The Sixth IMF Statistical Forum

KEYNOTE SPEECH. MEASURING INTANGIBLE ASSETS (IP & DATA) FOR THE KNOWLEDGE-BASED AND DATA DRIVEN ECONOMY

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SUMMARY OF KEYNOTE SPEECH

The digital economy is growing exponentially in multiple complementary dimensions: processor speeds, memory capacity, adoption rates for fixed & mobile broadband, ecommerce, sharing economy, Internet of Things, and data generated. The effects of these innovations are resulting in a transformation of the global economy, societies, and the way we govern ourselves. The production economy of the 20th century created much economic prosperity that 'lifted all boats'. But in the digital age, data is everywhere but in the macroeconomic accounts and data is not currently governed in a manner that allows the gains to be equitably distributed. Therefore, Mr. Balsillie is arguing that an international strategy that fully incorporates the digital age to promote international stability, cooperation and sustainable growth is needed, in what he calls the "second Bretton Woods moment".

Mr. Balsillie discusses how Big Data, artificial intelligence (AI) and machine-learning are revolutionizing virtually every sector of the economy but that along with the potential economic benefits, these same capabilities also confront policymakers with equally profound challenges: (i) winner-take-all economics and emergence of a new factor of production–machine knowledge capital; (ii) increased concentration of wealth and the integrity of the democratic process; (iii) national security risks; (iv) strategic rivalries in geopolitics.

The modern economy is based on innovation and how it is incentivized and the way that gains from innovation are captured and distributed. This new global economic framework is based on the internationalization of increased protection of intellectual property rights (IPR). In the knowledge-based economy the strategic focus of business has been to generate and control traditional IP assets, such as patents and copyrights. Now the framework has been further elaborated to a data-driven economy, in which the strategic focus of business is increasingly to generate and control data assets as well as the valuable intellectual property developed on these data assets through application of AI and machine learning.

There are key differences between an economy based on "tangibles" and one based on "intangibles". In an industrial economy of tangibles, the ability to produce efficiently at scale and to sell at lower prices enables the capture of markets, which underpins profitability. In the traditional economy, trade agreements open-up foreign markets to gain greater access to

production economies of scale leading to win-win dynamics that spread the benefits. However, the intangibles economy is based on amassing rent-generating assets. Digital products based on IP and data have effectively zero marginal production costs, which results in winner-take-all dynamics. The instruments designed to govern this type of global economy focus on the protection of IP and data assets where trade agreements are more appropriately called "Asset Value Protection Agreements" as suggested by economist Dan Ciuriak.

Mr. Balsillie argues that data governance is the most important public policy issue because whoever controls the data, controls who and what interacts with it. Furthermore, any data collected can be reprocessed and analyzed in new ways in the future that are unanticipated at the time of collection. The digital transformation raises cross-cutting issues that must be strategically dealt with. For example, machine-learning algorithms effectively mine enormous and rapidly growing stocks and flows of data, leading to the emergence of a new factor of production– machine learning capital– and a new mode of innovation– machine-generated IP. This has profound impacts on how we measure the digital economy.

Machine learning capital competes with and complements human capital the way robots compete with and complement unskilled labor. While some skilled workers will see their returns enhanced as they are empowered by complementary forms of AI, the total wage bill flowing to workers will most likely fall. This has implications for the future of work and public policies. Because intellectual property is essentially a monopoly and ideas have little or no marginal production costs after their invention or creation, this leads to inequality between those who create and own ideas and those who don't. The distributional issues that are generated by the economics of intangibles must be addressed. Understanding and measuring the digital economy and potential consequences of possible economic structures is important, thus, on-going research needs to be done.

Mr. Balsillie states that we are in the midst of an historic technology-drive transition in the way value is created and captured in our economies, in how our societies function, and in the sources of national wealth and power. He lays out four core elements that must be resolved together to craft a stable system that can advance welfare globally: (i)safeguard national security in a cyber era; (ii) enable fair access to the new factors of production; (iii) protect and enhance privacy, democracy and ethics; (iv) comply with all international commitments under various agreements, including GATS/TRIPS/FTAs. He concludes that measurement frameworks should be updated so that the information is available to formulate appropriate economic advice for effective policies.