

IARIW-ESCoE Conference

“Measuring Intangible Assets and Their Contribution to Growth”

Creating and Governing Value from Data

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"In this paper, we set out an analytical framework for valuing data, based on its distinctive economic characteristics, including non-rivalry and pervasive externalities, and on its information theoretic characteristics, including aspects of quality, generality, and temporal and geographic characteristics. A nascent economics literature (e.g. Corrado 2019, Jones & Tonetti 2019, Savona 2019) sets out the basic economics of data. Our contribution is to combine the economic analysis with the information aspects, as economic value depends on its information content (rather than any physical measure such as data records). We also emphasise that data externalities can be positive as well as negative, whereas much of the literature focuses on the negative externality of privacy breaches (eg Acemoglu et al 2019). Working from this conceptualisation of data, the paper shows how an expanded view of the characteristics of data has important implications for how value is measured, distributed, regulated and governed. We argue that an incomplete picture of the characteristics of data means current policy debates about data do not fully account for the contexts and conditions through which it generates economic and social welfare.

Modelling data value through the dual lens we propose has implications for the methods used to measure value. By combining these two lenses, we propose potential methods for estimating the highly heterogeneous value of different datasets, noting that market valuations, where they exist, will diverge, possibly substantially, from social welfare. Furthermore, use value may differ greatly between users for exactly the same data, meaning that data has a variety dimension absent from conventional economic goods. The methods we propose therefore combine conventional asset valuation approaches with non-market contingent valuation methods (Carson et al 2001).

From here, we consider our revised approach to valuing data in the context of existing practices of measurement, regulation and governance, demonstrating how it can reveal limitations in existing approaches and potentially contribute to more appropriate practices.

First, we discuss the scope for including the aggregate value of data to the economy in the national accounts, as on current definitions GDP records only certain investments in databases (Statistics Canada 2019). We conclude that it is possible to record more of the economic contribution of data, but there are limitations due to its non-commodity nature, in addition to the practical challenge of measuring data flows across national borders (Coyle & Nguyen 2019). The reason is that GDP is largely a measure of market

transactions, and by construction excludes the economic welfare effects of externalities (Coyle 2014). The key role of externalities to value creation, for example aggregation of data, means this is a particularly salient disjuncture between value creation with data and GDP.

Then, drawing primarily on a series of semi-structured expert interviews, we interrogate the implications for regulation and governance of data from this expanded conceptualisation of the value of data. We argue that the current framing of ‘personal’ data and property rights will not permit the realisation of the full social welfare value of data. A language of property rights obscures rather than illuminates the externalities and processes through which data becomes socially valuable. This is not least because much data (including the Internet of Things, urban sensors, etc) does not relate to individuals. Thus, payment by digital platforms to individuals for providing data, as advocated by some authors (e.g. Arieta Ibarra et al 2017), will allow the platforms to retain the positive externality benefits from aggregated data.

Finally, building on the definition of data as a collectively produced intangible asset, we make the case for a spectrum of access rights that would enable broader distribution of the value of data. This would include commercial uses, as the creation and maintenance of datasets requires significant investment and skill, but would also enable the creation of greater total economic welfare than is currently the case. For example, rather than posing a confrontation between conflicting rights or values – such as innovation versus privacy – considering a spectrum of appropriately governed access rights may allow the generation of multiple different insights and sources of value.

We discuss these trade-offs and incentives involved in creating and governing data, and conclude with a brief discussion of the need for trustworthy, public and private, data governance institutions (O’Neill 2018). Public and policy debates about data governance have become increasingly marked by concerns about the appropriation of value, often pertaining to individuals, and the dominance of a few corporations. Taking into account both the economic and informational-theoretical characteristics of data provides a basis from which to map out contingencies and contributions to value creation across actors and institutions. This paper thus concludes with an attempt to progress debates over data governance by bringing to bear a much clearer picture of whose interests are at stake in value creation from data."