Duvvuri Subbarao: Statistics and statistical analysis at the Reserve Bank of India

Inaugural address by Dr Duvvuri Subbarao, Governor of the Reserve Bank of India, at the third Annual Statistics Day Conference of the Reserve Bank of India, Mumbai, 2 July 2009.

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I am delighted to be here today to inaugurate this third Annual Statistics Day Conference of the Reserve Bank. It has now become a tradition for us to mark the Statistics Day as a tribute to late Professor P.C. Mahalanobis and his colossal contribution to the development of statistics in India, both as an academic discipline and as a tool for public policy. The Mahalanobis model of development planning, based as it was on statistical data analysis, marked an important milestone in India's development history. The large-scale sample survey techniques, as practised today, owe their foundation to the pioneering work done by Prof. Mahalanobis. The Reserve Bank is happy to honour the memory of Prof. Mahalanobis on this Statistics Day.

This year's Statistics Day is important for another reason. It is a part of the several learning events we are planning over the course of 2009-10 to mark the Reserve Bank's Platinum Jubilee. I have no doubt that improving our understanding of statistical analysis and learning of the best practices in this area will help the Reserve Bank deliver on its mandate much better.

We are privileged to have a person of the eminence of Prof. T.N. Srinivasan at this year's Statistics Day. Prof. Srinivasan, currently the Samuel C. Park Jr., Professor of Economics at Yale, has very distinguished academic credentials and is acknowledged as one of the leading authorities in the world on trade and development. A significant amount of his work has involved statistical analysis, and we look forward to learning from his scholarship and his analytical insights during this Conference.

I also want to take this opportunity to acknowledge three of our special guests. Prof. J. K. Ghosh, presently a professor of statistics at Purdue University, was formerly the Director of the Indian Statistical Institute. He is a world renowned authority on Bayesian statistics. Prof. Arijit Chaudhuri of the Indian Statistical Institute is among the foremost experts in surveys. Prof. Chaudhuri extended the scope of survey methodologies in the area of multi-stage sampling, designing complex surveys, randomized response surveys and small area estimation. Finally, and importantly, we have with us Dr. Wilbert van der Klaauw, Assistant Vice President of the Federal Reserve Bank, New York. Dr. Klaauw is heading the Fed's project team on inflation expectations, an area of keen interest, and may I add, perplexing challenge, to central banks around the world.

Once again, a very warm welcome to all of you to this Annual Conference.

Three challenges

Statistics and statistical analysis are central to a lot of what we do in the Reserve Bank. Many of the decisions that we have to make and judgments that we have to form are based on analysis and interpretation of data. Quite evidently, we are often plagued by incomplete, inconsistent or non-timely data. All of inductive learning is a progression along the intellectual hierarchy – from data to information to knowledge to wisdom. The relevance and effectiveness of our policy judgments, therefore, depend crucially on the quality of data and the efficacy of analysis and interpretation. It is important, therefore, for public policy institutions like the Reserve Bank of India, to focus on statistics and statistical analysis. To give this task a specific focus, I would like to highlight three challenges in the area of statistical analysis and interpretation that this Conference can address.

First, what are the gaps in the official data and data analysis and how do we bridge them? The quality of data that various official agencies, both in India and abroad, collect depends critically upon the completeness and accuracy of the responses. Significant non-responses and time-varying pattern of responses can provide misleading information and result in sub-optimal policy responses. But, how do we get credible and complete data, and that too in good time? In a liberalised economic environment, it is no longer possible to mandate submission of data or responses to surveys by official fiat or regulatory prescription. Also, with globalisation, it is becoming increasingly difficult to get credible and timely information on cross-border flow of goods, services and capital. The first challenge, therefore, is what steps do the official data agencies need to take to ensure that data are comprehensive, consistent and timely?

Second, our official statistical agencies have made several efforts to improve the collection and dissemination of statistics. Yet, there is scope for significant improvement in, for example, the construction of WPI or IIP, where the coverage baskets have to be more representative of target populations. Given the fast pace of changes in the structure of the economy in the face of deregulation, liberalisation, and competitive forces, it is important that the various indices such as WPI or IIP, which attempt to capture the underlying developments in the economy, are refined and updated on a continuous basis to provide timely information to the policymakers.

Third, in the context of more open economies and improvements in communication, market dynamics have become sensitive to data releases and information dissemination. All of us are aware of how market participants oftentimes misinterpret information, triggering considerable volatility in markets. We can help manage expectations and perceptions better by focussing attention on data standards as well as improving the quality of our statistics education. This is the third challenge.

I hope this Conference will come up with some specific thoughts on how we may address these above challenges.

Statistical surveys done by RBI

Since this seminar is focussed more narrowly on statistical surveys, let me briefly comment on the surveys done by the Reserve Bank. We do regular periodical surveys as well as need-based *ad hoc* surveys. Our surveys in the external sector cover foreign liabilities and assets, software exports and non-resident deposits, etc. In the banking sector, the surveys cover distribution of credit and deposits, composition and ownership of deposits, international banking statistics, and the like. In the corporate sector, the survey of performance of private corporate business sector, conducted since 1951-52, has been of considerable interest to analysts.

The Reserve Bank has also introduced several new surveys to support monetary policy formulation. These include the industrial outlook survey, inflation expectations survey for households, survey of inventories, order books and capacity utilization and survey of professional forecasters.

We are also working on a survey for housing start ups. The biggest challenge for us here has been collecting information from each state/city on building permits and coming up with a reliable matrix of house-start coefficients. The special value of these new surveys is that they include information from key actors, they are forward-looking and the results are available in quick time. Such survey results provide useful and timely inputs for the conduct of forward-looking macro-policies.

Statistics in the RBI's work

At the Reserve Bank, honing our skills and improving our database is a constant endeavour. We have achieved some satisfactory progress, but there are daunting challenges still. Let me illustrate by giving five problems that we confront in the area of data analysis.

(i)   Data revisions

Measuring the economy remains a complex task and data uncertainty is a fact of life. Data revisions are a legitimate part of statistical compilation and dissemination. However, here in India, data revisions and systemic biases in data revisions are more frequent and common place. Most economies have to contend with an uncertain future; here, in India, we are having to contend with an uncertain past as well. This uncertainty poses a challenge for all economic policy, particularly for monetary policy, where we have to look ahead by looking back. Monetary policy transmission in developing economies such as ours is inhibited by structural factors and this vulnerability is exacerbated by the uncertain information context. The conduct of monetary policy will be better served by more firm data and less revisions. How do we ensure that?

(ii)   Inflation measurement

Price stability, defined as low and stable inflation, is a key objective of our monetary policy in India. In the context of our multiple objectives, inflation containment emerged as a primary concern of the Reserve Bank during the period 2006-08 – initially in the context of domestic demand pressures, which in 2008, were augmented by globally-induced supply shocks. Pre-emptive monetary measures, in conjunction with fiscal and other supply-side measures, helped to contain inflation and inflation expectations. Since the second half of 2008-09, domestic inflationary pressures, as measured by wholesale price index (WPI) inflation, have eased on the back of sharp correction in international oil and other commodity prices. In the context of the sharp decline in headline WPI inflation, there have been calls for reduction in the policy rate and the overall domestic interest rate structure. While policy rates have indeed been lowered and bank deposit and lending rates have also come down, albeit not to the same extent, it needs to be recognised that alternative measures of consumer price index (CPI) inflation have continued to rule at elevated levels. For example, currently, the WPI inflation is in negative territory – a sign that could be misinterpreted as the economy being in deflation even when there is no contraction in aggregate demand – while the inflation rates from the four CPIs are in the range of 9-10 per cent.

In India, given the heterogeneity of the economic structure and large differences in consumption baskets, we have four consumer price indices, apart from the wholesale price index. Given the relatively low income levels, food items constitute a very large proportion of the consumption basket and this is reflected in their weights in the CPI indices (46-70 per cent) relative to the WPI index (27 per cent). Fuel group has a weight of 14 per cent in WPI but only in the range of 6-8 per cent in the consumer price indices. Commodities like metals and products have a significant weight (8 per cent) in the WPI, but are not directly included in the CPIs. Thus, differences in the weights of the items included in the various indices, along with divergent price movements, not only create a wedge between the different inflation measures but also move them in different directions.

Such divergences in alternative inflation measures complicate the conduct of monetary policy in India. Accordingly, the Reserve Bank looks at all the measures of inflation, both overall and disaggregated components, in conjunction with other economic and financial indicators, to assess the underlying inflationary pressures.

In this context, the new price indices contemplated by the Government – CPI (Urban) and CPI (Rural) – would be helpful. Furthermore, WPI with a more recent base and enhanced coverage, including that of the service sector, may pave the way for a producers' price index

(PPI). The Reserve Bank has been constantly engaged in the refinements of the various price indices and would continue to provide the necessary support to the Government to bring about further improvements in the measurement of inflationary conditions.

(iii)   Information on leading indicators for business cycles

Given the well-known lags in monetary policy transmission that I referred to earlier, it is important for monetary policy to be forward looking. Timely and reliable information on the likely evolution of economic activity and inflationary conditions and an ongoing assessment of the transmission lags are important. While these issues are relevant for all economies, they are more pertinent for emerging market economies (EMEs), like India, undergoing rapid structural transformation. In the wake of the fast pace of structural transformation, the transmission lags are subject to constant change. Similarly, the magnitude of key variables such as investment, output and inflation in response to monetary policy impulses is likely to vary over time. In view of these specific additional complexities in the transmission mechanism in the EMEs, like India, it is important to develop robust lead indicators of economic activity.

The Reserve Bank set up a Working Group in 2001 and a Technical Advisory Group in 2006 to get expert advice on development of leading economic indicators for the Indian economy. We are now compiling a composite leading indicator (CLI) on a regular basis as an input for monetary policy formulation. Economic and financial conditions can change quickly over a very short period of time, as evidenced by the ongoing global financial crisis. We, therefore, need a renewed focus on assessing cyclical conditions through leading indicators, including supportive research on macroeconomic linkages, time series and seasonal adjustment, business cycle analysis, short-term business indicators, sensitivity analysis, and detailed analysis of quarterly results of the financial and non-financial companies to assess the impact on the real sector. The slew of surveys initiated by the Reserve Bank over the past few years have been very helpful and these would have to be further expanded/strengthened as warranted.

(iv)   Financial soundness indicators

The global financial crisis has brought into focus the importance of targeting financial stability as an explicit variable. Even as policy makers and regulators are still grappling with the precise definition and quantitative indicators of financial stability, there is a reasonable clarity on the symptoms of financial instability. The responsibility for ensuring financial stability implicitly rests with the central bank.

One of the several tools required for monitoring financial stability is stress testing – a term that has now become widely used – but variedly understood. The United States has recently published the results of its stress tests with very positive outcomes in terms of shaping expectations and shoring up market confidence. Europe too is undertaking stress tests. As part of the self assessment done by our Committee on Financial Sector Assessment (CFSA), we too performed stress tests for the banking sector which showed that our banks are safe, healthy and operating prudently.

The stress tests done by the CFSA are a good beginning, but admittedly rudimentary. We need to refine both our database and our analytical capabilities for stress tests. This is another challenge for the Reserve Bank on the data and analysis side.

(v)   Data on employment

Finally, I come to a major gripe. Globally, trends in employment are one of the most important inputs in setting monetary policy response. Unfortunately, we do not have any reliable nation-wide statistics on employment. Data on factory-sector employment are available from Annual Survey of Industry, but with a large lag that makes it virtually useless

for monetary policy purposes. Farm sector employment data are also available at poor frequency and with long lags. Non-farm pay rolls capture employment trends in some economies. But, in India, data on organised sector employment, as obtained from employment exchanges, cover a very small part of the workforce. Against this backdrop, timely and accurate information on employment conditions will enhance our understanding of inflationary dynamics in the economy, and thereby improve the conduct of monetary policy.

Conclusion

I realise that I have covered a wide canvas. Even if somewhat incoherent, I have tried to present to you the challenges the Reserve Bank faces in its everyday work in the area of collection, analysis, interpretation, use and dissemination of statistics. I am aware that this one-day seminar cannot find conclusive answers to all these questions, but I do hope your expertise and insights will take us closer to solutions.

I wish this seminar all the best.