Deepak Mohanty: Statistics in the Reserve Bank of India

Welcome address by Mr Deepak Mohanty, Executive Director of the Reserve Bank of India, at the Statistics Day Conference of the Reserve Bank of India, Mumbai, 5 July 2011.

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Governor Dr. Subbarao, Deputy Governor Dr. Subir Gokarn, Professor Pantula, Professor Karandikar, distinguished invitees and friends. I welcome you all to the Reserve Bank's 5th statistics day conference. This annual event provides an occasion to learn about developments in the area of statistics, review the contribution of statisticians in the Reserve Bank and reflect on challenges in the way forward.

Since 2007, 29th June is celebrated as the statistics day in honour of Professor Prasanta Chandra Mahalanobis. This day commemorates his invaluable contributions the field of statistics and to the development of the Indian statistical system. Professor Mahalanabis was a great institution builder can truly be called the father of the Indian statistical system. The Indian Statistical Institute (ISI), the Central Statistical Organization (CSO) and the National Sample Survey Organization (NSSO) bear testimony to this. He was the founder editor of the Indian Journal of Statistics, "Sankhya". During his career several international acclaims came his way such as: Fellow of the Royal Society, President, International Statistical Institute and Chairman of United Nations Statistical Commission. He was bestowed with Padma Vibhushan in 1968 in recognisation of his immense contributions.

Professor Mahalanobis's technical contributions in the field of theoretical and applied statistics were no less. These include, the famous Mahalanobis D^2 (D-square) – a multivariate distance function for classification of populations – and the methodology for design of large scale sample surveys. Commenting on his contributions to sampling techniques, Harold Hotelling wrote, "No technique of random sample has, so far as I can find, been developed in the United States or elsewhere, which can compare in accuracy with that described by Professor Mahalanobis". Of course, his contribution to public policy, particularly the Second Five-Year Plan of industry-led growth, is well known. In modern management parlance, Professor Mahalanobis was an "out of the box" thinker. While many of his research findings primarily arose from the need to solve applied statistical problems, the solutions straddled both applied and theoretical statistics.

We are happy that Professor Sastry Gouripathi Pantula, an alumnus of Indian Statistical Institute, has kindly accepted our invitation and will be sharing his thoughts with us today. Professor Pantula, an authority in time series analysis is currently Director of the Mathematical Sciences Division, National Science Foundation, the United States of America. Professor Pantula, presided over the American Statistical Association (ASA) last year as its 105th President. Professor Pantula in his presidential address to the American Statistical Association last year, while paying glowing tribute to Professor Mahalanobis aptly captured his vision of statistics, "as a key technology to solve real world problem". In a data centric world, Professor Pantula noted, statistics or statistical thinking is the key to innovation. This is an aspect we are deeply aware in the Reserve Bank of India.

We are delighted that Professor Rajeeva Lakshman Karandikar has graciously agreed to share his thoughts with us today. Professor Karandikar currently Director, Chennai Mathematical Institute has distinguished himself in the fields of probability theory, stochastic processes, derivative pricing and risk modelling. Professor Karandikar is an expert in cryptography which has wider application in electronic banking; an area of great interest to all of us in the Reserve Bank. Professor Karandikar is also a renowned psephologist. We often see him on Television, given the frequency of elections in our country.

Professor Pantula and Professor Karandikar between them bring together valuable expertise. I am sure we will benefit a great deal from their discourses today.

Let me briefly turn to the role of the statistician in the Reserve Bank of India. As the Reserve Bank is responsible for a wide range of central banking function from monetary policy to financial inclusion, the statistical and analytical requirement becomes all the more diverse and demanding. To my mind, the statistics department has four key responsibilities. First, compilation and dissemination of macro-financial statistics. Second, conduct of surveys. Third, technical support to operational departments. Fourth, research.

The Reserve Bank is responsible for money, banking, financial, external and corporate balance sheet data. The Reserve Bank compiles and disseminates these statistics as per the best international practices. The monetary and balance of payments (BoP) statistics generated by the Reserve Bank of India confirms to the International Monetary Fund (IMF) special data dissemination standards (SDDS) and general data dissemination system (GDDS). We are also participating in the IMF's coordinated portfolio investment survey (CPIS) and coordinated direct investment survey (CDIS). We contribute to the Bank for International Settlements (BIS) data exchange programme. Apart from the standard balance sheet related data for banks, we have a unique database, the Basic Statistical Return (BSR), that provides detailed granular unit level data on important parameters of financial intermediation by the banking sector. The Balance of Payments (BoP) statistics are generally based on near-complete enumeration of transactions through banking channel, unlike many other countries. We have started disseminating data on trade in services on a monthly basis starting from June 2011. Statistics on corporate sector is being collected and analysed by the Reserve Bank for well over six decades now.

The Reserve Bank has a long tradition in conducting surveys. For example, the direct All-India rural credit survey, later rechristened as the all India debt and investment survey, was initiated by the Reserve Bank way back in 1951. The Reserve Bank conducted the first census of India's foreign assets and liabilities in 1948. Since then surveys have evolved as per the need for analysis. In the recent years, the Reserve Bank has introduced several forward-looking quarterly surveys such as the industrial outlook survey, order book and capacity utilisation survey, inflation expectations survey, professional forecasters survey and credit conditions survey. These surveys provide inputs to the Reserve Bank's quarterly monetary policy assessments. The results of these surveys are released in public domain for further research and analysis.

Apart from generation and dissemination of statistics, statisticians are also posted across various departments of the Bank. They provide support for different operational aspects such as payment system, risk analysis, currency management and portfolio management evaluation. Furthermore, statisticians internally generate forecasts for key macroeconomic variables. They do their own research, and publish many of their research findings.

Let me now turn to some of the emerging challenges. First, we must recognise that timely and accurate representation is the core objective of a good statistical system. It provides foundation for good analysis and effective policy-making. In this context, the Bank's IT-vision document emphasises the use of uniform reporting standards and automated data flow from the source system of banks to the Reserve Bank. This will ensure data integration, reduce reporting burden and improve overall efficiency of the statistical system. The department should, therefore, gear up towards on-line reporting of information.

Second, earlier data were released periodically through the Reserve Bank's website and various publications. Consolidated time-series data were made available through the annual publication of Handbook of Statistics on the Indian Economy (HBS). These data are now being made available on-line on almost on a real time basis on the RBI website. It will be desirable to aim at a single point of data storage and dissemination. The department can set an example by taking steps to migrate the entire macro-financial database into RBI's Data Warehouse (DBIE).

Third, in addition to the traditional statistical issues facing emerging economies like India, the global financial crisis has drawn attention to data gaps in the financial sector which needs to be addressed. The G-20 has particularly emphasised the importance of data for better identification of the build-up of risks in the financial sector and of financial interconnectedness The proposal is to scale up SDDS by including financial stability indicators (FSIs). While the Reserve Bank has started providing data under this SDDS-plus initiative, this process needs to be expanded further. The demands on statisticians is going to increase for which we should be prepared.

Fourth, macroeconomic models are important tools developed and used by major central banks for understanding the dynamics of growth, inflation, money, interest rates and other related variables in the context of formulating monetary policy. There is no unique way of macro-economic modelling. Policy makers, therefore, tend to rely on a suite of modes to make their own judgements about policy action. The department should develop an independent policy model, to help understand the transmission of the policy signals to the real and financial sector. This will facilitate assessment of the medium-term impact of various policy variables and how they are informed by changes in macro-conditions. Many countries have core dynamic stochastic general equilibrium (DSGE) models for this purpose, which takes into account the micro foundations behind the macroeconomic behaviour of different sectors of the economy. The underlying microeconomic considerations could be quite complex for a rapidly growing economy like ours. There is, therefore, a need to make further progress towards development of a DSGE model for Indian economy.

Fifth, asset prices have become important to the conduct of monetary policy and maintenance of financial stability. One of the major data gaps on Indian economy relates to asset prices, particularly commercial real estate and house prices. Though initial efforts have been made to construct House Price Index (HPI) for seven cities. This needs to be expanded further to cover more areas so as to ultimately facilitate construction of an All-India HPI.

Sixth, there is a need for compilation of employment statistics, though this is not clearly in the purview of the Reserve Bank of India. However, from the perspective of monetary policy assessment the need for data on employment and wages cannot be ignored. The department can explore possibilities of conducting quick surveys on wages covering both formal and informal sectors.

Seventh, another area where the role of the department will increasingly become crucial is the assessment of the Reserve Bank's financial inclusion initiatives through follow-up surveys. The survey finding could facilitate better policy design. In the conduct of surveys and in gathering market intelligence the role of regional offices of the department becomes critical. The regional offices can also help in providing early warning indications on price pressures, build-up of supply shocks, sudden developments in the real estate sector and so on.

Noted economist Alfred Marshall once said: "Statistics are the straw out of which, I, like every other economist, have to make the bricks". In the Reserve Bank, the statisticians not only provide straw, they also make their own bricks. This is evident from the fact that the statisticians are equal partners with the economists when they present their own independent assessment of growth and inflation in the Monetary Strategy Committee chaired by the Governor. In these meetings presentation of alternate viewpoints helps avoid the pitfalls of "group-think".

The Reserve Bank like many other central banks nevertheless draws its share of criticism for inaccuracies in its projection of growth and inflation. But, as observed by noted statistician Arthur L. Bowley in early 20th century, "A statistical estimate may be good or bad, accurate or the reverse; but in almost all cases it is likely to be more accurate than a casual observer's impression, and in the nature of things can only be disproved by statistical methods". Statistics has made significant strides since Professor Bowley's time. Hence, great

challenges lie ahead for statisticians in the Bank not only to improve the quality of data but also to refine statistical methods to aid better policy formulation.

I once again extend a hearty welcome to all of you to this one day event.

Thank you.