion while the impact of exchange rate movements on inflation is less clear. However, recent empirical studies do not concur on the relative importance of each of these factors as determinants of inflation. Most of them have concluded that excess domestic demand, generated by expansionary fiscal and monetary policies, has been the principal factor underlying the rising inflation rate.

1/ Weighted average of trading partner prices (in dollar terms).
in Nigeria. 1/ Others have suggested that cost-push inflation resulting from excessive devaluations and wage increases has been the primary component behind the upward inflationary spiral. 2/

Broad money growth has been found to be a fundamental determinant of inflation in many of the studies, while the impact of exchange rate movements on inflation has been less clear. This ambiguity is most likely the result of the time periods studied (Chart 3). During the 1960s and 1970s, when the official exchange rate was stable, there were numerous periods of high inflation. Subsequently, in the 1980s and early 1990s, the considerable devaluation of the naira occurred during a period of increasing price instability and rising inflationary pressures and most likely added to the upward movement in inflation. As the magnitude of the impact of exchange rate movements on inflation is unclear, it will be tested empirically below.

Many of the studies also reported that real income growth played a significant deflationary role by increasing the demand for real money balances. In addition, some studies reported a significant and negative relationship between agricultural production and inflation. While this latter result is consistent with one's intuition, the linear relationship between the income and production variables may have led to spurious results since agricultural production has accounted for such a large share of total production.

2. Derivation of the inflation equation

To distinguish the magnitude of the impact of relevant explanatory variables discussed above and predict the likely inflationary outcome of a specific mix of policy measures and exogenous factors, an equation for inflation is derived and analyzed below. The overall price level \( P \) is a weighted average of the price of tradable goods \( P^T \) and nontradable goods \( P^N \), and can be represented in log-linear form as:

\[
\log P = \alpha \log P^N + (1-\alpha) \log P^T, \tag{1}
\]

where \( \alpha \) represents the share of nontradable goods in total expenditure. The price of tradable goods \( P^T \) is determined exogenously in the world market and, in domestic currency terms, can be represented by foreign prices \( P^F \) and the exchange rate \( e \):

\[
\log P^T_t = \log e_t + \log P^F_t. \tag{2}
\]

Both an increase in the exchange rate (in domestic currency terms) and foreign prices will lead to an increase in the overall price level.

1/ See, for example, Darrat (1985), Ojameruaye (1988), Ekpo (1992), and World Bank (1993).
2/ See, for example, Adamson (1989) and Aigbokhan (1991).
The price of nontradable goods \( P^N \) is assumed to be set in the money market, where demand for nontradable goods is assumed, for simplicity, to move in line with demand in the economy overall. As a result, the price of nontradable goods is determined by the money market equilibrium condition, real money supply \( M^S/P \) equals real money demand \( m^d \), which yields the following equation for nontradable goods prices:

\[
\log P^N = \beta (\log M^S - \log m^d),
\]

(3)

where \( M^S \) represents the nominal stock of money, \( m^d \) is the demand for real money balances, and \( \beta \) is a scale factor representing the relationship between economy-wide demand and demand for nontradable goods. The demand for real money balances \( (m^d) \) is assumed to be a function of real income, inflationary expectations, and foreign interest rates:

\[
m^d_t = f(y_t, \pi_t, r_{t+1}),
\]

(4)

where \( y_t \) represents real income, \( \pi_t \) represents expectations formed in period \( t-1 \) of inflation in period \( t \), and \( r_{t+1} \) is the expected nominal foreign interest rate in period \( t+1 \) adjusted by the expected change in the exchange rate in period \( t+1 \). According to money demand theory, an increase in the stock variable (real income) will stimulate money demand, whereas an increase in the domestic opportunity cost variable (expected inflation) will lead to a decline. The expected rate of inflation in period \( t \) is assumed, based on adaptive expectations, to be equal to:

\[
\pi_t = d_1 (\Delta \log P_{t-1}) + (1-d_1) \pi_{t-1}.
\]

(5)

where \( \Delta \log P_{t-1} \) represents actual inflation in period \( t-1 \) and \( \pi_{t-1} \) is the expected rate of inflation in period \( t-1 \). In this analysis, we assume that \( d_1=1 \), leading to the following reduced-form inflation equation:

\[
\pi_t = \Delta \log P_{t-1}.
\]

(6)

Moreover, based on similar assumptions regarding the formulation of expectations, we assume that the expected foreign interest rate \( (r_{t+1}) \), corrected for the expected change in the exchange rate, is equal to the observed rate in period \( t \):

\[
E[r_{t+1}] = r_t.
\]

(7)

An increase in expected future foreign interest rates \( (r_{t+1}) \) is assumed to lead to a decrease in current real money demand as a result of substitution.

\[\begin{array}{l}
\frac{\partial m^d}{\partial r_{t+1}} < 0.
\end{array}\]
CHART 3

NIGERIA
INFLATION, MONEY, AND EXCHANGE RATE DEVELOPMENTS, 1965-93
(Annual percentage change)

Sources: International Financial Statistics; and staff estimates.

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Substituting equations (6) and (7) into equation (4) yields the following log-linear money demand function:

\[ \log m^d_t = c_2 \log y_t - c_3 \Delta \log P_{t-1} - c_4 r_t. \]  
(8)

Substituting equation (8) into equation (3) yields

\[ \log P^N_t = \beta (\log M_t - c_2 \log y_t + c_3 \Delta \log P_{t-1} + c_4 r_t). \]  
(9)

Equations (2) and (9) can then be substituted into equation (1), where:

\[ \log P_t = \alpha \beta (\log M_t - c_2 \log y_t + c_3 \Delta \log P_{t-1} + c_4 r_t) \]
\[ + (1 - \alpha)(\log e_t + \log P^{f}_t). \]  
(10)

Equation (10) above assumes that prices adjust instantaneously while, in reality, the adjustment takes place over time given built-in rigidities in the market. A standard partial adjustment model can be employed to develop a dynamic version of the price equation, where the speed of adjustment is represented by \( \sigma \), resulting in the following partial adjustment price equation:

\[ \log P_t = \sigma [\alpha \beta (\log M_t - c_2 \log y_t + c_3 \Delta \log P_{t-1} + c_4 r_t) \]
\[ + (1 - \alpha)(\log e_t + \log P^{f}_t)] + (1 - \sigma)(\log P_{t-1}). \]  
(11)

The estimatable equation then becomes:

\[ \log P_t = h_1 (c_1 \log M_t - c_2 \log y_t + c_3 \Delta \log P_{t-1} + c_4 r_t) \]
\[ + h_2 (c_5 \log e_t + c_6 \log P^{f}_t) + h_3 \log P_{t-1}, \]  
(12)

where \( h_1 = \sigma \alpha \beta, h_2 = \sigma (1 - \alpha), \) and \( h_3 = (1 - \sigma). \)

Based on the underlying assumptions discussed above, the following a priori assumptions can be made regarding the signs of the explanatory variables:

\[ P_t = f(M_t, y_t, e_t, r_{t+1}, \pi_t, P^{f}_t, P_{t-1}), \]
\[ + - + + + + \]  
(13)

where an increase in nominal broad money, the naira/U.S. dollar exchange rate, expected nominal foreign interest rates adjusted for the expected change in the exchange rate, foreign prices, or prices in the previous period lead to an increase in prices in period \( t \), while an increase in real income leads to a fall in prices.
3. **Empirical results**

The statistical significance and relative explanatory power of the key factors discussed were tested using standard ordinary least squares (OLS) estimation techniques on annual data for the period 1960-92. Several variations of the model were estimated in level and first difference form (Table 4) and all performed well in terms of the expected signs of the explanatory variables, adjusted R² values, and standard errors. 1/ A number of additional standard tests were performed to assure normality and reject heteroskedasticity in the disturbance terms.

Equation I in Table 4 estimates the reduced form model in level form, as shown in equation (12), excluding the insignificant foreign interest rate, foreign price and inflationary expectations variables; equation II re-estimates equation I with the addition of a rainfall variable 2/; and, equation III reestimates equation I in first difference form to correct for possible spurious results associated with unstationary time series. The presence of serial correlation was rejected in each of the three estimated models based on the Durbin-h statistic, the Breusch-Godfrey test, and the Box-Pierce and Ljung-Box Q statistics.

To analyze the impact of agroclimatic conditions on inflation, a dummy variable was tested in equation I for specific periods of drought but was not found to provide significant additional explanatory power. Given the central role of food prices in the CPI and the apparent impact of rainfall on Nigeria's agriculture, a lagged rainfall variable was included as an additional explanatory variable in equation II and, like the real income variable, was found to have a significant and negative relationship with inflation, as anticipated.

Equation I was then reestimated in first difference form to correct for possible spurious results associated with nonstationary time series. 3/ Based on the augmented Dickey-Fuller (ADF) unit root test, the price, money, exchange rate, and real income time series were found to be integrated of order one, I(1), requiring differencing to achieve stationarity.

Equations I and II performed well with respect to goodness of fit, with the regressions explaining over 99 percent of the change in the price level in terms of changes in nominal money, real income, nominal exchange rate, and--for equation II--rainfall. Equation III also performed well with the regression explaining 71 percent of the change in inflation in terms of

---

1/ A cointegrating relationship was weakly confirmed between the CPI, money, exchange rate, and real income variables, suggesting that further analysis using cointegration techniques would be warranted in future work.

2/ Measured in terms of millimeters of rainfall per year.

Table 4. Nigeria: Estimation Results 1/

<table>
<thead>
<tr>
<th></th>
<th>Equation I</th>
<th>Equation II</th>
<th>Equation III</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.7449 ***</td>
<td>0.3935 *</td>
<td>0.1719 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(1.9195)</td>
<td>(5.1788)</td>
<td>(2.1155)</td>
<td></td>
</tr>
<tr>
<td>Log broad money (t)</td>
<td>0.3586 *</td>
<td>0.3935 *</td>
<td>-0.2201 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(5.0909)</td>
<td>(5.1788)</td>
<td>(2.8199)</td>
<td></td>
</tr>
<tr>
<td>Log exchange rate (t)</td>
<td>0.1441 *</td>
<td>0.1807 *</td>
<td>-0.4173 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(4.3431)</td>
<td>(4.8199)</td>
<td>(2.2874)</td>
<td></td>
</tr>
<tr>
<td>Log real income (t)</td>
<td>-0.2499 *</td>
<td>-0.2201 **</td>
<td>0.1557 **</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(3.0063)</td>
<td>(2.8199)</td>
<td>(2.4131)</td>
<td></td>
</tr>
<tr>
<td>Average rainfall (t-2)</td>
<td>-0.4173 **</td>
<td></td>
<td>0.1557 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.2874)</td>
<td></td>
</tr>
<tr>
<td>Log prices (t-1)</td>
<td>0.4897 *</td>
<td>0.3996 *</td>
<td>0.2951 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(4.7141)</td>
<td>(3.4665)</td>
<td>(2.4131)</td>
<td></td>
</tr>
<tr>
<td>Δ log broad money (t)</td>
<td>0.1719 **</td>
<td>0.1719 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.1155)</td>
<td>(2.1155)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ log broad money (t-1)</td>
<td>0.2481 *</td>
<td>0.1719 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.2741)</td>
<td>(2.1155)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ log exchange rate (t-1)</td>
<td>0.1395 **</td>
<td>0.1719 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.3276)</td>
<td>(2.1155)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ log exchange rate (t-2)</td>
<td>0.1557 **</td>
<td>0.1719 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.4131)</td>
<td>(2.1155)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ log real income (t)</td>
<td>0.2201 **</td>
<td>-0.2201 **</td>
<td>-0.2201 **</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(2.6681)</td>
<td>(2.2819)</td>
<td>(2.2819)</td>
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<tr>
<td>Δ log prices (t-1)</td>
<td>0.2951 **</td>
<td>0.2951 **</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(2.4131)</td>
<td>(2.4131)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ log prices (t-2)</td>
<td>-0.4210 *</td>
<td>-0.4210 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.7227)</td>
<td>(3.7227)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ² log prices (t-2)</td>
<td>-0.4210 *</td>
<td>-0.4210 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.7227)</td>
<td>(3.7227)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Adj. R²              | 0.9969     | 0.9965      | 0.7067       |
| Standard error of regression | 0.0740 | 0.0737 | 0.0661 |
| F-statistic          | 2478.6     | 1130.1      | 12.3         |
| DW                   | 1.7400     | 2.1351      | 1.9923       |
| Durbin-h             | 0.8949     | 0.3643      | 0.0273       |
| Observations         | 32         | 21          | 29           |

* Denotes significance at the 1 percent level.
** Denotes significance at the 5 percent level.
*** Denotes significance at the 10 percent level.

1/ Absolute value of the T-ratios are presented in parentheses below the coefficients.
2/ Represents the second difference of prices.

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changes in nominal money growth, exchange rate growth, and real income growth. The significant influence of the lagged CPI variable indicates that current economic policies contribute importantly to inflation in the subsequent period, with only 50-60 percent of the total impact of the explanatory variables realized in the first year for equations I and II.

As expected, the role of broad money growth in the inflationary process was significant in both equation I and equation II, with a short-run elasticity of almost 0.4 and a long-run elasticity of about 0.7, indicating that a 10 percentage point increase in broad money leads to a rise in inflation of 4 percentage points within a year and an ultimate increase in inflation of 7 percentage points. The depreciation of the currency was also found to play a role in explaining inflation, though much less so than broad money growth.

A 10 percent decrease in rainfall (lagged) was found to yield a 7 percent increase in the price level in the long run in equation II. Multicollinearity between the real income and rainfall variables was observed in equation II but was found to be within an acceptable range, with the correlation coefficient estimated at 0.4.

Equation III provides results consistent with equation I while including the second difference of the price variable as an additional explanatory variable, which, conceptually, represents the impact of the acceleration/deceleration of prices on future inflation. The lag structure of equation III was reviewed based on appropriate F-test statistics, though lag lengths were limited by the data set. Equation III found a stronger exchange rate impact on inflation than that found in equation I, based largely on the inclusion of lagged exchange rate variables to better capture the delayed impact of a devaluation on prices. The impact though is still significantly smaller than the impact of money growth on inflation.

4. Stability and forecast

When the three equations were fitted against historical inflation data, they performed well in terms of tracking the cyclical nature of price movements in Nigeria (Chart 4). All three equations were found to be structurally stable over the period studied based on the Chow forecast and Chow breakpoint tests. Four years were selected as possible breakpoints (1977, 1979, 1982, and 1985), consistent with previous empirical studies, representing years of pronounced structural reform or exogenous shocks. The presence of a general specification error was rejected in each of the equations based on the results of the Ramsey RESET test. The estimated equations were then used to forecast 1993 inflation, producing good results, as shown in Chart 4.
CHART 4

NIGERIA

ACTUAL AND FITTED INFLATION, 1961-93 1/
(First difference Log (CPI))

Sources: International Financial Statistics; and staff estimates.

1/ 1993 represents forecast.

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V. Conclusions

Nigeria's rate of inflation has increased markedly over the past two and a half decades. The results of this analysis confirm the basic findings of earlier studies, namely that monetary expansion, driven mainly by expansionary fiscal policies, explains to a large degree the inflationary process in Nigeria. Other important factors were the devaluation of the naira and agroclimatic conditions.

With respect to the depreciation of the naira, it was found that concurrent fiscal and monetary policies had a major influence on its impact on inflation. The devaluation of the naira increases prices but the impact can be counteracted by implementing appropriate financial policies. As shown in 1986 and 1990, a tight fiscal and monetary policy stance during and shortly after a devaluation substantially reduces the impact of the devaluation on domestic prices, while a devaluation during a period of excessive expansionary financial policies magnifies the impact on inflation, as was seen in 1992.

Agroclimatic conditions were also found to be a factor influencing the rate of inflation. Given the considerable role of food commodities in the CPI, agroclimatic conditions (rainfall) have a significant influence on overall movements in prices, as was shown in 1988/89 and 1990/91.