

Data Capital

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How Data is Reinventing Capital
for Globalization

 Springer

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Highlights

Data Capital, *noun*.

- (1) A human-created resource that is naturally one capital.
- (2) A digital, intangible capital form that claims to cover almost the digital part of all existing capital, from tangibles' digital twin and intangibles' measurable aspect, to financials.
- (3) The strategic economic resources for the data economy.
- (4) A parasitic economic logic to develop new forms of business that serve the industries within the first three categories of Fisher-Clark's classification.
- (5) An intangible wealth marked by concentrations of information, knowledge, and wisdom unprecedented in human history.
- (6) A possible sovereign power that is subordinated to modern global architecture but has no physical boundaries.
- (7) The origin of a decentralized instrumentation power that asserts dominance over society and brings the opportunities for market democracy.

Abstract

What is the next grand impetus that injects into economic globalization?

Big societal problems and other transformations ushered in the digital era lie at the heart of economics. But satisfactory answers have been hard to find for lack of research across disciplinary divides. In *Data Capital*, Chunlei Tang, Ph.D., lets data speak for itself ranging in data nature, to uncover how the features make a data-rich economy fundamentally different from the previous ones. Her findings will transform debate and set the agenda for the next strategic economic development plan about globalization. Tang shows that data capital as a human-created resource is naturally a capital that will reshape the world economy throughout the next decades. Understanding the importance of data as natural capital is vital in order to counteract and balance dangerous inequities in the future as decentralized instrumentations of power assert dominance over society. Because a decentralized instrumentation power asserting dominance over society will bring the opportunities for curbing dangerous inequalities in the future. As a work for originality and rigor, *Data Capital: How Data is Reinventing Capital for Globalization* presents possible scenarios for what a data product-rich world might be like and reorients our understanding of economic future.

Acknowledgments

Several years ago, I wrote a book about what to expect from an increasingly data-driven economy. Although signs of the data economy are everywhere now, there remain two challenges with regard to data profits that require attention. The first challenge is figuring out how to derive profits from data. While some argue that bitcoin futures trading represents a highly profitable business, it just provides an arbitrage opportunity characterized by price volatility because their value is based solely on supply and demand. One proper way to obtain profit from data includes not merely the transfer of raw data but add value through the creation of raw data. To put it another way, data profit is achievable from the valuation of both raw data and its derivative data products or services generated through data processing on raw data. In this sense, a digital currency tends not to be the data; meanwhile, cryptocurrency trading via an exchange is treated similarly to an investment that pursues a possible risk premium only.

The second challenge is that data-rich profits can come from various sources—personal, private, or third party—but each stakeholder may not share equitably in the profit return.

Meeting the above challenges regarding data profits will allow us to bridge the gap between a data asset and its capital value. Capital in economics is regarded as one of the factors of production (alongside the other factors: land and labor). Today when capital moves from tangible (e.g., physical capital) to be intangible (e.g., intellectual capital), the data is presented as an amount of wealth that is used in making respective profits to affect the sum of wealth. A clear understanding of this gap in wealth creation motivates me to define and develop the concept of “data capital.” My point of view regarding data capital had the extremely good fortune to win the enthusiastic support of Springer’s Lorraine Klimowich and of Yike Guo from Imperial College London. Guo and I collaborated with on this book proposal, and Klimowich accepted it to make a book contract with me (in 2016).

This book would be impossible without the years of keenly insightful work by Yangyong Zhu and Yajun Huang who glimpsed the world economics under “data nature (that is an artificial ecosystem in cyberspace).” Zhu and Huang taught me to appreciate letting data speak for itself regarding the economic notion of such a new form of capital. Specifically, a discourse on data capital is a data-driven process. Historically, economic research was the prophetic product of Thomas R. Malthus’ overpopulation, David Ricardo’s scarcity of land, and Karl Marx’s unlimited accumulation of capital. One of the obvious drawbacks of these works is the lack of empirical data to support their studies. Inspired by Kuznets curve, modern economists began to employ representative data and abstract mathematical models. With the availability of big data, abstract mathematical models have to be verified and refined with data, for which I offer strategies and solutions in this book.

It’s my pleasure to thank my friends and close colleagues, specifically at Harvard, over the years. Beyond their direct contribution of the thinking to the research on which this book draws, their enthusiasm and energy have fostered a climate of intellectual excitement in which the work matured. I have considered the criticisms of this study which have come to my notice, and have, consequently, modified in this book substantially. I would like to thank in particular David W. Bates, Lynn A. Volk, Joseph M. Plasek, and Eugene W. Mont. More specifically, without the full support from Bates and Volk, I couldn’t systematically present healthcare industrial examples in this book to demonstrate the possibilities of a transformation. Without the efficiency, rigor, wordsmithing ability, and talents of Plasek, our originality on “data sovereigns” might not progress smoothly. Without the careful attention to detail and an impressive capacity for work of Mont, I would never have considered the core issue of how to drive data profit return on equity, which plays a vital role in this book.

Above all, I am grateful to my parents Yiming Tang and Hongjun Lu for their boundless support and encouragement throughout the writing process. I dedicate this book, with love, to them.

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