IFC–Bank Indonesia Satellite Seminar on "Big Data", Bali, 21 March 2017

Opening remarks by Yati Kurniati, Executive Director of Statistics Department, Bank Indonesia

It is a great pleasure for me to welcome all of you to the IFC Satellite Seminar on "Big Data", here in the beautiful island of Bali. Bank Indonesia is honored to jointly organize this event with the Irving Fisher Committee on Central Bank Statistics (IFC). On behalf of Bank Indonesia, I would like to express my appreciation to all of those – IFC Executives and members, distinguished guests, speakers and participants – who are contributing and taking part in this IFC Seminar. The seminar is held in conjunction with the 2017 International Statistical Institute (ISI) Regional Statistics Conference, which will be held on 22-24 March 2017 at this same place. This second regional conference of ISI is organized by the ISI and its South East Asia Regional Network (ISI-SEA Network) together with Bank Indonesia as the co-host, and in collaboration with Badan Pusat Statistik (National Statistics Office of Indonesia), Ikatan Perstatistikan Indonesia (Association of Indonesia Statistician), and Forum Masyarakat Statistik (Indonesia Statistician Forum). We have a very stimulating program lined up for the coming days, which I am positive will prompt very rich discussions and exchanges of views. I would therefore extend my appreciation to all those who will be contributing to and taking part in the ISI regional conference.

Data and statistics are basically a cornerstone of the central bank's work. In recent years, the supply of data has increased dramatically and this trend is set to continue as an ever-greater amount of activities are stored in different ways. This data revolution, which has given rise to concepts such as Big Data, challenges traditional thinking while placing new demands on processing and analysis.

The private sector has been aware of the value of Big Data for some years now. Central banks, however, tend to be more cautious, but there is a strong interest in Big Data in the central banking community, in particular at senior policy level, as being shown from the results of a survey conducted by the Irving Fisher Committee on Central Bank Statistics in October 2015.

Many of us believe that Big Data has the potential to open up new possibilities for monetary policy-making, financial system supervision, and economic research. Data mining, text mining, image processing and other new techniques have been made possible by improvements in processing technology. Central banks have also pointed out what they see as areas of high potential for Big Data. These areas include, among others, enhancing real-time awareness by providing real-time information, strengthening macro-prudential oversight by building up new risk indicators based on households and corporation behavior, and improving business cycle analysis by enriching sentiment indicators.

As many central banks start to make the use of Big Data, challenges come to the forefront. To access, prepare, and analyze data sets presents a series of institutional and technical challenges. One of the first challenges which must be overcome in order to conduct Big Data analysis is for the data to be accessed. This is particularly

important for the institutions which do not, themselves, generate the data of interest. This is also linked with the issue of personal data ownership and confidentiality. To this end, business models need to be developed to ensure that private sectors are willing to share data. Also, authorities need to design policy to help capture the value of Big Data and enable sharing across agencies. Once data is accessible, preparing the data and ensuring its readiness for further analysis requires challenges such as the time and effort to clean data. After the data is cleaned, a variety of algorithms must be deployed to extract the values from the data. Each phase of the data processing mentioned above highlights the technological capabilities necessary to work with Big Data effectively. In terms of accessing data, it is important to have the necessary infrastructures (hardware and software) to collect data. If data is dynamically fed from an online source such as Twitter, for example, then the infrastructures must allow for such real-time, continuous updated analysis. If, instead, data is being downloaded from some source and then kept for later analysis, it is important to ensure sufficient hardware capacity to store such data. Given a well-prepared dataset, a series of considerations must also be kept in mind to interpret the data. In particular, the statistical problem of selection bias, in which a large datasets collected is unrepresentative of a population, may occur in various forms.

To sum it up, utilizing Big Data poses considerable challenges for central bank. Another major concern has been the difficulty to recruit people with the skills of data scientists. In terms of infrastructures, the IT capacity of many central banks have not always lived up to the requirements laid down for processing large amounts of data. These all take new considerations in terms of strategy, organization, and budgets. Despite the challenges, the central banks are now in the process of make the best use of it. In fact, today we are going to see some of the interim results of fascinating pilot projects using various source of Big Data presented by our fellow central bankers.

The age of Big Data is upon us.

The value, volume, and variety of data are undoubtedly multiplying, the methodologies that enable us to analyze those data are maturing, and the technologies to access and processing those data are emerging. Through a concerted and collaborative effort at various levels, I believe that Big Data can be utilized to strengthen central bank to serve its goals. And I am very pleased to note that the IFC and the ISI are with us in this endeavor.

With this, ladies and gentlemen, I conclude my opening remarks. I wish all of you a productive and engaging seminar. I also hope that you are able to enjoy at least, a glimpse of Bali's most natural and cultural wonders. Thank you.