CHAPTER - VII

The Phase Analysis of Instability Episodes: the Case of the Indian Economy, 1950-2003

INTRODUCTION

Changes in any economy's structure are predominantly gradual; those dynamic factors and their weights tend to relatively vary, but the structure and dynamics influence each other. These changes and interactions – along with domestic and international policies as well as outside events – explain why macroeconomic growth and stability vary a great deal over time. Policies have economic, financial, and political constraints may be reactive or proactive and can and sometimes do benefit from learning. Outside events or shocks represented by their presumed results shift economic and other variables that affect macroeconomic stability. The exogenous shocks like irregular components are to a large extent unpredictable random in nature, and that often dominant in the short-run.

Fluctuations in economic activity are a feature of the behaviour of most economies, and an understanding of their patterns and causes is important for economic analysis of instability episodes. The objectives of macroeconomic policy have long included the avoidance of protracted recessions and of periods of unsustainable growth that can jeopardise reasonable macroeconomic stability. The general perspectives provided by the various decades of the Indian macro-economy as well as the empirical evidence gathered in this regard help to offer useful guideposts for interpreting instability episodes observed in the Indian economy, in particular the role of shocks and policies. Such an approach in this chapter concentrates on suggesting ways in which macroeconomic policies and exogenous shocks have been influential for instability episodes. It discusses about relevant macroeconomic indicators for the Indian economy as a whole and analyses their sustainability.

In this context, this chapter explores three main underlying issues. *First*, it examines some of the main features of macroeconomic instability in the Indian economy over the past more than five decades against the backdrop of some of the theories advanced in order to

explain the stylised facts of macroeconomic crises. *Second*, it attempts to assess the two-way interactions between macroeconomic policies and economic outcomes: initially by examining the main factors that influence macroeconomic instability, and then by considering the role of economic policies in instability linkages and macroeconomic stabilization. Although there are uncertainties about understanding exactly the nature of the economic disturbances that cause macroeconomic instability as well as identifying the determinants of movements and co-movements of candidate macro-variables because exogenous shocks in many ways are often elusive and generally unpredictable. This suggests that it is necessary to understand macroeconomic warranted situations and its more fundamental misalignments with historical antecedents. However, the main focus has been to distinguish the instability sub-periods in the 1960s and 1990s. The concluding section draws upon some instability implications for policy posture and surveillance.

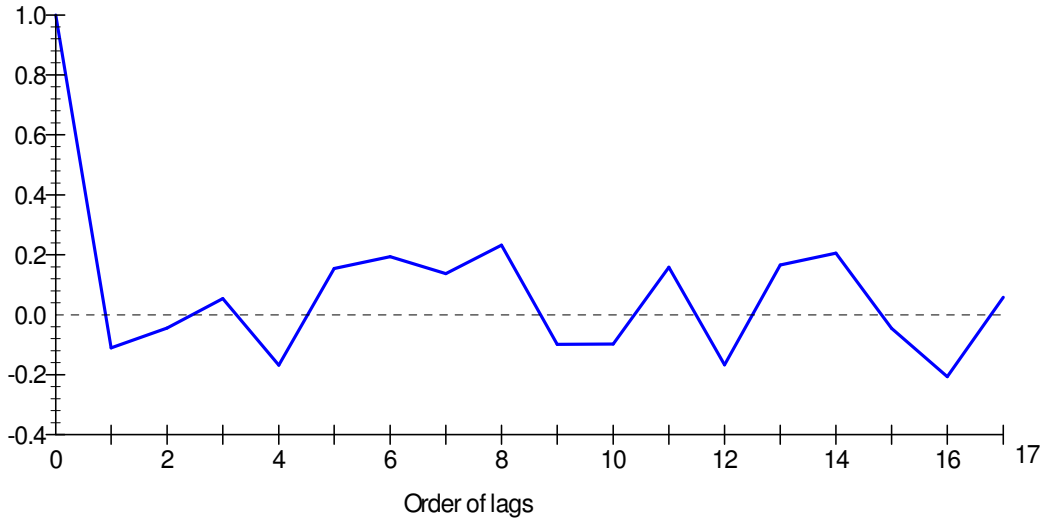
This chapter looks at all of these aspects of economic change as it breaks down the Indian macroeconomic performance of the studied sample period into a sequence of successive expansions and contractions and their respective stages. This is done with the aid of smoothing applied to the series of growth rate of Indian real aggregate economic activity. Smoothing of trend-cycle decomposition is done to reduce volatility. Smoothing techniques are applied cautiously so that that cannot disturb and conceal factual information. Measures relating to longer-run trends and intermediate –run fluctuations at levels, growth rates, as well as detrended values are examined. It concentrates on to identify Indian macroeconomic instability sub-periods based on factors and relationship using standard deviation-correlation matrix that helps to explain how Indian macroeconomic policies reflected in constituent elements of national aggregates and structural changes. It concentrates to analyse how economic indicators, while adjusted for inflation, are affected by fiscal, monetary and exchange rate policies as well as new developments in technology, globalisation and foreign trade.

The usefulness of these exercises allows how can the stages of macroeconomic instability be identified? Another query is that what are the dimensions of this stage and how are they related? This chapter also throws light on every episodic salient features. In broader terms, the objective of this investigation is to distinguish Indian economy's sub-episodic and evanescent instability phases.

This chapter is organised into the following four subsections. Section 7.1 examines the nature of Indian real GDP. Section 7.2 involves empirical analysis of indicator approach to instability episodes. Section 7.3 identifies the instability stages of the Indian economy. Section 7.4 evaluates the historical sources of instability of each stage. And the rest concludes this chapter.

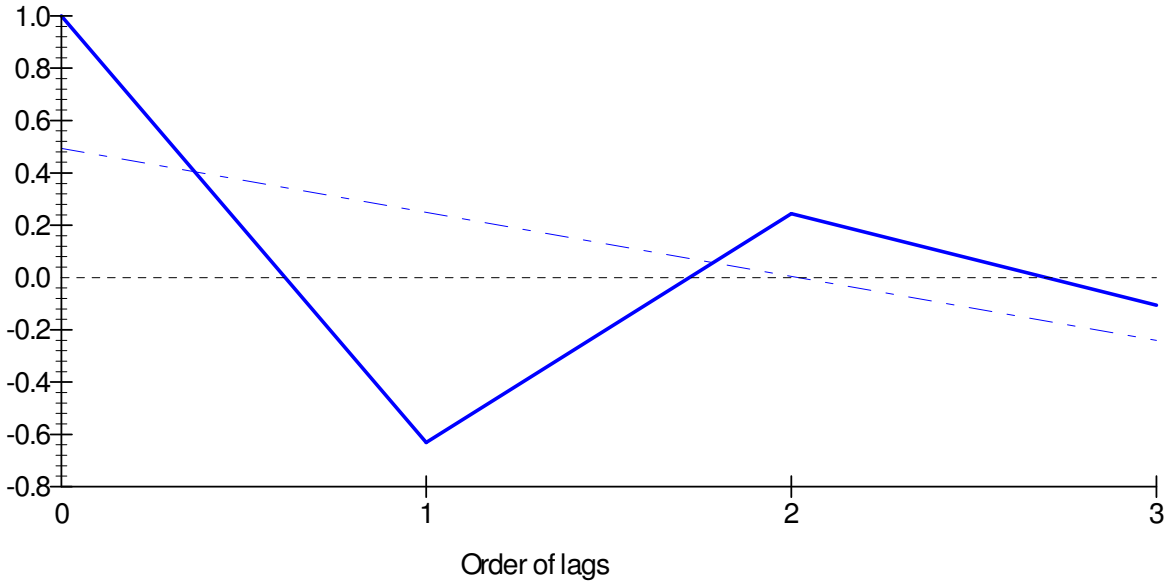
7.1 THE INDIAN REAL GDP ANALYSIS

This sub-section has in its preliminary effort made an attempt to provide information as is why the decades 1960s and 1990s as compared to others have been the case in point or rather are of special interest for macroeconomic instability analysis. Before specifying respective instability sub-periods, it has plotted autocorrelation function (ACF) of growth rate of real GDP of the Indian economy in the following six figures 7.1 and 7.1 (A) – 7.1 (E) for the unbroken sample period from 1950-51 to 2002-03 and decade-wise non-overlapping sub-sample periods respectively. Figure 7.1 indicates a seemingly visual impression of Indian real GDP growth rate to be stationary as there is no indication of ceaseless tapering off of the values of autocorrelation coefficients with the increase of orders of lags. However, visual impression does not always convey the true indication which is why further sophisticated treatment is required before passing judgement to confirm about the nature of Indian real GDP rate that to be followed in the next chapter. However, in comparing the nature of the Indian real GDP rate across decades, the ACFs for the 1960s [see Figure 7.1 (B)] and 1990s [see Figure 7.1 (E)] appear to be somewhat distinct compared to those of other decades in terms of their dips. In both the cases, the changes of linearity drifted downward more than once unlike the rest. So far as the kinked point occurred and points of tilting below the zero line more pronounced of the Indian real GDP rate across decades are concerned, both the decades 1960s and 1990s are having a great deal of resemblance unlike others. However, seeing facet switching of ACF of real GDP alone cannot capture the overall information about instability episodes.



***Source*:** Compiled data from NAS, CSO [EPWRF, 2004]

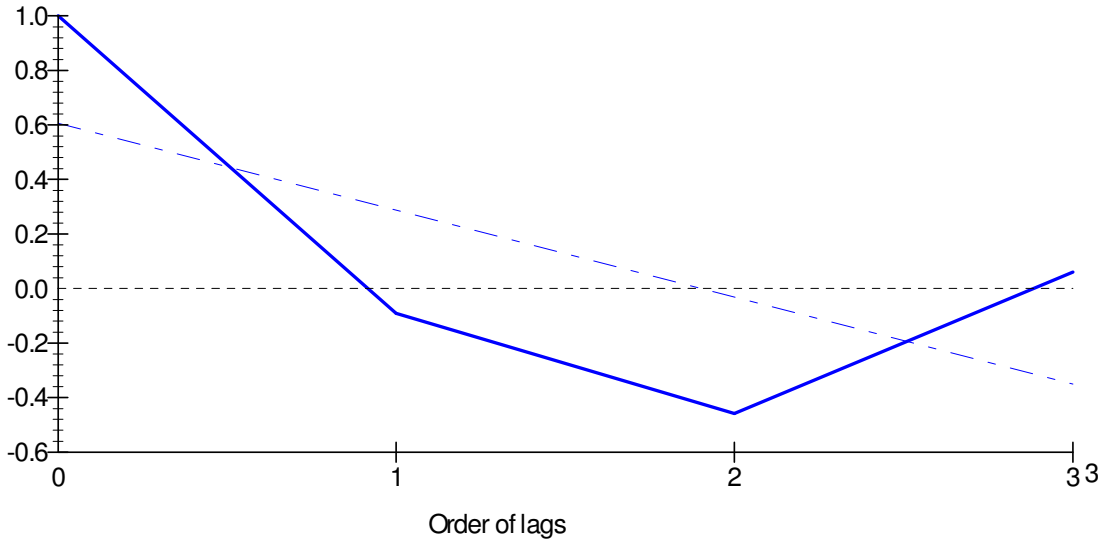
***Figure 7.1*:** *Autocorrelation Function of the Indian Real GDP Rate,1950-51 to 2003-04*



***Source*:** Compiled data from NAS, CSO [EPWRF, 2004]

***Note*:** the 'dashed-line' is the fitted trend line of autocorrelation coefficients

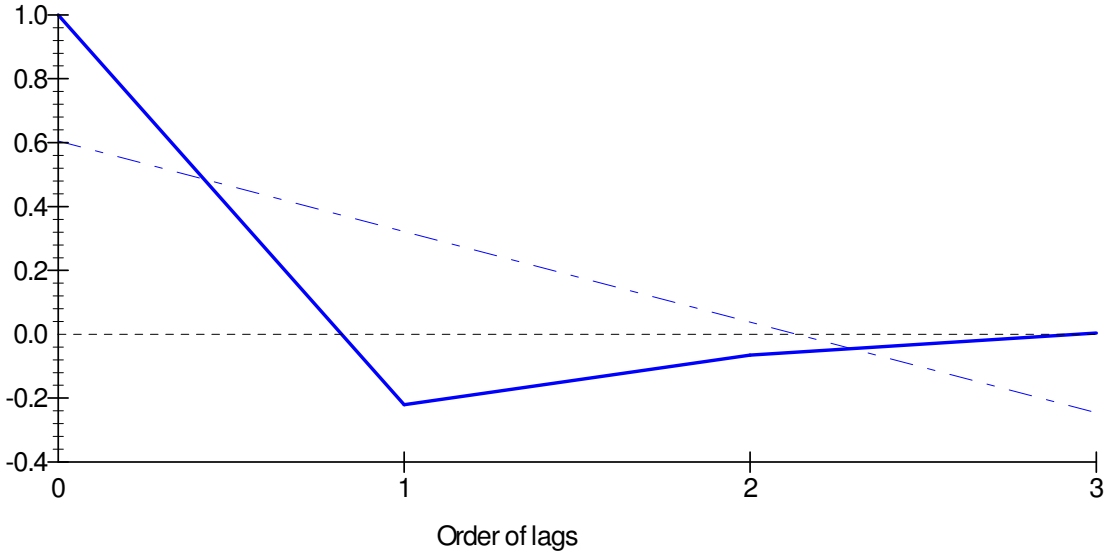
***Figure 7.1(A)*:** *Autocorrelation Function of the Indian Real GDP Rate,1950-51 to 1959-60*



Source: Compiled data from NAS, CSO [EPWRF, 2004]

Note: the 'dashed-line' is the fitted trend line of autocorrelation coefficients

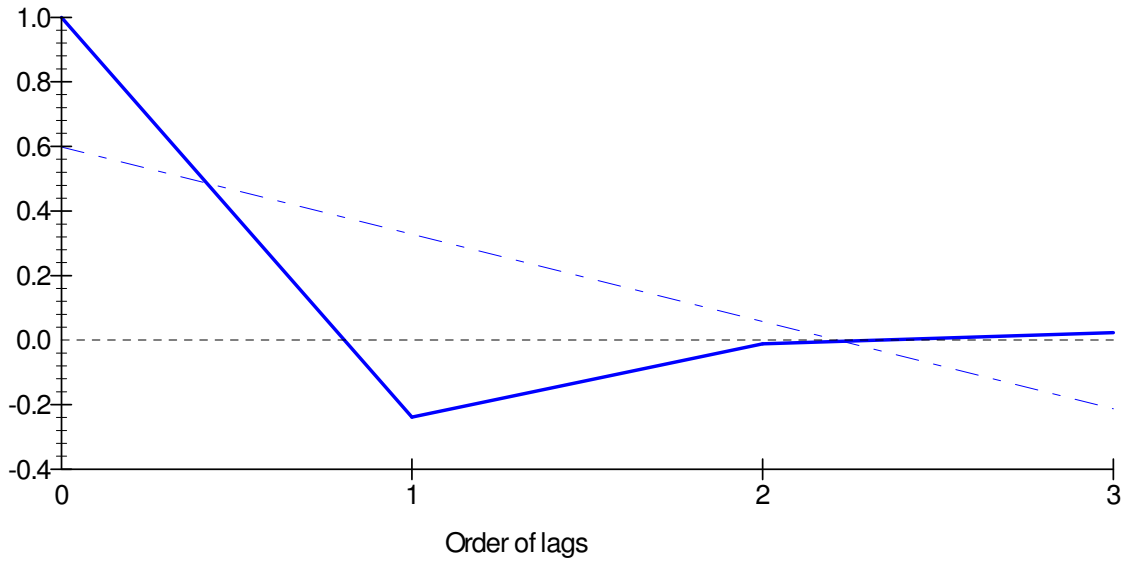
Figure 7.1(B): *Autocorrelation Function of the Indian Real GDP Rate,1960-61 to 1969-70*



Source: Compiled data from NAS, CSO [EPWRF, 2004]

Note: the 'dashed-line' is the fitted trend line of autocorrelation coefficients

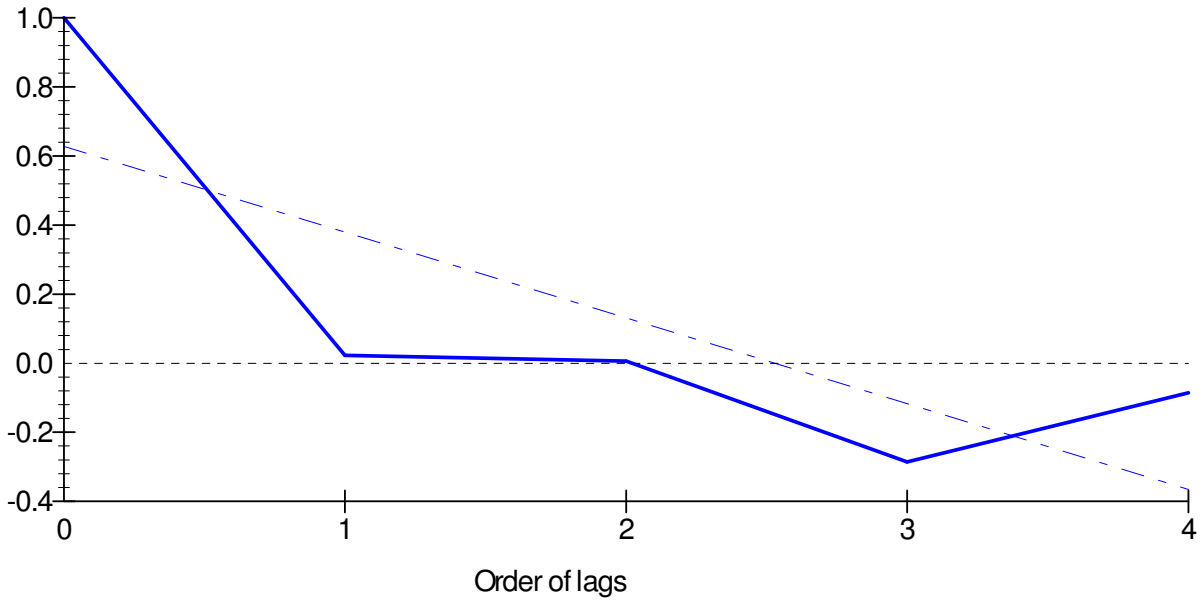
Figure 7.1(C): *Autocorrelation Function of the Indian Real GDP Rate,1970-71 to 1979-80*



***Source*:** Compiled data from NAS, CSO [EPWRF, 2004]

***Note*:** the 'dashed-line' is the fitted trend line of autocorrelation coefficients

***Figure 7.1(D)*:** *Autocorrelation Function of the Indian Real GDP Rate,1980-81 to 1989-90*



***Source*:** Compiled data from NAS, CSO [EPWRF, 2004]

***Note*:** the 'dashed-line' is the fitted trend line of autocorrelation coefficients

***Figure 7.1(E)*:** *Autocorrelation Function of the Indian Real GDP Rate,1990-91 to 2002-03*

However, this estimated ACF approach does not adequately report about the fitted partial and cross correlation functions and thereby does not claim to be statistically significant substantiate approach. Specifying instability episodes, it requires probing economic analysis about switching regimes of the sub-period to a reasonable extent so that the role of macroeconomic management in setting policies in response to propagation of shocks or innovations can be captured in multifaceted economic indicators entailing sectoral behaviour understanding the consequences of lag length in the rolling period manner to be statistically significant approach.

7.2. INDICATOR APPROACH TO INSTABILITY EPISODIC ANALYSIS: EMPIRICAL EVIDENCE

This sub-section applies the indicator approach to evaluating macroeconomic instability episodes in the Indian economy. The emphasis on the indicator approach is on the concerted nature of the upswings and downswings in different measures of economic activity. Economic indicators are essentially classified into leading, coincident, and lagging categories. Macroeconomic instability episode can be determined based on the central tendency and volatility of the individual series in a set of economic indicators with historical factual information. There is considerable evidence that the indicator approach to macroeconomic instability being used widely in combination with other methods. As is true of any economic system, all the macroeconomic variables are interrelated and a change in any one of them does have an impact on the other variables as well as on the deficit measures. It is, therefore, interesting to study the impact of all these variables taken together on the macroeconomic instability indicators using correlation- standard deviation matrix. Since the results are almost similar with the scatter plot approach in the previous chapter 3, this empirical section would report and discuss it, focussing on relatively more crucial variables. This table initially compiled the data and based upon recognition of empirical patterns and regularities and in the later part carried out the relevant empirical investigations. However, these results could be viewed as a pointer to the nature of the relationship that could exist between deficit measures and major macroeconomic variables but could not indicate the direction of these relationships for which further rigorous econometric investigation has been the task in the subsequent chapters.

TABLE 7.1 : *Macroeconomic Instability Indicators: The Statistical Evidence in the Indian Economy, 1950-2003*

	1950-59		*1960-69*		**1970-79**		*1980-89*		*1990-2003*	
	Mean and standard deviation of smoothed growth rates									
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
GDP	3.91	2.23	4.07	3.17	2.92	4	5.89	1.7	5.43	1.8
Inflation	1.42	5.94	6.32	3.72	8.07	6.7	8.56	1.51	7.53	3.2
Consumption	.93	3.02	.89	1.87	.85	2.98	.85	1.89	.76	1.93
Private consumption	.87	3.21	.81	1.9	.76	3.5	.74	2.2	.64	1.8
Govt. consumption	.05	3.84	.07	7.5	.09	4.9	.11	2.6	.11	4.6
Investment	.11	19.6	.14	8.6	.17	9.9	.21	5.4	.24	9.6
Govt. Investment	.04	18.75	.06	11.48	.08	12.33	.09	11.60	.074	7.27
Private Investment	.06	24.77	.08	9.95	.10	13.91	.12	13.35	.15	16.82
Savings	.10	15.2	.12	8.06	.17	9.74	.19	5.41	.23	7.92
Govt. Savings	.01	31.51	.027	22.29	.037	16.12	.03	21.45	.002	96.70
Private Savings	.08	16.04	.09	11.55	.13	10.73	.16	7.25	.23	7.56
Exports	.06	9.87	.04	13.15	.053	11.25	.06	10.45	.10	8.88
Imports	.07	24.53	.05	16.8	.057	19.99	.08	9.88	.11	8.25
Fiscal deficit	.02	.014	.041	.006	.044	.006	.06	.019	.07	.011
Current account deficit	.01	.014	.02	.007	.001	.009	.01	.006	.01	.010
Correlation Matrix: Correlation coefficients of all the possible explanatory variables with smoothed GDP growth rates										
GDP	1		1		1		1		1	
Private consumption	0.82		0.93		0.89		0.76		0.8	
Govt. consumption	-0.3		-0.1		0.16		-0.65		0.4	
Investment	0.06		-0.26		0.64		0.23		0.52	
Govt. Investment	.06		.21		-.03		.07		.35	
Private Investment	-.05		-.087		-.03		.38		.42	
Savings	0.21		-0.33		0.31		0.16		0.46	
Govt. Savings	.13		.39		-.69		.12		-.09	
Private Savings	.18		-.54		.36		.06		.52	
Exports	-0.35		-0.07		-0.25		0.25		-0.53	
Imports	-0.23		-0.13		-0.11		0.62		0.33	
Trade balance	0.13		0.26		-0.07		-0.013		-0.53	
Inflation	0.16		-0.26		-0.62		0.27		-0.33	
Fiscal deficit	-0.02		-0.45		-0.29		-0.13		-0.19	
Current account deficit	-0.11		-0.26		-0.17		0.4		0.35	

Note: GDP, consumption and investment are measured at constant 1993-94 prices; exports and imports are measured in terms of rupees crore; the trade balance, fiscal deficit and the current account deficit are computed as percentage of GDP at current market prices; and the inflation rate is measured by the GDP deflator.
Source: compiled from NAS, CSO, EPWRF, 2004

THE MACROECONOMIC IMPACTS OF THE VARIABLES ARE SUMMARISED BELOW CONTAINED IN TABLE 7.1:

The patterns discerned in the above Table 7.1 indicate that fluctuations in economic activity have been a persistent feature of Indian macroeconomic development and have, to a certain extent, been characterised by varying degrees of regularity in terms of duration and amplitude. In such a context, a greater understanding of some of the forces underpinning these fluctuations can be obtained by analysing the inter-temporal nature of the correlations amongst the variables

across phases. Table 7.1 shows some of the relevant patterns across decades. A useful perspective of this sub-section has been on the relationship between macroeconomic policies and twin-deficits adjustments as causal statements inevitably involve informed judgement rather than exact proofs are provided in the above Table 7.1. It shows government and private savings-investment balances and the corresponding current account deficits across sub-periods over the entire studied period. It is well known that the current account deficit is identically equivalent with the sum of government sector gross fiscal deficit and private sector surplus (savings – investment gap of the private sector). To begin with, a mean – standard deviation (SD) table for all the expected explanatory variables and the dependent variables has been obtained. Based on their values, several variables are selected as the potential explanatory variables. The results in the Table 7.1 indicate that there are the features which distinguish the decades from each other.

The growth rates of real GDP show almost a positive trend but it is found to have dipped in the 1960s, 1970s and slightly glided in 1990s. On the other hand, the inflation rates show a rising trend. But it is found to be volatile as their standard deviation varies across non-overlapping sub-sample periods. For inflation rate, the 1970s is the highest ever among the five decades considered.

On the other hand, there has been distinct fall in the share of consumption across decades, which may be the prime reasons for the fall in absorption which might cause demand recession and to mirror this, the share of gross domestic savings increased may reflect the impacts of the financial liberalisation measures. The trends in private consumption observed continued to decline monotonically as before reaching a trough of 64 per cent in the 1990s. The share of Government consumption, which had increased ceaselessly from 1950-51 onwards, declined though marginally in the 1990s, seems to have been partly as a consequence of the fiscal austerity measures adopted (see Table 7.1).

There has been an overall increase in saving and investment rates in India through the entire studied sample period, though with considerable fluctuations year-wise from 10 percent to over 24 per cent. Domestic capital formation has predominantly been financed through domestic savings (see Table 7.1). The contribution of foreign capital inflows (or, foreign savings or, CAD, which represents the domestic investment – savings gap) has remained less

than 5 per cent throughout the studied sample period. It is important to note that the macroeconomic crisis in mid 1960s was preceded by a rapid increase in government domestic fixed capital formation over several years that led large current account deficits and inevitably there involved heavy external borrowing. Private savings accounted for over 90 per cent of gross domestic savings rate throughout, with government savings rate falling constantly from the 1980s. Much of the fall in government savings since has emanated from dilution in the fiscal position of the government administrative departments. Despite the rapid growth of corporate savings since mid-80s, household savings continued to account for over fourth-fifths of total private savings.

On the other hand, the relative contributions of the government and private sectors to gross domestic capital formation have changed considerably across the decades. Government investment is in increasing trend till 80s and accounted for much of the increase in the total investment. However, there has been a sharp fall of government investment in the 1990s. The government investment, after peaking at 9 per cent during 1980s fluctuating around a declining trend to reach to 7.5 per cent in the 1990s, as portrays the Table 7.1. There has been an increasing trend of private investment across decades and private investment has dominated the overall investment trends in the economy. The increase in private investment in the 1980s and 1990s was mainly due to a rapid increase in private corporate investment. There has been a marginal increase in the share of private investment, which enabled it to reach an all time high of 15 per cent in the 1990s. This research has analysed whether instability of government investment reduced the rate of growth of the economy and thereby led macroeconomic crises sub-episodes. There has been relative variation of private sector surplus, which is defined as the savings – investment gap of the private sector, across decades, as is shown in the Table 7.1. The share of exports surged to a peak of 10 per cent in 1990s from its earlier level of 6 per cent in 1980s probably as an outcome of external real sector liberalisation.

In decadal comparison, there has been an increasing trend of investment – savings rate gap of the government sector indicating more fiscal deficit, albeit, declined marginally in the 1990s, may be this fiscal correction due to fiscal consolidation. However, the overall Indian savings and investment patterns across decades are consistent with the argument that domestic capital formation being largely dominated by domestic savings. Among the decades covered in

this study, each decade has one of the lowest degrees of reliance on net foreign capital inflows for financing domestic capital formation.

As estimated by its standard deviation (SD), it is worth to note that, opposing to stylised facts, the growth of GDP is smoother than that of private consumption while the growth of public consumption, investment, savings both at gross and sectoral levels, exports and imports are much more volatile across decades over the entire studied sample period. In other words, components of GDP are more volatile than output. It is indeed pertinent to note that, during the 1960s and 1970s, private consumption is less volatile than output and during the former decade; public consumption recorded its highest ever annual growth rate and investment recorded lowest during 1970s in Indian macroeconomic scenario. There has also been a declining trend in public investment since mid-1980s. In effect, the quest of this research is for the origin of comparative instability episodes in the 1960s and 1990s.

In the lower panel of Table 7.1, a correlation matrix for all the expected explanatory variables and the dependent variables has been obtained and correlation coefficients decade-wise are provided. Based on the correlation matrix, several variables are selected as the potential explanatory variables. Besides real GDP, the best three instability signifying economic indicators are inflation, gross fiscal deficit and current account deficit.

By and large, it is observed that the growth rate of GDP is positively and robustly well correlated with the growth rate of private consumption and, to a certain extent, with the growth rates of public consumption, investment, exports and imports. As observed the variable inflation rate has negative correlation coefficients with real GDP except in 1950s and 1980s and thus to be countercyclical for most of the sub-periods while the other three variables namely trade balance, fiscal deficit and current account deficit possess negative coefficients for most of the decades except for the latter with positive signs in the 1980s and 1990s as expected and to be fairly countercyclical. However, this long holding and fairly robust relationship between growth and inflation does not seem to have hold during the sub-period 1995-2003, as found correlation between them is 0.30 (not shown in the Table 7.1). Growth rate of real GDP and inflation rate though are found to influence instability but not significant statistically as the degree of explanatory power has reasonably not been good. However, the above Table 7.1

shows that in all cases, there has been a satisfactory relative separation of the high or fast growth and low or slow growth phases.

However, the 1960s and 1990s as compared to other decades remained lesser impressive to an extent and lagged behind in terms of overall macroeconomic performance considering the nature of basic economic indicators. This is not fully revealed by this correlation matrix, which gives only static cross correlation needs to consider lag length to be dynamic.

Thus to account a comparative perspective of twin recessionary episodes in the 1960s and 1990s, it is essential to understand the twin-deficit nexus explaining the causal direction of government public sector deficits and private surplus through interlinking their sectoral role in the light of debt management scenario. It would explain how the adjustment to the crises was engineered either by a fall in government public deficit rather than a rise in private surplus as a result of fiscal adjustment. It requires a more thorough examination of the fiscal sustainability issues and to capture the instability fundamentals as the result of a neglect of fiscal dynamics in making comparative instability perspective of this research. How exchange rate depreciation played a crucial role for current account adjustment as a competing hypothesis appeared needs to be analysed. It needs to include the discussion on the behaviour of the real exchange rate to understand how helped exports to grow quite rapidly and how helped rapidly inflation rate to be reversal in spite of the high domestic inflation. It suggests that India generally targets its inflation and growth targets over time as policy pursuits. In this way, all the sub-period of analysis fall under the different growth and inflation ranges.

However, it is probably difficult to get a comprehensive view about comparative instability episodes as the nature of the correlation carries such large information in a somewhat consolidated manner as presented in the above table 7.1. In such a context, an improved understanding of the interaction between policies and instability indicators such as how trade and financial linkages may propagate and amplify economic disturbances – fundamental economic influences that determine the movements of interest rates and exchange rates and thereby macroeconomic stabilisation in understanding the nature of disturbances that cause macroeconomic instability is required. Thus an in-depth investigation would, however, be needed to draw more information regarding the features of cyclical nature of Indian inflation in

the policy context before the present research passes judgement about the comparative perspective of recessionary episodes in the 1960s and 1990s along with its interim growth phases.

7.3. IDENTIFICATION OF INSTABILITY STAGES

This section provides a good base to identify Indian macroeconomic instability sub-periods in the de-trended measure of total economic activity. Smoothing has been applied with caution to reduce volatility to show local trends more clearly. The moving average can reveal the tendencies of the economy's movements better than the much more unsmoothed underlying data. The following Figure 7.2 shows the types, timing and duration of year to year growth cycle fluctuations. The purpose of this chapter is to examine phase-wise the historical sources of macroeconomic instability in India. In an attempt to obtain evidence regarding the existence of recessionary episodes and in order to ascertain whether inflation is pro-or counter-cyclical in the Indian economy, this sub-section has generated smoothed estimates of the growth rate of real GDP and inflation rate over the fifty four year period from 1950-51 to 2003-04 and these have been plotted in the following Figure 7.2 and Figure 7.3 respectively. There have also been fitted both a linear trend line as well as non-linear (cyclical by using five-year moving average end) trend line through these smoothed growth rates in the Figure 7.2while gross fiscal deficit and current account deficit as percentage of GDP over the sample period have been plotted in the Figure 7.3.

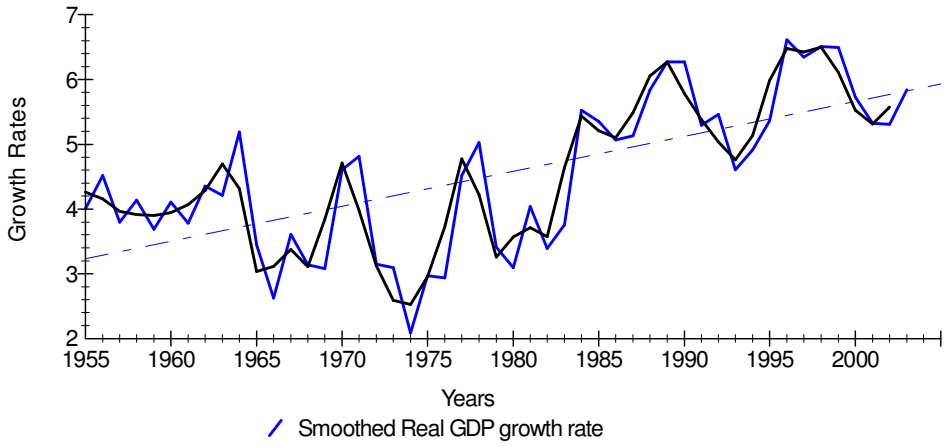


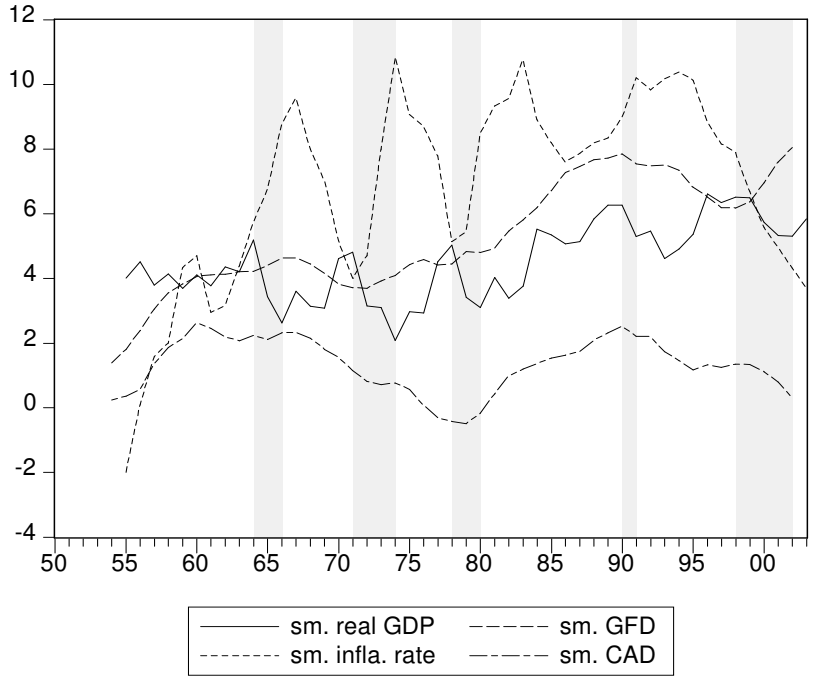
Figure 7.2**:** *Stages of Macroeconomic Instability and Real GDP Behaviour in the Indian Economy, 1950-51 to 2003-04*

Note**:** For smoothed GDP growth rate, annual GDP series at 1993-94 prices has initially been smoothed out by using five-years moving average method and estimates of growth rate were then computed from these smoothed data-series.

Source: compiled from NAS, CSO, EPWRF, 2004

There has been an overall increase in real GDP rate in India through the post-independence period, though with considerable fluctuations from year to year. Two specific episodes of instability behaviour in India in the 1960s and 1990s, which represented a significant departure from the overall trends, have generated a considerable discussion to probe on the underlying causes. The first episode was in the mid-60s, when real GDP growth rate fell sharply to negative values after almost a decade of sustained growth from the first year of the Five-Year Plan (see Fig. 7.2). The inflation peak and the rise in gross fiscal deficit and current account deficit have witnessed in the same period (see Fig. 7.3). The second episode was the decline in the real GDP growth rate to a bottom line immediately before the initiation of the structural adjustment cum stabilization programme of 1991. The other indicators like inflation rate, GFD and CAD recorded a reflection of an upward trend too. This brought about a comparative perspective to analysis why these adverse changes in the economic fundamentals during this two sub-periods. Such drop in real GDP was also pronounced in the early and late-70s. And India's performance has continued to be impressive in the 80s as such drops were far less pronounced as maintained growth performance consistently apart from some notable stylized facts. Interestingly, such drops were also pronounced in the immediate post-reform period, reflecting structural changes in the economy brought about by reforms.

These general patterns, inter-decadal differences in growth rates, reflect a variety of comparable factors, including differences in the overall macroeconomic climate. Moreover, there are significant differences across decades with regard to restrictiveness of the policy regimes relating to stabilization and growth. Behind these overall similarities between instability patterns in the 1960s and 1990s, significant differences can be observed across sub-periods in terms of the degree of reliance on macroeconomic policies for growth and stability.



Note: Shaded areas represent Indian macroeconomic growth downturns (recessions) and inflation peaks.
'sm' means smoothed
***Source*:** compiled from NAS, CSO, EPWRF, 2004
***Figure 7.3*:** *Macroeconomic Instability Indicators: Indian Economy, 1950-51 to 2003-04*

The results, which have been presented in both the figures 7.2 & 7.3, have extremely been interesting on the following counts. *First*, empirical regularity in the ensuing patterns of growth is clearly reminiscent of sub-periodic recessionary behavior. *Second*, there seems to be a certain pattern of symmetry in the behavior of cyclical trend as have been superimposed upon the smoothed growth rates vis-a-vis the linear trend around which it is fluctuating, as are clearly visible while in each of these cases, the growth rate has followed the classical pattern of fluctuating around a cyclically- steadily increasing trend. It is vividly clear that the peaks of the cycles are relatively short-lived as compared to the troughs. *Third*, it is by and large observed that except for the ten years from 1952 to 1962 and the 1980s except the later years, the inflation rate seems to have clearly been counter-cyclical, often mirroring instability with almost identical turning points. *Fourth*, It is interesting to note that during the last phase of macroeconomic contraction from 1998-2002, both the growth rate and inflation rate seemingly shown sudden pattern reversal as to have moved in a clearly pro-cyclical manner as suggest their co-movements because they have comparatively been weak one. It is important to note

that pro-cyclical macroeconomic policies are the sources of macroeconomic instability. Pro-cyclical macro policies do not encourage growth and instead in fact increase growth volatility. If the five-year economic contraction pattern from 1998 to 2002 is indeed an empirical regularity, then the recession of 1997-98 has been the very much part of the sub-period which commenced in 1995-96, and seems to have gone by the observed trends and trough has been bottomed out as peaked in 1999-2000.

Finally, a cyclical expansion is usually believed to improve an economy's fiscal position by increasing tax receipts. Besides, this effect would be further underpinned by the counter-cyclical nature of inflation which would ensure minor scope for fiscal erosion [Olivera 1967; Aghevli and Khan 1978]. In Figure 7.3, there are also provided smoothed estimates of the fiscal deficit ratio (GFD) and the current account deficit ratio (CAD). The ensuing pattern in Figure 7.3 highlighted by the inverse nature of the association between the 'trench' in the real growth rates of GDP over the period 1988-95 and the corresponding 'bulge' in the fiscal deficit ratios seems to suggest that the above hypothesis is supported. The CAD as well as the GFD are usually linked within a general framework as their basic proximate determinants, mainly the rates of inflation and growth, are themselves endogenous variables. Thus, any meaningful analysis of these deficits requires that their fundamental causes be specifically identified as the general equilibrium nature of the problem is not only a theoretical issue because the current account balance is consistent with medium term fundamentals, such an economy's normal pattern of savings and investment. If the deviation of exchange rate from equilibrium stems from unsustainable policies, as with an appreciation associated with a large fiscal deficit, then policies should be adjusted rapidly in order to restore macroeconomic balance and dissipate the risk of disruptive shifts in market sentiment could by inviting speculative attacks lead to a financial crisis.

Any precise dating of the beginning and end of a crisis has somewhat been arbitrary in this research. This graphical section has analysed India's macroeconomic staying for which sub-periods either has been good or dismal and has also paid attention to draw the overall policy trends over the entire sample period. The present study has chosen the instability sub-period as the co-existence of economic contraction (i.e., peak to trough) accompanied with negative growth rate of real gdp as is characterized by pronounced, pervasive and persistent declines in output and inflation rate nearly double digit as is the rule of thumb. The instability

phases are shaded according to recession in each of the contraction phases across decades and at no other time. Even the most volatile of these series show few significant declines outside the shaded areas and the present study has been cautious to distinguish from these false signals being guided by historical sources economic rationale of instability. Negative changes are concentrated in recessions, with but a few minor exceptions such as 1991-92 when real growth rate of GDP was at much bottomed level with slight positive value. The popular rule of two consecutive declines in GDP applies in most but not here. It is important to note that economic slowdowns begin with reduced but still positive growth rates can eventually develop into recessions. India has experienced macroeconomic instability episodes characterized by pronounced, pervasive, and persistent declines in output, income and trade.

After 1957-58, the following recessionary sub-periods are clearly visible:

(i) during the 1960s, the two-year economic contraction with recession between1964-66;

(ii) during the 1970s, the four-year economic downturn including recessionary year 1972-73 between 1971-74; the two-year economic slowdown including recessionary year 1979-80 between 1978-80;

(iii) during the 1990s, bottom growth rate in 1991-92; and

(iv) five-year economic contraction between 1998-2002.

In this way, the results of instability phases are consistent with the earlier reported real GDP results in ACF estimation.

It is important to note that a chronology of growth cycles for the Indian economy for 1951-75 was established by Chitre (1982, 2001). The dates of Indian business cycles and growth rate cycles particularly recessionary sub-periods over the period from 1960 -2001 were established by a study [Dua and Banerjee, 1999; 2001]. Two similar close studies covering Indian economy over the period 1950-98 & 1950-2000 have been by Rao et al (1999) & Rao (2004). The other contemporary study particularly to explore Indian sub-periodic macroeconomic crises covering the sample period from 1964 -1991 was developed by Joshi & Little (1998).

7.4. EVALUATION OF INSTABILITY STAGES

This sub-section concentrates to account a general assessment of causes, policy responses, consequences and aftermath of each crisis in a chronological manner. It involves mainly an appraisal of the role of short-run macroeconomic policy in relation to the crises episodes. Here, the main concern is with policy in relation to crisis, not with a connected account of specific policies over the studied entire sample period. It involves a brief comparison of the symptoms and causes of the crises. High inflation and a marked deterioration of the balance of payments are the primary concerning issues in this analysis. The aspect of industrial recession though is important but got paid less pressing concern in this research as it has been mainly to evaluate stabilisation policies, which can also enhance the severity of recessions. This section highlights the underlying economic principles of temporary, reversible, anticipatory short-term supply side macro-management of exogenous shocks (viz. drought, political instability, oil crises, etc).

MACROECONOMIC CRISIS IN 1957-58

It is seen that price increasing began to dissipate in 1952 as inflation rate became negative as is partly true due to the end of Korean War as India saw easing of inflation [Desai, 2003]. During the first half of the 1950s, inflation in India was low and in some years negative so that real exchange rate depreciated modestly. However, 'export pessimism' led to high export taxes and neglect of investment and modernisation in the export sector, resulting into exports stagnated. Although the wartime machinery for administering import controls was still in place, the import regime was in practice fairly liberal. Capital controls were much more restrictive compared to import controls but in no way particularly fierce. Indian economy reached the trough of growth rate cycle in 1957-58 as the contraction of economic activity began to manifest followed by a severe balance of payment crisis after the second Five-Year Plan inaugurated in 1956, which was based on an ambitious heavy industrial development strategy. But a foreign exchange crisis in 1956-57 put an end to the phase of liberalisation and comprehensive import controls were brought in and maintained until 1966. Import licensing, one of whose crucial characteristics was the 'indegenous clearance' hurdle, which used to give automatic quota protection to any imports for which there were provisions of domestic substitutes. Controls on private capital movements were also overwhelmed and have remained extremely stringent ever since. Officially, the prevailing exchange rate regime was an adjustable peg Bretton-Woods

style regime [Patnaik, Kapur & Dhal, 2003]. However, in practice, it was operated as a fixed nominal exchange rate reinforced first by reserve losses, then by import and capital controls, and foreign aid. As reserve depleted, foreign aid and official foreign borrowing increased substantially. The real exchange rate appreciated substantially as inflation in India was relatively faster than inflation abroad.

MACROECONOMIC CRISIS IN 1965-67

The nominal exchange rate was fixed to the pound sterling and, given the nature of the Bretton Woods regime; the nominal exchange rate remained constant over 1960-65. But Indian prices continued to rise relatively faster than the foreign prices and the real exchange rate appreciated further. The appreciation was fairly modest from 1960-63 as was about 5 per cent but sharp in 1964 and 1965 about 16 per cent. Export subsidies were introduced and increased. However, real exchange rate appreciated by 13 per cent over the next two years despite increasing export incentives. The import control regime intensified in severity to the point when domestic industry was starved of essential inputs. In 1965, war and drought brought about macroeconomic instability. Exports grew moderately over 1960-63, stagnated in 1964, and collapsed in 1965.

Indian economy followed by the next trough in 1965-66 and 1966-67. The crisis of the mid-1960s seemed to have been due to snared Indian economic development strategy – its under-emphasis on agricultural development and its overwhelming priority on foreign aid that triggered to suspend the Five-Year Plan in favour of three annual plans over 1966-69. It is quite clear that the two consecutive years 1965-66 and 1966-67 during the 1960s were years of crises, as experienced negative growth rates. Several points are worth noting on this count.

The deeper possible manifold antecedents delved of these crises include: *First*, exogenous events like wars, as India, in the first half of the 1960s, had to involve in two wars – war with China in 1962 and with Pakistan in 1965; *Second*, the other exogenous event was harvest failure due to poor monsoons as this sub-period was severally hit by two successive severe droughts in 1965 and 1966; *Third*, the magnitude of the adverse effects of these droughts was intensified further due to the neglect of the agricultural sector in favour of industry in the Second five-year plan (1956-61) as this plan worked out a strategy of state-led, import-substituting industrialization; *Fourth*, the obstruction of remittances of profits was due to

controlled exchange rate system; *Fifth*, the other factor was due to lack of stress to import fertilisers for agriculture which, in turn, caused the slow growth of agricultural output and too much emphasis was on capital goods imports; exports were sluggish because held back partly by the inadequate supply of both agricultural and imported inputs; *Sixth*, further, there was not much done to improve the agricultural sector's performance in the Third five-year Plan (1961-66); *Seventh*, the special interest group with considerable political influence on policy making seemed to have been beneficiaries with industrial licensing policies dictated by political unfeasibility and not by economic rationality.

The macroeconomic consequences conceived the following instability channels: *First*, matters got made worse by the sharp growth of defense expenditures set off by the wars, increasing the consolidated government fiscal deficit, public fixed capital formation under the Third Plan was slow to get under way, government final consumption expenditure rose; *Second*, total agricultural production to value added fell to a considerable lower level and growth rates became negative in two quick successions in 1965-66 and 1966-67 and the shortage of food grain output was further worsened as United States refused to renew food aid (PL 480) in 1965 as consequence of the war with Pakistan.

As a result, inflation accelerated to a double digit in 1966-67 and was creeping as foodgrain prices rose sharply though there may be a lag impact of foodgrain production and their full effect on prices; a rate regarded at the time was dangerous and intolerable. India had to increase food grain imports as famine was looking feared. Despite there were imports, food-grain availability seemed to have remained far adequate to chase the crisis. Once US aid was scaled down in 1966, the payments deficits became unsustainable, and the rupee was devalued. Then, in the absence of aid, government investment had to come down; a plan holiday for three years declared, and constructions of new public sector plants came to a halt, industries built up with secure import barriers proved unviable. Thus 1966 turned out to be a turning point in the India's economic history. Exports also suffered from the drought, and despite being upsurge total net aid, the balance of payments was under tremendous strain with foreign exchange reserves hovering close to their statutory minimum level. The underlying balance of payments situation deteriorated considerably in 1965-66 and 1966-67.

The government's policy response to this crisis had several components: the devaluation – liberalisation-aid package, the management of food supplies, and conventional demand management. The devaluation package had of course been negotiated prior to the crisis and was seen as a long-term measure. So, it was a response only in the sense that it was introduced after the onset of the crisis, though there was no doubt a hope that it would ease the balance of payment problems. The concerning aspects with devaluation package believe clearly engendered serious ill feeling, which persisted and continued to influence Indian macroeconomic policy for some years. But the uncertainty evolved around probably the exacerbated price inflation at the time and - for good or ill- strengthened India's determination to rely as little as possible on aid, and even on trade in the future. Exports of traditional goods also worsened and the dollar value of exports fell in 1966-67 and in 1967-68 due to droughts, despite the devaluation in 1966. The balance of payments situation improved after 1966-67, mostly due to the fall in food imports after the agricultural recovery and the decrease in capital goods imports. It is important to note that both the second and third plans were financed in a non-inflationary manner.

The devaluation could take the place of the highly selective and inefficient system of export subsidies that should be abandoned. At the same time, control over imports of most raw materials and components (but not the major items of machinery and equipment and consumer goods) should also be relaxed. The devaluation was not so much to contain the current account deficit but to achieve a balance of higher level with a much more limited set of controls. Most of the policy recommendations were adopted in 1966 to protect macroeconomic crisis. During the 1960s, the first great drought had occurred, reserves were at depleting level, inflation was accelerating and famine was looming large.

Food-grain production picked up in the next calendar year 1967 due to the impact of green revolution. But the crisis of 1965-66 and 1966-67 was superimposed upon a 'quiet crisis' or a creeping paralysis that had been evident for several years more. The slow growth of agriculture and exports coupled with the venture to continue with the investment programmes of the Third Plan yielded the balance of payments into deficits that was restricted only by import controls of such strictness in which production and exports hampered. In the absence of a buffer stock, sound food policy, public procurement policies through public works, food prices and consumption could have been cushioned from the effects of the drought by imports

of food but foreign exchange reserves constrained the imports. The limitations on supply management policies triggered the pressure for a fiscal response to the crisis. There had also been a mild industrial deceleration due to a reduction in demand from the agricultural sector and shortage of agricultural raw materials and imported inputs. Restrictive fiscal policies followed during this period that accentuated deceleration. The worst hit sector was that of capital goods where the production fell considerably over the two-year periods 1966-67 and 1967-68 and rose gradually after that. As reported by a study that the mid-sixties evidenced the emergence of underlying strains as well as a few new factors which were to change the course of industrialisation in the following period [Ahluwalia, 1985]. Another study attributed the deceleration as structural retrogression [Shetty, 1978].

Thus the diagnosis very closely of the two recessions in the 1960s in line with the description given above can be explained by the two wars, a drop in agricultural output, industrial deceleration, restrictive fiscal policies, the BOP crisis, and high inflation.

MACROECONOMIC CRISES OF 1972-75: ANTECEDENTS, CONSEQUENCES AND POLICY RESPONSES

Indian economy during the 1970s has basically been stifled by controls as the product of an interventionist approach. However, in the 1970s, some liberalization occurred. One obvious example is the greater flexibility in the use of the exchange rate, which came in stealthily first under the cover of a sterling peg, later under the guise of a multicurrency basket. According to this study, 1972-73, 1973-74 and 1974-75 during the 1970s were crises years. Several factors initiated the recession occurred in 1972-73 that had a political component and a macroeconomic component, which in turn later had an inflation component and balance of payments component as well. These different components interacted rather in a dispersed way. The agitation in 1971 in the then erstwhile Pakistan resulted in a huge influx of refugees into India causing an enormous economic burden. Indo-Pakistani relations deteriorated, which culminated in a war in 1971. The grounding and carry out of this war yielded in a sharp rise in defense expenditure over and in excess the expenditure incurred to support the refugees. The agriculture sector was severely hit in 1972-73 as poor rainfall resulted in sharp drop in foodgrain and agricultural production. At the same time, foreign aid sanctioned by United

States declined even more sharply before the war of 1971 and was virtually ceased to stop in 1972-73. Thus, at a time when India was struggling to tackle the high expenditures owing to drought and war and also had felt the need to increase capital investment to make up for the stagnation in the late 1960s, support in terms of foreign aid fell significantly. This increased the reliance of the government on borrowing from the RBI, fuelling inflationary impacts. During this period, the management of food supplies in response to the crisis was also not effective. Not only agricultural production fell in 1972-73 but food imports were also delayed. Moreover, government bought far less than what was authorized so that food availability being necessary. Furthermore, India had to pay very higher prices on the world wheat market due to the delay in purchases. The government in an attempt nationalized wheat trade in 1973 in order to abolish middlemen but instead the situation aggravated and the scheme had to be disposed of. The macroeconomic crisis came with the oil crisis in October 1973; the Arab countries took control of their own oil production and raised the oil price manifold. And the blow was both external and internal. Externally, the balance of payments again became unsustainable, and the government had to mess up to borrow money from abroad. Internally, price hiked suddenly accelerated, and led to strident demands for wage increases. The government itself was in frantic trouble, and could not meet the wage demands. Hence came with the railway strike in 1975, which had to be suppressed brutally. The balance of payments started deteriorating in 1973 due to rise in the prices of imported goods, particularly oil. The oil price shock increased oil prices in 1973. Worsened terms of trade had been coupled with increased current account deficit. The facet of the crisis was mainly external in origin but was coupled with domestically caused inflation. As evidenced by the Figure 7.2, inflation accelerated from single digit in 1971-72 to double digits in the following three years. It was resulted mainly by internal factors, specifically the severe droughts of 1972 and 1974, accompanied with expansionary macroeconomic policies. The political circumstances became growingly unstable during 1973 and 1974, somewhat but not entirely due to inflation and food shortages, subsumed in the imposition of a national emergency in 1975.

THE CAUSES OF THE CRISIS OF 1979-80 AND ITS CONSEQUENCES

The dilution of fiscal conservatism was vividly evident in the upward creep in fiscal deficits after the mid-1970s. However, it did not lead to more than a small increase in inflation or inflation-tolerance. Fiscal and monetary policies continued to counter robustly to overt inflation i.e., continued to be relevant as was capable to slate short-term anti-inflationary policies may be due to comfortable parliamentary majorities. Though the rate of inflation did not increase much, fiscal deterioration was instantly recognizable. The consolidated government's fiscal deficit was about 5 per cent of GDP in mid-1970s. The basic argument for the deterioration in the public finances to examine why the fiscal aspects of these changes evident particularly from the mid-70s, in particular the following may be mentioned: first, green revolution in the 1960s brought into prominence the larger landlords emerged as growing demand groups to make claim on state resources in the budgetary processes; second, the dominant groups of significance were the big industrial capitalists; third, small businessmen and traders became the dominant pressure group and their interests were congruent with demanding tax concessions and the reservation of products for small enterprises production particularly when reservations for small- scale industry were greatly expanded; fourth, organized sector workers also became a significant pressure group as the public sector expanded and acquired enormous influence because they were in charge of managing the system of control [Kohli, 1991]. Thus government adopted measures that increased government expenditures or reduced tax and non-tax receipts and these changes acted slowly and were sometimes interrupted by fiscal retrenchment containing inflation or by the temporary ascendancy of fiscal conservatives. However, the general trend in the 1970s and 1980s was unmistakable. In sum up, the persistence of control system was in turn another manifestation for fiscal deterioration resulted from pervasive controls.

The most worth noting event was the rapid turnaround of the balance of payments by 1976, the crisis was over and payments became perfectly manageable. Even the mini-oil crisis of 1978-79, India could have managed with great ease as India unlike many developing countries did not borrow heavily in those years. As India had not taken recourse to private loans, and so escaped catastrophe while others had defaulted on their international debts. Then in the early 1980s, oil started to flow from Bombay High, and India's balance of payments seemed looking extremely solid. The 1979-80 crisis was resulted by the simultaneous

occurrence of both internal and external shocks. The drought in 1979 was very disastrous resulting in a severe drop in agricultural production. Indian economy also suffered from the consequences of the international oil price jump. At the same time, home oil supplies also disrupted by the agitation in Assam, which accounted for a-third of India's oil production. All these factors resulted power shortages leading further shortages of coal and transport facilities. The effects of drought accompanied with the shortage of key inputs triggered to an industrial recession. This situation led to both high inflation and a large current account deficit. Prices were almost flat in 1978-79 but rose by double-digit percentage in the immediate following three years consecutively. The current account of the balance of payments was in surplus in 1977-78 but went into a deficit in 1979-80 and 1980-81.

Thus, the origin of the crisis was essentially similar to that of 1973. Nevertheless, the aftermath was quite different. In its response, the government attempted to bring about an expansionary adjustment, adopting much less restrictive measures. Though inflation came down in 1982-83, the current account deficit remained high, and the public finances worsened. This seemed underpinned current account and fiscal deficits to be even larger during the second half of the 1980s. After the short-lived recession, Indian economy grew rapidly during the 1980s. Growth rate of GDP per annum increased from about 3% from the mid-sixties through the seventies to around 5.88% in the eighties. This expansion lasted for the longest period from 1980 to 1990 under the study as shown by the Figure 7.1. The economic reforms initiated from the mid-eighties onwards attributed the expansion. The manifold measures included industrial deregulation, financial liberalization, import deregulation, export incentives, exchange rate depreciation, and tax reforms. The drought in 1987 was not so severe and the agricultural sector recovered soon after. More liberalization occurred in 1980, which was mainly concerned with deregulation of industrial licensing and softening of the restrictions on monopolies and both these measures seemed to have big business support as they were not accompanied by any serious trade liberalization. However, the pace of industrial deregulation was much faster in the late 1980s and the import liberalization related mainly to inputs and components but very little was done to open up Indian industry to foreign competition. In summary, liberalization consisted little more than the piecemeal deregulation of industrial licensing and the introduction of a measure of exchange rate flexibility. However, interventionist ideology prevented any

significant action in the more difficult areas such as trade liberalization, financial liberalization, and reforms of the labour market and public sector enterprises.

More importantly, there was expansionary fiscal policy, the manufacturing sector continued to grow, and exports also increased. At the same time, it is clear that the underpinning macroeconomic fundamentals were not adequate enough to keep sustaining the expansion. Fiscal and current account deficits were large and the burden of domestic and foreign debt was heavy and unsustainable. The consolidated government's fiscal deficit rose persistently to reach about 8 per cent of GDP at the end of the 1980s. At that level, it clearly endangered to explode into high inflation or a balance of payments crisis. As the macroeconomic fundamentals were weak, the Iraqi attack of Kuwait in 1990 and the Gulf War were enough to set on a full-blown crisis. However, the overall development of macroeconomic policy that took place till 1991 has two important features: there was an erosion of fiscal conservatism; and there was a gradual and piecemeal liberalization of controls, but without having any fundamental reforms of the system.

MACROECONOMIC CRISES IN 1991

Macroeconomic instability episodes before 1991 were driven mainly by weather, wars and oil crises. In 1991, the Indian economy was delved in the throes of a macroeconomic crisis. By the early 1980s, many developing countries went bankrupt, and international bankers were short of borrowers; India with its sustainable balance of payments looked very attractive. Bankers especially Japanese ones, poured money into Indian economy in the 1980s which was one of the precipitate roots of the payments crisis in 1991[Desai, 2003]. The crisis made India's credit rating sharply downgrading and a cut off of foreign loans. Despite that, unlike earlier crises, exogenous factors were relegated with minor importance in causing the crisis, as it was largely policy- induced because past macroeconomic policy mistakes over a long-period had left the Indian economy in a fundamentally unsound state and wrong footing. Inflation, fiscal and current account deficits, and domestic and foreign borrowing all manifested high. There had been a steep depletion in foreign exchange reserves even inadequate to a level of two-week imports. In these circumstances, structural reforms were initiated by the government in 1991. The immediate concerns of the reforms were to contain inflation, reduce the fiscal deficit, improve the BOP position, and above all, to stabilize the economy. Measures that were

undertaken included fiscal contraction, a credit squeeze, and a devaluation of the rupee. The instantaneous impact on the economy was contractionary.

MACROECONOMIC CRISIS IN 1997

The recovery or expansion, which started in late 1991 continued to exist until when the macroeconomic growth rate once again downturned in 1997. The liberalization and reforms adopted following the external crisis of 1991 had initially rewarded with an improvement in almost all the economic indicators because GDP growth rate, exports, investment, and foreign exchange reserves rose rapidly. However, by 1995, reform process had itself lost its momentum. Moreover, the elections in 1996 brought forth a coalition government short-lived could not focus on key economic issues. Industrial production, industrial investment, and consumer demand fell sharply and the economy faced infrastructure bottlenecks. The macroeconomic crisis lasted for one year. This has by and large been subjected on the long-awaited package of 'second- generation' reforms to have adequate measures for technological developments, institutional reforms, and policy innovations for further growth prospects. By the late 1990s, the agricultural sector accounted for only 20 per cent of the GDP, dropped from 35 per cent in the late 1970s. Meanwhile, the development of irrigation seems to have made agriculture dependent far less on weather, and the creation of substantial buffer stocks of food-grains has made the economy far less vulnerable to crop failures. Thus the economy has now been much less susceptible to weather-related shocks.

CONCLUSION

This analysis basically involves short-term supply side macroeconomic policy appraisal. The next chapters would concentrate on long-run demand-management policy trends on long-run growth; sustainability aspects of fiscal policy, monetary policy, and expenditure switching devaluation of exchange rate policies; on deficits indicators such as gross fiscal deficit, current account deficit and the role of sectoral savings and investment in the Indian macroeconomic growth process over the entire studied sample period including disequilibrium dynamic episodes.

However, the findings that this chapter has been able to draw are very suggestive, but not definitive. Despite certain minor problems of definitions and measurements left unresolved with regard to Indian macroeconomic instability analysis, the resulting integration in this chapter helps to detect the structural changes occurred in the real and financial sectors of the Indian economy over the entire sample period, in general, and between the pre- and post-liberalisation phases, in particular. In such a context, it has, apart from delineating the overall trends, identified many important empirical patterns and regularities to facilitate translation of certain important theoretical constructs on structural adjustment problems into various policy relevant solutions and interrelationships for the formulations of issues in the role and conduct of macroeconomic stabilisation policy with particular emphasis is placed on the specific episodes on macroeconomic dips in order to set the stage for the empirical analysis in this ensuing research. It has dealt with notably growth-inflation trade-off, the existence of recessionary episodes, the counter-cyclical nature of inflation, the twin deficit problem, the sustainability of fiscal stance, amongst others, which could act as guideposts to understand the issues of macroeconomic instability particularly to facilitate an in-depth and rigorous empirical investigation in the subsequent chapters, identifying the underlying plausible instability linkages by providing information about policy implications of the crises-ridden episodes and assessing which of the policies have either been pro-cyclical or counter-cyclical in nature. The findings are carefully analysed pertaining with key policy shifts in India. However, the best kind of approach for a more complete understanding of macroeconomic instability is through causal dynamic relationships specified by macro-econometric analysis via detailed structural model building. The next two chapters would summarise the key findings for comparative instability perspective and draw upon policy lessons in the wider context.

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