The Economic Impact of Data: Why Data is Not Like Oil

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The saying "data is the new oil" is at times referenced by policymakers working to assess whether our increasingly digital and data-driven world generates positive impact for our economy and society. However, this saying is imprecise.

The analysis conventionally used to assess the value of physical commodities does not effectively capture the value of data. Unlike physical commodities, data can be reused, is not scarce, cannot be controlled and monopolized by a small number of owners, and has little inherent value alone (without being analyzed).

The Policy-Relevant Differences Between Data and Oil

OIL	DATA
Fixed supply, created millions of years ago. We can improve our discovery techniques, but the supply is still limited.	Exponentially increasing supply, with new types of data being created every day.
Because its supply is fixed, oil can be easily controlled by a small number of players, allowing them to drive up the price.	The supply of data is soaring in both volume and type so rapidly that cannot be controlled or monopolized. Value is generated by new types of analysis rather than ownership of the data.
Unused oil in the ground has a value, set by supply and demand.	Unused data, by itself, has uncertain economic value. Its value depends on how it is combined and used with other data.
Once a barrel of oil is refined and consumed, it is gone.	Data can be duplicated, shared, and reused.
Oil is the single biggest commodity traded on international markets, with the nationality and location of oil reserves and extracted oil tracked very closely. Every barrel of oil that is exported is one less barrel to be consumed at home.	Data can be 'exported' to another country without reducing the amount to be used at home. For that reason, it is better to speak of global connections rather than exports and imports of data.

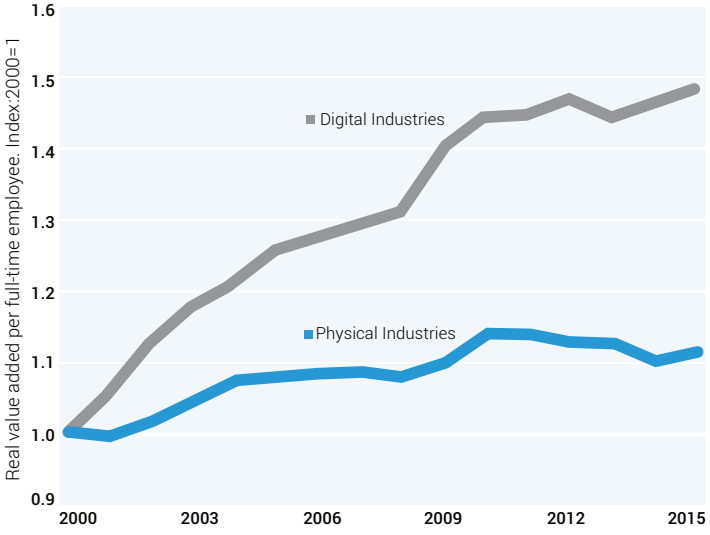
Data-intensive industries have much faster productivity growth than physical industries. As physical industries become more data intensive, new jobs are created for middle-skilled workers.

Data positively affects individual interactions with education and training, job matching, consumer purchases, social capital and exports, among other areas.

With regards to privacy, the analogy further weakens. While regulation for traditional commodities like oil seek to protect individual rights to ownership of resources (an individuals oil), the same regulations for the data-driven sector can have negative impact on the economy overall. This is because when it comes to data, economic value creation is driven by the analysis of data in conjunction with other information. Thus, laws that quite rightfully protect individual rights to data can be at odds with innovation, and economic growth.

> To harness the new economics of data, we recommend "growth-friendly" privacy regulation.

FIGURE 1: Productivity Growth: Digital vs. Physical



Sources: Bureau of Economic Analysis, author calculations

The Economic Benefits of Data: Some Policy-Relevant Mechanisms

MECHANISM	SUMMARY
Education and learning	Personalized online education and training will be essential for helping prepare young workers and retool mid-career workers at an affordable cost. But improving outcomes for online education will require intensive use of personal data.
Job matching	Both developed and developing countries can do better at matching job seekers with good opportunities. Such a system will require extensive use of data on skills, personality, and outcomes.
Consumer purchases	Consumers are benefiting from information not just on the price but on the quality of products and services, based on personal reviews.
Social capital and social networks	The increase in social capital through social networks can boost innovation and economic outcomes.
Productivity and wages	Data-intensive industries have faster productivity growth, higher wages, and stronger job creation. In the United States, for example, ecommerce has created almost 400,000 decent-paid jobs since 2007, while brick-and-mortar has lost less than 80,000.
Exports	Access to data makes it easier for small and medium enterprises to take advantage of foreign markets.
Improved government performance	Increased use of data can improve government performance and civic engagement.
Global macroeconomic gains	Cross-border data flows allow intangible capital such as scientific knowledge and management technique to spill over to other countries, boosting global macroeconomic performance.

Data: Progressive Policy Institute

Privacy Principles For Fostering Data-Driven Growth

PRINCIPLE	ECONOMIC BENEFIT
Focusing opt-in consent obligations on the riskiest cases can help promote innovation while giving individuals choice over their privacy standards.	Data gets more valuable as it is shared. The riskiest cases should be opt-in. But otherwise opt-out will encourage individuals to be selective about what information is kept private.
The de-identified linking of records can jointly encourage strong privacy practices and innovation.	Some of the biggest economic gains will come from jointly analyzing information from multiple domains, such as education and work outcomes.
Cross-border data flows result in economic growth and benefits to individuals.	Cross-border data flows facilitate the transmission of intangible capital from one country to another, which is one of the most powerful forces for economic growth. Moreover, movements of data across borders still typically leave the original data in place.
Privacy and innovation should go hand in hand.	As new forms of data and data analysis become available, data regulators should acknowledge the importance of promoting growth and innovation.