International Fiscal Association

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ISSUES AND CASE STUDIES PAPER

BIG DATA AND TAX – DOMESTIC AND INTERNATIONAL TAXATION OF DATA DRIVEN BUSINESS

Subject 2 | Tuesday, 6 September 2022 | 09.00 – 12.00

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Chair
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Short Description:

"Big Data", i.e. projects, software, services or business functions that involve collecting, aggregating, structuring, and analysing large information sets, in particular the application of data analytics and artificial intelligence, has given rise to multiple business models permeating the global economy. The panel will provide an introduction to the main legal and fiscal features of Big Data and will discuss selected business models and their treatment under domestic tax law, tax treaties and the law governing indirect taxation (including VAT and DST). A central element of this analysis will be the interaction between the legal and fiscal characterisation of Big Data transactions.

Brief Summary:

A large variety of businesses – not merely "pure" internet companies – make use of big data technology. Businesses currently implement big data analytics to boost customer acquisition and retention, identify potential business risks early, develop risk management solutions, innovate and develop new products, and manage supply chains. Big Data also has a number of emerging and foreseeable commercial applications: connected and autonomous vehicles; medical research; remote equipment monitoring; machine learning; predictive and prescriptive analytics; and an increasingly interconnected "Internet of Things".

The relationship between Big Data and taxation involves both domestic and international aspects. This concerns a country's legal framework as regards the development and commercialization of Big Data by domestic firms. Equally important, one has to consider how a jurisdiction treats non-resident firms that use Big Data to provide goods and services to their residents. Similar issues have to be addressed under both domestic tax law and international tax treaties: What is the appropriate characterisation of income derived from transactions made possible through Big Data analytics? Is income from the use of data income arising from the provision of services, royalty income, or another type of business income? What about nexus – is it conceivable that Big Data transactions create permanent establishments? How are the sales of access to or ownership of data sets treated in cross-border situations? What transfer pricing issues have to be managed? How is the treatment under VAT and which business models are affected by DSTs?

The panel will build on the structure provided by the General Report (and the initial Questionnaire) drafted by the General Reporter.

We shall start with an introductory presentation by the General Reporter on the concept of Big Data, its main impact on the global economy and current business models as well as on some general issues of Big Data in the tax world. This will include an overview on transfer of raw data, transfer of or access to aggregated data and Big Data analytics.

This presentation shall be followed by a second introductory presentation by an IP lawyer who will explain to the audience the legal framework of Big Data business. This will include intellectual property law as well as data protection law etc. and will discuss some general issues like "ownership" in data, other means of protection (for raw data, processed data, data collections etc.) and the contractual framework for Big Data business models (sales of data, service agreements, licence agreements etc).

The main part of the panel will be devoted to a thorough analysis of four major case studies designed by the General Reporter and discussed in the Branch reports. These case studies reflect some of the most relevant business models currently applied in the area of Big Data. These include:

- Data Brokers / Information Resellers
- Data Feeds
- Performance Data Analytics
- Analytics Based Consultancies

Finally the panel shall identify overarching policy issues which might give rise to further tax legislation or require amendments to the treaty provisions and transfer pricing guidelines currently governing the tax treatment of Big Data.

Case Studies:

<u>Case 1</u> – Data Brokers / Information Resellers

An enterprise is in the business of gathering data from various sources in order to build profiles of consumer behavior ("Broker Co."). Broker Co gathers some information through application program interfaces ("APIs") which a website owner ("Website Co.") may allow to provide access to information generated through traffic on Website Co.'s website. Broker Co. also may separately contract with other suppliers to acquire information though loyalty cards, user-contributed data from social media websites, and various other sources. Broker Co. makes an annual payment to Website Co. for access to user generated data through the API.

Broker Co. invests in engineering personnel who develop data analytics software which organizes and structures the data. Data retained in Broker Co.'s structured database may persist for several years. Broker Co. sells copies of data sets to Customers. Customers may set parameters to define the data sets they purchase. Customers may purchase the data sets for purposes of targeted advertising, fraud detection, marketing analysis, insurance risk analysis, or similar purposes. Broker Co. charges Customer fees based on the size of data sets supplied and the degree of analytics which it had applied to that data set. Broker Co. by contract prohibits Customers from on-selling the data. Customers may use the purchased data sets for as long as they wish, although the value of a static data set decreases rapidly over time.

Most Customers are located outside Broker Co.'s country of residence, and typically will download the data sets from Broker Co.'s servers. The data relates to persons resident inside and outside the residence jurisdictions of Website Co., Broker Co., and Customer.

Case 2* – *Data Feeds

Alternative 1: An enterprise is in the business of predicting animal migration ("Animal Data Co."). The enterprise gathers data on weather forecasts, food supply, predator density, urban development, climate change, and other elements. The enterprise has developed data analytics tools which it uses to create maps of predicted animal density at various future points of time. Another enterprise operates a website whose viewers would be interested in animal migration information ("Information Site Co."). Information Site Co. contracts with Animal Data Co. to provide a continuous feed showing migration patterns and predictions for a monthly fee. For the fee, Information Site Co. receives the data feed and is entitled to display the information to all viewers on its website. Information Site Co. receives no rights to use Animal Data Co.'s data analytics software and algorithms, except as may be necessary to allow display of the output on Information Site Co.'s website. Information Site Co. does not charge its users a fee to view the information. Information Site Co. is located in a different jurisdiction than Animal Data Co.

Alternative 2: Animal Data Co. is a not for profit NGO formed for the purpose of supporting wildlife conservation. Animal Data Co. does not charge Information Site Co. a fee for the data feed, but it requires Information Site Co. to prominently indicate on its website that Animal Data Co. is the source of the information and to include a link to Animal Data Co.'s website. Information Site Co. supplies Animal Data Co. with personally identifiable data relating to visitors to the website who view the animal migration information. The NGO actively solicits donations from users who click through to its website using data received from Information Site Co. to target solicitation requests.

Case 3* – *Performance Data Analytics

An enterprise is engaged in the business of designing, selling, and servicing complex equipment ("Equipment Co."). An affiliate of Equipment Co. resident in a different jurisdiction ("Service Co.") enters into after-sales service contracts with equipment purchasers. An important part of the service contract is the provision of performance monitoring and failure prediction services to equipment users. Service Co. performs those monitoring and prediction services by obtaining real time performance data from the manufacturer's equipment over time, both the equipment purchased by the customer which has entered into the service contract and equipment purchased by other equipment owners. Service Co. has developed data analytics tools which are essential to its ability to

perform these services. Those tools analyze data received from the equipment while in operation in combination with data derived from other machines over time to provide information to the equipment owner and Service Co. employees relating to early warnings of failure, risk prediction, suggested preventive maintenance, and needed repairs.

Heavy Equipment: For a heavy equipment product line, Equipment Co. installs sensors in the equipment which it sells to customers. Equipment normally is sold on a bundled basis with a one-year service contract. Data collected by the sensors is used to develop performance analytics which enhance the services provided to all equipment owners purchasing a service contract. Most, but not all, equipment purchasers also purchase additional terms of the service contract after the first year.

Consumer Appliance: For a consumer appliance product line, Service Co. provides sensor equipment for free to consumers who purchase an after-sales service contract. Some of this equipment is located at consumer locations outside of Service Co.'s jurisdiction of residence. Service Co. uses data derived from the sensors as well as accumulated data to remotely adjust the equipment and to recommend preventive maintenance.
The remote monitoring and failure prediction services are provided through a data center located outside the jurisdiction of the customer. The data center equipment hosts the data base that stores the historic data and captures real time performance data, and hosts the analytics software that predicts failures and proposes remedies. In many cases, the repair services consist of adjustments to software or other equipment controls which can be implemented through communications from the data center without human participation. The data center assets might be owned by Service Co. directly, or through a separately incorporated affiliate. Data centers are located in several jurisdictions in order to reduce latency between the equipment being monitored and the data center.

Consumer Behavior Consulting Services: Service Co. also provides consumer behavior consulting services to third parties for a fee based on information received from the consumer appliance user data. The data itself is not transferred to the consulting contract customer.

<u>Case 4</u> – Analytics Based Consultancies

An enterprise is engaged in the business of providing consulting services to educational institutions to improve student results ("Consultant Co."). Consultant Co. has accumulated a database designed to capture and analyze data that predicts educational performance, career choice, and earnings potential. The database includes data spanning many years of student test scores, background factors including socio-economic background, residence addresses, ethnicity, language capabilities, parents' education levels and occupations, and similar factors, and post-graduation employment

history. The data is derived from subjects located throughout the world. Consultant Co. uses that database to support its consultancy work with educational institutions to improve the likelihood of successful career outcomes through improved educational methods. Consultant Co. charges fees on a negotiated project basis for its consulting services.

Consultant Co. also allows third party researchers to access its database for a fee to engage in their own research projects. The access agreement does not allow the researcher to further disseminate the data, but does allow the researcher to commercialize the results of its research.