Mr. Rangarajan examines the objectives of monetary policy and price stability in relation to the economy of India Address by the Governor of the Reserve Bank of India, Mr. C. Rangarajan, at the Second Conference of the Econometric Society's Regional Chapter for India and South Asia in Delhi on 28/12/96.

1. It gives me indeed very great pleasure to be in your midst this morning. It is indeed very gratifying to note that the Second Conference of the Econometric Society's Regional Chapter for India and South East Asia is being held in Delhi.

2. Econometrics as a discipline has come a long way. Enriched by the developments both in mathematical economics and statistical methods, econometrics has today become an indispensable tool to all practitioners. Without a numerical evaluation of economic magnitudes, economic theory would have been of little use in economic policy. The original motto of Cowles Foundation was 'Science is measurement'. It used to be said that in economics the tendency of theory to lag behind observations seemed to be endemic. We have definitely moved away from that situation. While alternative theories to explain a set of phenomena are not necessarily a weakness and may even be regarded as a sign of vitality, the continued co-existence of alternative theories over a substantial period of time without being able to discriminate among them can result in the loss of credibility in the discipline itself. This in part is the present status of economics. The future scope of econometrics is thus immense.

3. I would like to take this opportunity given to me this morning to raise one issue in monetary policy that still remains contentious despite overwhelming agreement among policy makers in industrially advanced countries. The issue relates to the objective of monetary policy. The question is: *What should be the objective or objectives of monetary policy and whether in the Indian context, maintenance of price stability should be the dominant objective of monetary policy?*

4. The issue of objective has become important because of the need to provide clear guidance to monetary policy makers. Indeed this aspect has assumed added significance in the context of the increasing stress on autonomy of central banks. While autonomy has to go with accountability, accountability itself requires a clear enunciation of goals.

5. Monetary policy has now moved to the centre stage of economic policy-making the world over. In the 1930s and in the first two decades after the Second World War, monetary policy was relegated to the background. The ascendancy of fiscal policy during this period was due in part to the depression of the 1930s, and the process of reconstruction immediately after the Second World War and the acceptance of the Keynesian dictum that fiscal action was necessary to prevent deficiency in the aggregate demand. However, the 1970s saw the emergence of a combination of high inflation and low growth - 'stagnation' as it came to be called - and the standard Keynesian analysis was hard put to explain that phenomenon. Consequently, monetary policy re-emerged as an instrument of economic policy particularly in the fight against inflation. Issues relating to the conduct of monetary policy came to the forefront of policy debates in the 1980s. The relative importance of growth and price stability as the objective of monetary policy as well as the appropriate intermediate target of monetary policy became the focus of attention. Over the years, a consensus has emerged among the industrially advanced countries that the dominant objective of monetary policy should be price stability. Incorporation of this objective in the Maastrischt Treaty is indeed a reflection of this consensus. Differences however, exist among central banks even in industrially advanced countries as regards the appropriate intermediate target. While some central banks consider monetary

aggregates and therefore monetary targeting as operationally meaningful, some others focus exclusively on interest rate even though the inter-relationship between the two targets is well recognised.

6. A similar trend regarding monetary policy is discernible in developing economies as well. Much of the early literature on development economics focused on real factors such as savings, investment and technology as main springs of growth. Very little attention was paid to the financial system as a contributory factor to economic growth. In fact, many writers felt that inflation was endemic in the process of economic growth and it was accordingly treated more as a consequence of structural imbalance than as a monetary phenomenon. However, with the accumulated evidence, it became clear that any process of economic growth in which monetary expansion was disregarded also led to inflationary pressures with a consequent impact on economic growth. Accordingly, importance of price stability and therefore the need to use monetary policy for that purpose also assumed importance in developing economies. Nonetheless, the debate on the extent to which price stability should be deemed to be the over-riding objective of monetary policy in such economies continues.

7. Monetary policy is an arm of economic policy and in that sense, the objectives of monetary policy are no different from the overall objectives of economic policy. The broad objectives of monetary policy in India have been

a) to regulate monetary expansion so as to maintain a reasonable degree of price stability; and

b) to ensure adequate expansion in credit to assist economic growth.

The emphasis between the two objectives has changed from year to year depending upon the conditions prevailing in that and the previous year.

8. The question of a dominant objective arises essentially in view of the multiplicity of objectives and the inherent conflict among such objectives. Jan Tinbergen had argued decades ago that it was necessary to have at least one instrument for each target. In this regard, it must be recognised that certain objectives are better suited or more easily achieved with certain instruments than with others. This ‘assignment rule’ favours monetary policy as the most appropriate instrument to achieve the objective of price stability.

9. The crucial question that arises is whether the pursuit of the objective of price stability by monetary authorities undermines the ability of the economy to attain and sustain higher growth. A great deal of research effort has been spent on the examination of the trade-off between economic growth and price stability.

10. The well known Phillips curve showed that there was an inverse relationship between rate of change in wage rate and unemployment rate suggesting thereby a trade-off between inflation and unemployment. The original article of Prof. Phillips was published in 1958. The Phillips curve relationship has subsequently been challenged both from theoretical and empirical standpoints. The downward slope of the curve arises basically because of the presence of money illusion and expected inflation deviating from actual inflation.

11. At present the controversy is centred around the possible short-run and long-run ‘trade-off’ between inflation and unemployment. This distinction primarily stems from

the assumption of ‘error-learning’ process in the determination of inflationary expectations - workers do have an anticipation on the inflation, but because they judge the inflation performance from the past data, the adjustment between the expected and actual inflation is slow. This implies that in the short-run, nominal wage rise will not fully absorb the actual inflation, and as such, it is argued, there is scope for reducing unemployment through inflation. As people adjust their expectations of inflation, the short-run Phillips curve shifts upward and the unemployment rate returns towards its ‘natural’ level. As the expected inflation catches up with actual inflation, the Phillips curve becomes vertical, denying thereby a ‘trade-off’ between inflation and unemployment in the long run. The Phillips curve thus provides at best a temporary trade-off between inflation and unemployment when the economy is adjusting to shocks to aggregate demand and as long as expected inflation is lower than actual inflation. The long-run Phillips curve becomes almost vertical at the natural rate of unemployment.

12. Of course, there is a possibility of lengthening the short-run ‘trade-offs’ indefinitely, since inflation surprises in each period can elongate the long-run perpetually. But, in that case the ‘trade-offs’ will become sharper in each successive period. In other words, to maintain the unemployment below the ‘natural’ rate, policy authorities will have to inflate the economy at higher rates in each successive period. This has a major policy implication even if the economy does not operate on the long-run vertical Phillips curve. Under the ‘rational expectations hypothesis’, as there are no deviations between ‘actual’, and ‘expected’ inflation, both in the short-run and long-run, Phillips curves are treated as being vertical with no trade-off between inflation and unemployment.

13. Another policy related question is the shape of the short-run Phillips curve itself. In the real world wages and prices remain sticky, as employment contracts are fairly long and there is also a cost in changing the individual prices too often, or renegotiating wages each time after a price rise. As argued by Fischer (1994), the nature of stickiness in wages and prices could be different in different economies and this could also be a function of the inflation history of the country concerned. Countries with high inflation rates tend to find themselves on the steeper portion of the short-run Phillips curve than low inflation countries which are more likely to be on the flatter side. Therefore, ‘trade-off’ between price stability and employment or output even when it does exist, is sharper for countries with relatively high inflation rates than those with low inflation rates.

14. The case of price stability as the objective of monetary policy rests on the fact that volatility in prices creates uncertainty in decision making. Rising prices affect savings adversely while making speculative investments more attractive. The most important contribution of the financial system to an economy is its ability to augment savings and allocate resources more efficiently. A regime of rising prices vitiates the atmosphere for promotion of savings and allocation of investment. Apart from all of these, there is also a social dimension. Inflation affects adversely those who have no hedges against inflation and that includes all the poorer sections of the community. Of course, a critical question in this context is at what level of inflation the adverse consequences begin to set in.

15. Inflation affects fiscal balance in several ways. It adversely affects fiscal deficit when elasticity of expenditure to inflation is higher than that of revenue. A more significant impact of inflation arises from its effect on interest rate and the dynamic sustainability of the fiscal situation. High rates of inflation signal weak resolve to control inflation and imply higher expected inflation in future. This gives rise to upward rigidity in nominal interest and leads to high debt service burden on the budget, thus reducing the manoeuvrability of fiscal management.

16. It is well recognised that adverse implications of inflation are higher at high rates of inflation, while a moderate inflation rate could be manageable without implying severe costs. International evidence suggests that the costs of uncertainty tend to rise in a non-linear fashion with inflation rate exceeding a threshold. One important caveat in interpreting the threshold of inflation rate beyond which costs exceed benefit is the provision of inflation protection measures available in the economy, which tends to moderate the adverse implications to some extent. Countries with a moderate inflation rate but inadequate indexation provision may show a higher degree of sensitivity to inflation, than those with low inflation. Most of the industrialised countries in the recent years have moved into an inflation rate ranging between two to three per cent. Among the developing countries, some of the fast growing East-Asian economies have in recent years not only demonstrated low inflation rates ranging between three to five per cent, but the growth rate at these inflation rates has been fairly high at around eight per cent.

17. Empirical evidence on the relationship between the inflation and growth in cross-country frameworks is somewhat inconclusive because such studies include countries with inflation rate of as low as one to two per cent as well as countries with inflation rates going beyond 200 and 300 per cent. While a number of studies have concluded that the negative impact of inflation on growth is high at high rates of inflation, there is no consensus about the threshold inflation rate beyond which the negative impact becomes pronounced. A study by Bruno indicated that growth rates declined steeply as the inflation rate went beyond 25 per cent. Another study also based on cross section of countries reported that the negative effect of inflation was very pronounced and powerful at inflation rates exceeding eight per cent. What the appropriate inflation threshold beyond which costs tend to exceed benefits need to be estimated for each country separately. Nevertheless, people worry about even moderate inflation levels because if not held in check, a little inflation can lead to higher inflation and eventually affect growth.

18. A macro-econometric model of the Indian economy shows that a 10 per cent sustained increase in real public investment in non-agriculture sector, financed by money creation leads to an annual inflation rate of about 2.3 per cent and additional GDP growth of one percent, on an average, during the first two years, while in the span of 10 to 15 years, inflation rate rises to about 17 per cent per annum and additional output growth slows down considerably to average 2.7 per cent during this period. This implies that in the long run a sustained improvement in the growth scenario through monetary financing of the deficit could involve a severe trade-off in terms of inflation - every one per cent additional output growth implies nearly 6 to 6.5 per cent rise in inflation rate in the long run.

19. Obviously, there are some critics of price stability as the dominant objective of monetary policy. For example Prof. Paul Krugman writes

> '.....the belief that absolute price stability is a huge blessing, that it brings large benefits with few if any costs, rests not on evidence but on faith. The evidence actually points the other way: the benefits of price stability are elusive, the costs of getting there are large, and zero inflation may not be a good thing even in the long run.'

The observations of Prof. Krugman as they stand are not directed against price stability as an objective but are aimed against a policy which seeks 'absolute' price stability and attempts to bring down the inflation rate from around two per cent to almost zero. This is evident from what he himself advocates:

> '.....adopt as a long run target fairly low but not zero inflation, say three-four per cent. This is high enough to accommodate most of the real wage cuts that markets impose, while the costs of the inflation itself will still be very small.

Interestingly, in India, the Chakravarty Committee (1985) treated an inflation rate of four per cent as 'the acceptable rise in prices' purported to reflect 'changes in relative prices necessary to attract resources to growth sectors'.

20. We, in India, need to have an appropriate fix on the acceptable level of inflation rate. In the 1970s, the average annual inflation rate as measured by the wholesale price index was nine per cent. In the 1980s, it was eight per cent. However, in the period between 1990 and 1995, the average inflation rate has remained around 10 per cent. The objective of the policy should be to keep the inflation rate around six per cent. This itself is much higher than what the industrial countries are aiming at and therefore will have some implications for the exchange rate of the rupee. Monetary growth should be so moderated that while meeting the objective of growth it does not push the inflation rate beyond six per cent.

21. A question that arises in this context is whether monetary policy by itself is able to contain inflationary pressures particularly in developing economies like ours. It is true that developing economies like India are subject to greater supply shocks than developed economies. Fluctuations in agricultural output have an important bearing on the price situation. Nevertheless, continuous increase in prices which is what inflation is about cannot occur unless it is sustained by a continuing increase in money supply. Control of the money supply has thus to play an important role in any scheme aimed at controlling inflation.

21. The controversy over the objective of monetary policy has reached such a pitch that some have described central bankism as a religion with hard money as supreme god and inflation as devil. Let me however say that the commitment to a reasonable degree of price stability is not a dogma. It is good economics.