



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT
ECONOMIC AND SCIENTIFIC POLICY **A**



The Collaborative Economy: Socioeconomic, Regulatory and Policy Issues

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Consumer Protection**

The Collaborative Economy: Socioeconomic, Regulatory and Policy Issues

In-depth Analysis for the IMCO Committee



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

The Collaborative Economy: Socioeconomic, Regulatory and Policy Issues

IN-DEPTH ANALYSIS

Abstract

This briefing provides a summary of arguments presented during the IMCO Committee workshop on the collaborative economy and discusses economic, regulatory, labor and social issues related to the sharing economy (collaborative economy). It provides a definition for the collaborative economy, placing it in the context of a range of past and current definitions, and proposing a new term, “crowd-based capitalism,” as a term that unifies changes across different industries. It outlines how this new form of commercial exchange blurs the lines between personal and commercial, elevating the importance of social factors in creating commercial trust. It reflects on how the economic returns from the sharing economy may be repartitioned across social actors, and the promise of lower economic inequality. It outlines new approaches to regulating the sharing economy, the necessity of carefully designed self-regulatory mechanisms, the promise of data-driven delegation, and a set of principles to draw the right lines between the government and the platforms. It concludes with a summary of the state of the independent workforce and outlines approaches for creating a new social contract as society shifts away from employment and towards freelance work.

This document was prepared by Professor Arun Sundararajan at the request of the Committee on Internal Market and Consumer Protection.

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LIST OF ABBREVIATIONS

TNC	Transportation Network Company
GDP	Gross Domestic Product
SRO	Self-Regulatory Organization
API	Application Programming Interface
AI	Artificial Intelligence
INPO	Institute of Nuclear Power Operations
FINRA	Finance INdustry Regulatory Authority

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EXECUTIVE SUMMARY

Over the last decade, a new class of digitally-enabled exchange has emerged across a wide variety of industries, ranging from accommodation, transportation and car rental to small business lending, venture capital and philanthropy. Such exchange is reminiscent of how the world's economic activity was organized prior to the Industrial Revolution, when a significant percentage of economic exchange was peer-to-peer and intertwined in different ways with social relations, and when the trust needed to make economic exchange possible came primarily from social ties of different kinds. What is new is the ascent of digital platforms that have scaled such peer-to-peer activity to the level where the platform-based exchanges rival the industry-leading corporations, creating a new model of capitalism that I term crowd-based capitalism, and that is frequently referred to as the collaborative economy. A wide variety of definitions have been provided, and the one I favor characterizes the collaborative economy as having five features: (1) Largely market-based exchange; (2) High-impact capital; (3) Crowd-based "networks" rather than centralized institutions or "hierarchies"; (4) Blurring lines between the personal and the professional, and (5) Blurring lines between fully employed and casual labor.

As the collaborative economy continues to gain prevalence, the need to create new models of how we measure "good" economic outcomes becomes increasingly clear. The emergence of the collaborative economy and the digitization of business exacerbate known challenges with gross domestic product (GDP). Nevertheless, by conventional economic measures, there will be four key economic impacts: four effects are (1) an increase in capital impact; (2) an increased salience of demand-side economies of scale and "network effects"; (3) an increase in economic activity driven by increased product variety, and (4) the democratization of economic opportunity that could potentially reduce economic inequality.

More important, perhaps, are the ways in which the collaborative economy injects social elements into commercial activity, to varying degrees, as one moves away from industrial capitalism and towards crowd-based capitalism, and leads one to reflect on the fact that the social aspect of commerce has historically played a central role in facilitating trust. The collaborative economy creates new ways of providing familiar services that are traditionally often highly regulated. The shift to the platform-mediated collaborative economy, with its new social aspects, introduces new trust challenges but also provides new solutions to existing trust challenges – most saliently, that regulation, often interwoven with the provision of trust, doesn't always have to originate with governments. There is a unique opportunity to fundamentally rethink regulation, allowing it to take on myriad forms, governmental and otherwise.

The regulatory frameworks that are developed for the collaborative economy need to be well suited for the unique aspects of exchange they facilitate. The scale, variety and technology is different. It is important to think beyond simply trying to retrofit old regulatory regimes onto the new models. While government involvement remains necessary, the role of government may change, moving from execution to helping define and create new third-party agencies, craft new guidelines, and set new standards. Three approaches that are emerging are self-regulatory collectives, peer regulation, and data-driven delegation. Of these, data-driven delegation, which recommends that one "delegate regulation to the party that naturally has the data" holds particular promise, especially when combined with the "API as audits" approach that provides an interface for the government to query the data and ensure compliance. After all, a traditional audit can be thought of as the eventual results of just one such manually performed "query" of a company's internal data.

In order to make data-driven delegation (or any other self-regulatory approach) more likely to succeed, three success factors – credible enforcement mechanisms, perceptions of

legitimacy, and the power of reputation – are identified. It is also clear that the right solution is one that involves a mix of governmental and non-governmental regulation. I provide a set of nine principles to help guide government choices about the right mix of centralized and delegated regulation.

I conclude the report by noting that in 2016, close to one in three workers in many European countries earned all or part of their income from freelance (or non-employment) work, and thus, the collaborative economy is one factor that has made developing new approaches to defining and funding the social contract especially urgent.

New systems of portable benefits that decouple workplace benefits from full-time employment are needed. Some countries may simply need to extend existing government-provided safety nets, while others may need to define new individual-government-institution partnership models. Finally, although the idea of a universal basic income is attractive to many, it may not be the most pragmatic path to a new social contract.

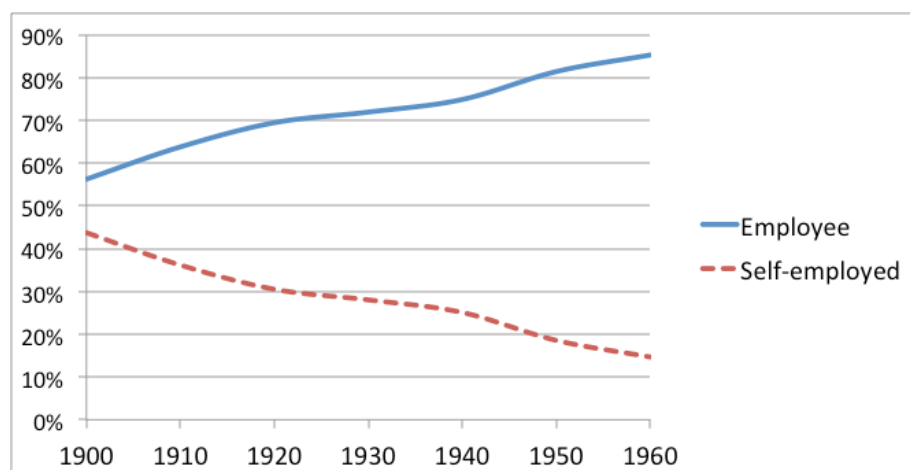
1. DEFINING THE COLLABORATIVE ECONOMY

KEY FINDINGS

- Leaders in the collaborative economy now rival traditional corporations in their scale of business. The shift is reminiscent of how the world's economic activity was organized prior to the Industrial Revolution, when a significant percentage of economic exchange was peer-to-peer, and when the trust needed to make economic exchange possible came primarily from social ties of different kinds. The scale of peer-to-peer today, however, is new, rivaling the largest corporations of the industrial era.
- Definitions of the collaborative economy remain varied, although one unifying definition highlights five factors that unite changes across many industries: market-based exchange; high-impact capital; crowd-based "networks" rather than centralized institutions or "hierarchies"; blurring lines between the personal and the professional, and blurring lines between fully employed and casual labor.

Over the last decade, a new class of digitally-enabled exchange has emerged across a wide variety of industries. As of early 2017, over 100 million people have found short-term accommodation through the platform Airbnb, and through similar UK-based platforms LoveHomeSwap and OneFineStay. Ridesharing platform Uber has facilitated over 3 billion rides across more than 400 cities worldwide since its founding in 2010. France-based ridesharing platform BlaBlaCar, which facilitates city-to-city transportation, now has 35 million members in 22 countries, and operates on a daily scale comparable to that of a national transportation network. Peer-to-peer car rental platforms Drivy (in France and Germany), SnappCar (in the Netherlands), SocialCar (in Spain), Getaround and Turo (in the US) compete with fleet-based car rental companies around the world. Social dining apps EatWith (in Spain) and VizEat (in France) provide a platform-based peer-to-peer alternative to restaurants. Individuals are becoming small-business lenders through UK based peer-to-peer lending platform Funding Circle, venture capitalists through a range of crowdfunding platforms that include AngelList (US), CrowdCube (UK), Derev (Italy), FundedByMe (Sweden) and MyMicroInvest (Belgium), and support projects they believe in through crowd-based platforms like Ulule (France), Wemakeit (Switzerland) and Boomerang (Denmark). A wide variety of specialized labor platforms are creating new opportunities to run a business of one, in industries as varied as in-home services (ListMinut in Belgium, Handy in the US), interior design (CoContest in Italy) and management consulting (Catalan in the US).

These activities – peers giving each other a ride, a place to stay, a meal, a loan, help with home improvement – are not new. What is new, however, is the emergence of digital platforms that grows such peer-to-peer activity to the level where the platform-based exchanges rival the industry-leading corporations. For example, on December 31, 2016, over 2 million people were staying in an Airbnb – someone's bedroom or rented home booked through the Airbnb platform – as a way of getting accommodation in a city or town they were visiting for New Year's Day. (As a point of comparison, the world's largest hotel

Figure 2: Paid US Workforce, 1900-1960 (from Sundararajan, 2016)

chain, Marriott-Starwood, has just 1.1 million rooms.) Scale aside, the scope of transformation across industries is well captured by the analysis from Jeremiah Owyang of Crowd Companies in his collaborative economy “honeycomb” (see Figure 1).

Such exchange is reminiscent of how the world’s economic activity was organized prior to the Industrial Revolution, when a significant percentage of economic exchange was peer-to-peer and intertwined in different ways with social relations, and when the trust needed to make economic exchange possible came primarily from social ties of different kinds. The transition to large corporations with full time employees is even more recent: engaging in some form of small-scale entrepreneurship was very common until the turn of the 20th century. In fact, in 1900, almost half of the compensated US workforce was self-employed. By 1960, this number shrank to less than 15%. (See Figure 2.)

I call this new way of organizing the world’s economic activity *crowd-based capitalism*. I believe that it could radically transform what it means to have a job, reshape our regulatory landscape, and challenge a social safety net funded by corporate employment. The way societies finance, produce, distribute, and consume goods, services, and urban infrastructures will evolve. New ways of organizing economic activity will redefine whom we trust, why we trust them, what shapes access to opportunity, and how close we feel to each other.

Although I favor “crowd-based capitalism” as the most precise label for this subject matter, I often use the terms “sharing economy” and “collaborative economy” for their recognition among broad audiences.

1.1 A Unifying Definition

Experimentation with labels has been extensive since notions of this emergent economy started developing and quickly points to a lack of consensus on the proper term to use. A range of labels, including “collaborative economy,” “sharing economy,” “on-demand economy,” “peer economy,” and “gig economy” are used interchangeably for this new economic system. (To maintain consistency with prior reports and discussions facilitated by the European Parliament, for the purpose of this briefing, “collaborative economy” will be used.) Given the number of definitions that have emerged, and which may continue to develop, it may reasonably be expected that these definitions will vary. To start, I offer my own definition.

I define the collaborative economy as describing economic systems that have five characteristics. (Sundararajan, 2016.)

- Largely market-based: the sharing economy creates markets that enable the exchange of goods and the emergence of new services, resulting in potentially higher levels of economic activity.
- High-impact capital: the sharing economy opens new opportunities for everything, from assets and skills to time and money, to be used at levels closer to their full capacity.
- Crowd-based “networks” rather than centralized institutions or “hierarchies”: the supply of capital and labor comes from decentralized crowds of individuals rather than corporate or state aggregates; future exchange may be mediated by distributed crowd-based marketplaces rather than by centralized third parties.
- Blurring lines between the personal and the professional: the supply of labor and services often commercializes and scales peer-to-peer activities like giving someone a ride or lending someone money, activities which used to be considered “personal.”
- Blurring lines between fully employed and casual labor, between independent and dependent employment, between work and leisure: many traditionally full-time jobs are supplanted by contract work that features a continuum of levels of time commitment, granularity, economic dependence, and entrepreneurship.

1.2 Discussion of Past and Contemporary Definitions

Influential and notable early definitions of the collaborative economy appear in the early books about the topic by Botsman and Rogers (2010) and Gansky (2010). Botsman and Rogers delineate what they consider a broad shift in consumption from the 20th century to the 21st century. 20th century consumption includes access via credit, choice defined by advertising, and ownership, while 21st century consumption includes access via reputation, choice defined by community, and shared access. The latter, for which “collaborative consumption” is their preferred term, is defined in accordance with a set of principles that include critical mass, idling capacity (the untapped value of unused or underused assets), belief in the commons, and trust in strangers.

Gansky focuses on the concept of “the Mesh” to define “a type of network that allows any node to link in any other direction with any other node in the system” (Gansky, 2010). She suggests the Mesh has five central features: (1) it is defined by shareability in a community that may be local or global; (2) it relies on advanced digital networks that use data to track users and content; (3) it relies on immediacy for whenever-whenever sharing; (4) user reviews on social media platforms replace advertising; and (5) it is global in scale and potential. Furthermore, digital networks can detect people’s spare time along with their space capacity in assets and space; each characteristic is increasingly shareable.

More recently, UK-based JustPark founder and author Alex Stephany has provided the following definition of the sharing economy. “The sharing economy is the value in taking underutilized assets and making them accessible online to a community, leading to a reduced need for ownership of those assets” (2015). His definition, too, includes five characteristics: (1) value, either through money or barter; (2) the economy draws on underutilized assets; (3) online accessibility via the Internet; (4) community-facilitated via more fluid exchanges through community trust, social interaction, or shared value; (5) reduced need for ownership, since goods become services.

Different conceptions of the collaborative economy continue to emerge, tailored or expanded to reflect the corresponding markets. As the European Commission noted in a communication issued in February 2016, the “collaborative economy” refers to business models “where

activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals. The collaborative economy involves three categories of actors: (i) service providers who share assets, resources, time and/or skills — these can be private individuals offering services on an occasional basis ('peers') or service providers acting in their professional capacity ('professional services providers'); (ii) users of these; and (iii) intermediaries that connect — via an online platform — providers with users and that facilitate transactions between them ('collaborative platforms')." The report further notes that generally, collaborative economy transactions do not involve a change of ownership and can be carried out for profit or not-for-profit. However, some transfer of ownership of intellectual property may be involved in collaborative economy services.

Similarly, in her report about regulating the collaborative economy for the UK in 2014, LoveHomeSwap founder Debbie Wosskow provides a definition that encompasses material and non-material marketplaces, preferring the term "sharing economy" and defining it as online platforms that help people share access to assets, resources, time and skills. Her definition includes "a broad church of businesses and business models: peer-to-peer marketplaces such as Etsy, which allows anyone to sell their craftware; services like City Car Club, where people can share access to a car without having to own one themselves and time banks like the Economy of Hours which allows you to trade your skills, an hour for an hour" (Wosskow 2014). Furthermore, she observes that that increased digital, mobile and social networking technologies facilitates growth in ease of time and skills sharing.

If using an elemental definition, the "sharing economy" must mean owning less and having access to more. Following this approach, Ranchordàs (2015) notes the influence of technology in helping support increased sharing practices, with elements that include incentives to cooperative, predictive elements and cost effectiveness. Her definition presupposes both the existence of shareable goods that have excess capacity on a systematic basis and an attitude or motivation of sharing. Consumers will share goods when "transaction costs related to the coordination of economic activities within specific communities are low" (2015).

Goudin (2016) selects a measured definition that seems appropriately broad and focused in its scope: "The use of digital platforms or portals to reduce the scale for viable hiring transactions or viable participation in consumer hiring markets (i.e. 'sharing' in the sense of hiring an asset) and thereby reduce the extent to which assets are under-utilised." This definition pre-supposes a rental model, and it again acknowledges technology's role in reducing costs of and increasing access to sharing. This particular definition enfoldes what some consider the breadth of "collaborative economy" and includes sectors that may be similar to the sharing economy, such as the product-service economy. It also shies away from strict focus on business markets and includes consumer activity.

A final definition of the collaborative economy, from a study that examines the growth of the phenomenon in Europe, also encompasses both consumer and business activities: "Collaborative Economy organisations use online platforms to connect distributed groups of individuals and enterprises and enable them to share access to their assets, resources, time and skills on a scale that was not possible before" (Vaughan and Daverio, 2016). The key sectors within a study in Europe that employed this definition examined peer-to-peer accommodation, peer-to-peer transportation, on-demand household services, on-demand professional services and collaborative finance.

2. SOCIAL AND ECONOMIC ASPECTS OF THIS NEW ECONOMY

KEY FINDINGS

- The collaborative economy underscores the need for economic measures that are broader than gross domestic product and per-capita income, and that take a more holistic view of value creation and distribution.
- Even when measured by traditional metrics, the collaborative economy will lead to both economic growth and a shift in the competitive dynamics of a number of real-world industries. Key economic effects include an increase in capital impact, an increased salience of demand-side economies of scale and “network effects,” and an increase in economic activity driven by increased product variety.
- Although it does create a few new billionaires, the collaborative economy can reduce inequality over time by decentralizing the ownership of capital in society. This decentralization is caused by a larger fraction of the population running micro-enterprises through platforms rather than working as full-time employees, and thus enjoying the returns of “owners” rather than “renters.”
- There is a re-injection of social elements into commercial exchange and a blurring of boundaries between social and commercial. This scales behaviors and forms of exchange that used to be among such “close-knit communities” to a broader, loosely knit digital community of semi-anonymous peers. However, the level to which commercial activity is changed in this way varies widely across platforms.
- The shift to the platform-mediated collaborative economy, with its new social aspects, introduces new trust challenges but also provides new solutions to existing trust challenges. As a consequence, regulation, that is naturally interwoven with the provision of trust, does not always have to originate with governments. There is a unique opportunity to fundamentally rethink regulation, allowing it to take on new forms, governmental and otherwise.

2.1 Measuring Economic Impacts

The collaborative economy is changing financing, production, distribution and service delivery around the world. Where commerce is conducted, and with whom, has changed, as has our approach to building capital. Local and global are merging. Crowdfunding increases the pool of commercial lenders and investors, and may permit a range of people who might not otherwise have small business loan access to develop new and innovative businesses. This could lead to various forms of diversification and expansion of existing economic models. The collaborative economy also alters consumer behaviors, creating potential increases in “quality of life” that are not tied to ownership. It also shifts the labor force, as discussed later, from rigid full-time employment to more flexible forms of independent work. How can we measure impacts that include economic effects, qualitative changes in consumer habits, and other improvements in people’s economic lives?

The struggle to define the collaborative economy may in fact reflect critical shifts of both activity and thought processes within it. *As the collaborative economy continues to gain*

prevalence, the need to create new models of how we measure “good” economic outcomes becomes increasingly clear.

Consider the gross domestic product (GDP), the most commonly used measure of economic activity, which is a measure of consumption and production calculated through the prices of all goods and services produced in an economy. While it provides a useful picture, as discussed in Sundararajan (2016), its shortcomings are well understood. First, it is an aggregate measure, providing no evidence of how income, consumption or wealth is distributed. It may not reflect large changes in inequality. Second, it does not fully capture the extent to which economic growth can, at times, have a negative impact on quality of life. For instance, traffic congestion can increase gas consumption which in turn increases GDP, but it is also known to negatively impact the quality of life for commuters. Third, since GDP is only focused on market measures, non-market activity typically goes unmeasured. If non-market activity such as carpooling and apartment barter that used to be “hidden” start to be measured, they may lead GDP to overstate changes in economic activity caused by the collaborative economy. Fourth, GDP is blind to the quality of spending; quantity, not quality, is its focus (it treats spending on education the same way it treats spending gambling). Fifth, unsustainable spending (i.e., spending on nonrenewable resources) is not adequately captured.

The digitization of the economy exacerbates some of these shortcomings with GDP. For example, as search engine use has become widespread, consumers have become increasingly empowered—they can make better choices with access to superior information, a larger number of markets, and up-to-date feedback and reviews on products. However, part of the higher quality of one’s consumer experience is often realized as an intangible “better product fit” or by an increase in “consumer surplus,” which, loosely speaking, measures the difference between the maximum amount the consumer would be willing to pay for a product or service and the actual amount paid. GDP does not capture changes in consumer surplus.

A few alternative measures that take additional factors into account have emerged. For example, World Bank’s Human Development Index, which seeks to measure broader social indicators (e.g., educational attainment and health) and standards of living (such as leisure time). The Better Life Indicator of the Organisation for Economic Cooperation and Development (OECD) takes into account additional factors, including civic engagement and work-life balance. A more radical shift in thinking is represented by the Social Progress Index, which replaces economic metrics with social and environmental ones. Here, basic human needs, such as nutrition and access to basic medical care, water, sanitation services, and safety, are weighed alongside other factors including sustainability, human rights, and education.

Although existing measures are indeed inadequate, I have analyzed what key economic effects we can most likely anticipate when an economy is viewed through these traditional lenses. As discussed in Sundararajan (2016), the four effects are (1) an increase in capital impact, (2) an increased salience of demand-side economies of scale and “network effects”; (3) An increase in economic activity driven by increased product variety, and (4) the democratization of economic opportunity that could potentially reduce economic inequality.

To address specific questions about the repartitioning of economic returns among different actors in the economy that were raised after a November 2016 discussion, I provide an in-depth discussion of the fourth effect.

2.2 How the Collaborative Economy Can Reduce Inequality

A popular lens through which to examine inequality shifts has been described most effectively by French economist Thomas Piketty (2014). At the core of this book is a simple argument: inequality persists because the *returns on capital* (r)—whether invested financial capital, or the sort of entrenched wealth of property and other types of physical investments (i.e., the type of capital that the sharing economy promises to increase the impact of)—are persistently higher than the overall rate of growth (g) in the economy, while the rate of *growth of wages* is roughly the same as this overall rate of growth g . To quote Piketty: “The inequality $r > g$ implies that wealth accumulated in the past grows more rapidly than output and wages. This inequality expresses a fundamental logical contradiction. The entrepreneur inevitably tends to become a renter, more and more dominant over those who own nothing but their labor. Once constituted, capital reproduces itself faster than output increases.”

This observation suggests exciting reallocation possibilities as the collaborative economy expands opportunities for a number of participants in areas such as property, banking and investment, because it may lead to inclusive growth. For instance, Funding Circle in the United Kingdom enables everyday investors, such as retirees or university students who might have a few hundred pounds, to make investments in small businesses that would typically only be the purview of a bank. Investors don’t need a sophisticated understanding of the stock market to invest, and they don’t need any special software to make their investments. Funding Circle’s online platform is easy to use, and user communities provide a rapid education into how to assess potential borrowers.

Thus, the “renters” in Piketty’s language can begin to make money through investing or owning rather than laboring. On a very small scale, people once relegated to laboring for others are assuming new roles and occupying new locations in the established economic equation, moving from wage receivers to capital owners. Over two million Airbnb hosts now own most of the capital that would have been concentrated in the hands of the shareholders and franchisees of a hotel chain. In other words, these changes are expanding the fraction of the population that have the “ r ” kind of growth in their returns rather than the “ g ” kind.

Most importantly, this shift is happening in a way that favors people traditionally not on the high end of the wealth spectrum. Most people who choose to Airbnb a spare room, lend on Funding Circle, or rent out their car on Drivy are generally people who have less rather than more capital. They may not be poor but they certainly aren’t part of the traditionally wealthy. The people who seek an education on platforms like Coursera in the future may be those that were excluded from gaining a traditional high-quality four-year college degree, which loosens the traditional gatekeeping mechanisms that have prevented many of these people from moving from worker to owner or worker to investor. Furthermore, over time, a percentage of these new “micro-entrepreneurship” opportunities that empower individuals previously constrained by employment at traditional corporations may evolve into enterprises larger than sole proprietorships.

I analyze this issue rigorously in Fraiberger and Sundararajan (2015), in which we develop a general economic model of the collaborative economy and calibrate it with two years of data from Getaround, a large peer-to-peer car rental marketplace. The study poses the question of whether the rapid growth of the sharing economy can increase an economy’s total welfare. Our findings show that collaborative economy markets change consumption mixes significantly, substituting rental for ownership and lowering used-good prices while increasing consumer surplus. Most saliently, consumption shifts are significantly more pronounced for below-median income users, who also provide a majority of rental supply. Results also suggest that *below-median income citizens* enjoy a disproportionate fraction of eventual

welfare gains from this kind of sharing economy through broader inclusion, higher quality rental-based consumption, and new ownership facilitates by rental supply revenues (2015).

Thus, the collaborative economy will have a disproportionately positive effect on lower-income consumers across almost every measure. This segment is more likely to switch from owning to renting, provides a higher level of peer-to-peer marketplace demand, is more likely to contribute to marketplace supply, and enjoys significantly higher levels of surplus gains. As we note in the paper: “We highlight this finding because it speaks to what may eventually be the true promise of the sharing economy, as a force that democratizes access to a higher standard of living. Ownership is a more significant barrier to consumption when your income or wealth is lower, and peer-to-peer rental marketplaces can facilitate inclusive and higher quality consumption, empowering ownership enabled by revenues generated from marketplace supply, and facilitating a more even distribution of consumer value. Our hope is that our economic findings will inform policy makers as they formulate appropriate regulatory policy for this increasingly important part of the economy” (2015).

2.3 The Blurring of Lines Between Social and Commercial

As discussed earlier, the struggle to define the collaborative economy reflect critical shifts of both activity and thought processes within it. Another such shift is the injection of a social element into commercial activity, to varying degrees, as one moves away from industrial capitalism and towards crowd-based capitalism. Indeed, this social aspect of exchange is contained in a number of the influential early definitions of the collaborative economy, and perhaps is responsible for the popularity of the term “sharing” to describe the phenomenon. I illustrate this shift using a series of examples.

Consider first the face-to-face, peer-to-peer grocery model being pioneered in Paris by La Ruche Qui Dit Oui (which translates roughly to “the beehive that says yes” and is known as The Food Assembly in English-speaking countries). Rather than going to a grocery store, consumers instead meet farmers at a designated neighborhood spot to pick up produce they’ve ordered. The transaction becomes a social outing that tends to be festive—a far cry from the typical isolated experience in a large grocery store (Sundararajan 2016).

Although this kind of social element is prevalent across a range of collaborative economy industries, the extent to which it exists varies significantly, and is tied to a literature on the difference between “market economies” and “gift economies.” The contrast between these two economies is made best by Hyde (1985), who argues that through history, societies have had, in parallel with market economies, *gift economies* in which the property value or consumption value of the object or service is largely irrelevant, and that the true purpose of any exchange or transfer of objects is of increasing social cohesion. Put differently, much of exchange through history has been tied very closely to the creation of community.

As discussed in Sundararajan (2016), today’s sharing economy scales behaviors and forms of exchange that used to be among such “close-knit communities” to a broader, loosely knit digital community of semi-anonymous peers. In asking whether we should expect the natural integration into the sharing economy of the “gift” motivations and practices that characterized the economies of these smaller communities, it is useful to view the new economic activity as existing on a continuum between gift economies and market economies, with some cases at both ends of the spectrum, and many more in between.

Let us consider, as a next example, three platforms for short-term accommodation: Couchsurfing, Airbnb and OneFineStay. Whereas sleeping at someone’s house used to involve close friends, or even friends of friends, the collaborative economy now matches strangers to strangers. Peers around the world meet and rely on a platform based on trust, generated

through reviews. However, such platforms range from the nearly pure gift economy of Couchsurfing (based on hospitality and the desire to create community, users care very little about quality of accommodation and view the exchange simply as a means to connect with others), to the hybrid of Airbnb (hosts and guests may leave gifts such as a bottle of wine, but they may never meet), to the pure market economy of OneFineStay, which permits consumers to rent luxury accommodations, and whose amenities are designed to mirror those of high-end hotels, where consumers are commercial guests, not friends.

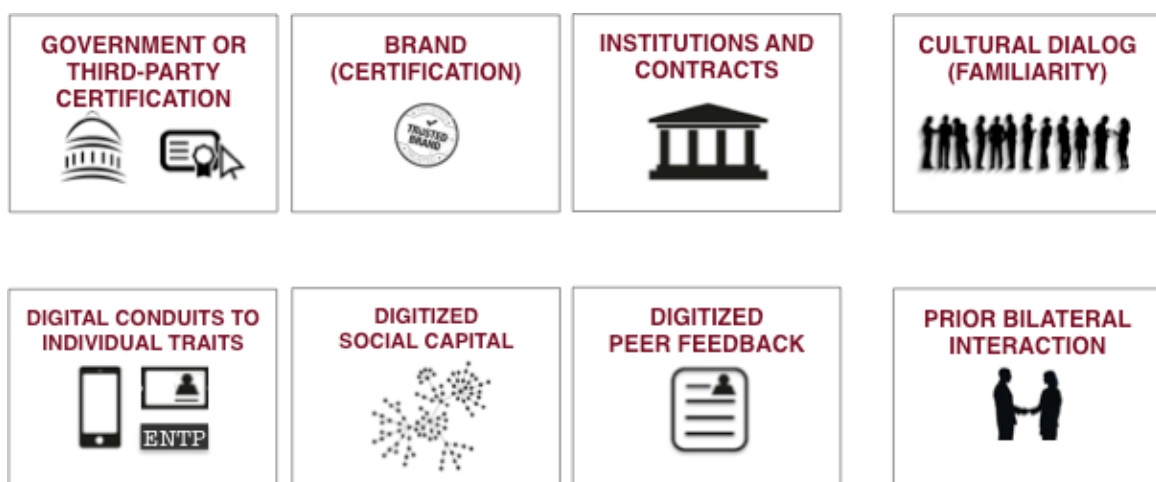
Similarly, crowdfunding platforms such as Kickstarter, Kiva, Funding Circle and AngelList variously incorporate social elements. Their peer-to-peer financing permits people to fund a wide variety of projects that otherwise may have been funded (or not) via word of mouth or traditional commercial channels. Kickstarter and Kiva rely on an actual or perceived personal connection. Donors may not ever meet the creators of the project to which they donate, but they feel personally connected through personal stories about “their” project or its founder, and its progress. While the market economy stands behind both in their finances are involved, the philanthropic or gift motivations are clear. Funding Circle involves few personal stories and focuses on financial details; AngelList takes a strict market economy approach, matching investors and business in a traditional venture capital model.

2.4 The Ascendancy of Social Aspects in Trust Provision

This re-integration of social ties into commercial exchange leads one to reflect on the fact that the social aspect of commerce has historically played a central role in facilitating trust. Since much of government regulation exists to fill gaps in commercial trust, and trust is the foundation of any economy, any discussion of regulation requires further exploration of this connection as a preamble.

The explosion of the collaborative economy can be attributed in part to dramatic improvements in our ability to get people to trust others they don't know through the use

Figure 3: The Digital Trust Grid (from Sundararajan, 2016)



of different systems generating reliable digital cues that together might be thought of as the “digital trust grid.” It helps at this point to define “trust.” Of course, in many ways, the definition depends on the context. Trust in a romantic relationship might mean something different from trust in a commercial transaction. A particularly useful definition in the context of the collaborative economy comes from the sociologist James Coleman, who defined trust

as “a willingness to commit to a collaborative effort before you know how the other person will behave.”

Establishing trust depend on a multiplicity of dimensions. In a non-face-to-face (and sometimes face-to-face) setting, it first involves establishing authenticity. Is this provider real? Are they who they say they are? Second, it involves assessing intentions. Do these providers have good intentions or are they looking to steal from me or harm me? Third, it involves assessing expertise or quality. Is this person a good designer? Are these people truthfully representing how interesting their neighborhood is? Are they polite? Is that investor as experienced as she claims? Does the car have as much legroom as the photo indicates?

Put differently, trust relies on verifying identity, intentions and capabilities. I have proposed in the past that this process of verification in semi-anonymous Internet-based peer-to-peer settings stem from multiple cues. These cues include learning from one’s own prior interaction; learning through familiarity that comes from the nature of exchange being part of the “cultural dialogue”; learning from the explicit experiences of others; learning through brand certification; learning by relying on digitized social capital; and the reliance on digitized forms of real-world identity, validation from external institutions or entities, government and non-government, digital and otherwise. (See Figure 3.)

In many ways, the lower the stakes of the interaction, the easier it is to establish sufficient trust. This is why early platforms such as eBay scaled early – the stakes are lower when buying a product from a stranger than when getting into a stranger’s car and saying “drive me to another city.” While we have had digital access to some of these sources of trust for some time—arguably since peer-to-peer platform eBay was established in 1995—the final two have become digitally available at scale only recently (Sundararajan 2016).

The government, of course, plays a central role in the validation within the final trust cue, in part through regulation of different forms. But to better interpret some of the stances around government regulation and trust relative to the collaborative economy, it is important to understand that regulation is an evolving system with an eclectic history—a history that has often involved social factors. Consider the example of Maghribi traders, who played a leading role in world trade in the 11th century. Competitive advantage at that time depended on the ability to ship goods without traveling with them. A good relationship with an overseas agent—whose actions once a shipment arrived could not be tracked—was key.

This medieval trading community holds important lessons for the 21st-century collaborative economy. In both cases, we are faced with the challenge of establishing trust provisions in markets that stretch across geographic and cultural boundaries. A combination of *reputation* and *self-interested community* created the trust provisions that would govern the behavior of overseas agents. As described in detail by Greif (1989), a first part of the trust system involved paying agents a wage greater than any available to them elsewhere; they could sustain the wage by acting honestly. A second part was the formation of coalitions of merchants and agents – relationships built on community and social, not governmental, trust. Put differently, trust was built by creating a situation where one’s reputation mattered (overseas agents known for corruption would over time fail to profit), and by trust was built by creating communities of shared interest that connected reputation to economic self-interest (the formation of merchant coalitions who adopted common hiring policies and penalties meant corrupt overseas agents had more to lose).

Because the collaborative economy creates new ways of providing familiar services that are traditionally often highly regulated, regulatory conflict is to be expected, and indeed, around the world, governments have struggled with how to best regulate this new form of exchange. This historical parallel is provided to underscore the fact that today’s shift to the platform-

mediated collaborative economy, with its new social aspects, introduces new trust challenges but also provides new solutions to existing trust challenges. *Regulation, often interwoven with the provision of trust, doesn't always have to originate with governments.* Regulation can take on myriad forms, governmental and otherwise.

Responding to this ongoing shift requires a fundamental rethinking of how we regulate. We may need to imagine a regulatory system that works with, rather than against, the platforms of the collaborative economy. I discuss the shape such a system can take in greater detail in the next section.

3. EVOLVING REGULATION FOR CROWD-BASED CAPITALISM

KEY FINDINGS

- Trust infrastructures on collaborative economy platforms can be far deeper and complex than simply being “online feedback systems.” They often include verified and digitized government IDs, digitized social network data, institutional membership data, corporate brand, and teams of humans screening and reacting to non-standard situations. These trust systems allow society to rethink approaches to regulating business.
- In the long-run, regulating the collaborative economy will require some degree of delegation of responsibility to third parties, including the collaborative economy platforms. Such an approach is especially well-suited to this new economy in part because of the increase in variety of scale in businesses, and partly because data-driven approaches will frequently have better outcomes if delegated.
- For collaborative economy regulation to be successful and sustainable, platforms must be viewed as regulatory partners rather than being treated as the targets of regulation. Three emerging models of regulation for the collaborative economy are peer regulation, self-regulatory collectives and data-driven delegation.
- Mandating transparency by requiring platforms to provide data to the government is not always optimal; data-driven delegation can often be a superior approach. However, delegation of regulation is not always in the best interest of society. A set of nine new principles provide guidance on what the right boundaries between the government and the platform should be.

As collaborative economy business models conflict with the rules governing older ways of providing familiar services, we may have already, de facto, returned to a model of trust built on community consensus and gained reputation. This is part of a broader shift that has been underway since the advent of the commercial Internet in the mid-1990s. Community-generated trust has been digitized through peer reviews for real-world institutional businesses. User-generated reviews of restaurants can affect the establishment's bottom line, with Yelp eclipsing Zagat for reviews. Yelp is also effective in helping city health departments trace food-borne illness; such crowd-based monitoring can complement traditional regulations, detecting deficiencies in and inducing enforcement of, regulations already on the books.

However, it is critical that we move beyond the frequent rhetoric of “digital reputation replaces government regulation.” This is only a small part of the broader regulatory picture. In what follows, I outline a few new models that are emerging. As a preamble, some key points that inform my analysis are summarized below.

(1) Platforms represent a new generation of third-party institutions that mediate peer-to-peer transactions. Thus, they can be called on to define or enforce rules that govern these transactions. Twenty years ago, a taxicab regulatory body was essential to prevent market failure. Today, the fact that Uber and Lyft exist as intermediaries suggests the possibility that they can take on many of the roles that the government was forced to play. The space of possible regulatory solutions is expanded.

(2) Sometimes the interests of a platform align well with those of society, but sometimes they do not. For example, Airbnb has a natural incentive to ensure that hosts accurately represent the quality of their lodging; commercial and societal interests are well aligned. In insuring that guests are not too noisy, however, Airbnb may be faced with a conflict between commercial and social objectives.

(3) Peer-to-peer platforms often offer a greater variety than traditional providers. Thus, what might have been an easy “one size fits all” approach to, say regulating taxicabs and limousines might be challenged when one has a range of different private cars, taxis, motorcycles and other forms of shared transportation. Similarly, the sheer variety of options on Airbnb, relative to that of hotels, suggests that regulations that may be sufficient for, say, spare bedrooms may not be adequate for tree-houses or houseboats.

(4) A majority of peer-to-peer providers are small businesses. This widespread reduction in commercial scale requires a reexamination of the associated regulatory approach. Should the micro-entrepreneurs using peer-to-peer platforms—for example, someone selling handcrafted toys on Etsy or someone renting out their spare room on Airbnb—be held to the same standards as a major toy manufacturer like Mattel or a major hotel chain like Hilton? If so, who should be held accountable for meeting these regulations—the owners of the platforms, the micro-entrepreneurs using the platforms, or both? Is there a way to build trust and protect consumers while not placing insurmountable restrictions on micro-entrepreneurs?

(5) Today’s collaborative economy platforms simultaneously spur innovation and challenge regulations. Often, they appear on the market without seeking permission from public officials. The “experimental” nature of innovation is particularly important, but it also disrupts the stability and continuity of rules. Regulators often try to fit innovative services into existing frameworks rather than updating frameworks to accommodate innovation (Ranchordàs, 2015). As the number of independent commercial providers scales well into the millions in many industries, rigid enforcement of existing forms of government enforcement may stifle the experimentation necessary for an innovative society to thrive.

3.1 New Approaches to Regulation

Many of the new considerations that the collaborative economy generates – including the redefinition of trust provision, the blurring of lines between social and commercial, between personal and professional, and the peer-to-peer nature of the interaction that is mediated by a third party – suggest a re-examination of the approach a society must take towards regulating its commercial activity. We clearly don’t want to abandon regulations entirely. However, there are a wide variety of regulatory “entities” that have governed trust, safety, and the prevention of market failure in the past, and in our economy today. Government regulation entities are just one in a spectrum of forces that facilitate trust.

For the collaborative economy, the regulatory frameworks we develop need to be well suited for the unique aspects of exchange they facilitate. The scale, variety and technology is different. It is important to think beyond simply trying to retrofit old regulatory regimes onto the new models. Of course, government involvement remains necessary but the role of government may change, moving from execution to helping define and create new third-party agencies, craft new guidelines, and set new standards. The collaborative economy platforms themselves may already providing the genesis of a new solution.

Recommend several approaches to regulation that shift some of the regulatory burdens to non-governmental stakeholders, while maintaining stringent government oversight. When prescribing partial reliance on self-regulatory solutions, it is very important to note that ***self-regulation is not the same as deregulation or no regulation***. As stated in Cohen and Sundararajan (2015), given its history and diversity, it is unsurprising that self-regulation defies a simple definition or categorization. Self-regulatory systems vary widely based on their levels of voluntariness, accountability, enforcement, and governmental intervention. For instance, Professor Julia Black distinguishes among four types of self-regulation. “*Voluntary* self-regulation” involves no direct governmental involvement or mandates. “*Coerced* self-regulation” occurs when an industry formulates and imposes rules due to the threat of governmental regulation. Under a “*sanctioned* self-regulation” regime, the industry formulates rules subject to governmental approval. And, lastly, “*mandated* self-regulation” occurs when the government requires the industry to establish a self-regulatory framework (Black, 2001). Furthermore, self-regulatory regimes vary both by their methods and rigorousness of accountability and by their levels of formality.

Having clarified the scope of what might be meant as “self-regulatory,” I now turn to three approaches to regulation that I believe may hold the most promise for the collaborative economy in Europe. Each of these is discussed in much more detail in Sundararajan (2016).

(1) Peer regulation: Peer regulation can represent an equitable way to regulate from within, remaining cost-efficient and leveraging learning-by-doing in a way that suits the scale of peer-to-peer. Peer regulation draws on peers creating standards for one another. This type of regulation is already built into most collaborative economy platforms. For example, the review system on Airbnb includes two layers of reviews—public reviews that are visible to other travelers and private reviews that are visible only to hosts. The reviews serve regulatory functions for existing and new users and hosts. This approach is also advantageous because no single benchmark needs to apply to every model; the market doesn’t demand that the standards for renting a small studio be the same as those for renting a luxury condo. The “regulators” – those users staying in each space—are naturally different. The platform thus supports myriad context- and customer-specific standards within a single regulatory framework.

(2) Self-Regulatory Collectives: In a self-regulatory collective, defining and/or enforcing of regulation is done by an organized third party that is not the government. Generally, such collectives are privately run with limited governmental involvement, though they vary widely based on levels of voluntariness, accountability, enforcement, and governmental intervention. A self-regulatory collective is meant to police an industry by formulating regimes of collective rulemaking in which entities come together to develop, monitor, and at times, enforce standards to govern the behavior of members. It is worth noting that in the industrial economy, in many professions that remained peer-to-peer rather than being delivered by corporations, like medicine, law and real estate, self-regulatory collectives naturally emerged. For example, in the United States, the American Medical Association, various state bar associations, and the National Association of Realtors continue to play important regulatory roles in parallel with the government. (In fact, the roots of modern-day self-regulatory collectives are in the trader guilds of medieval Europe.)

An early example of a self-regulatory approach for the collaborative economy is embodied in what was formulated by the State of California in 2013, and updated in 2016. At this time, the state Public Utilities Commission created the framework for and the first instance of Transportation Network Companies (TNCs) to establish a self-regulatory approach for peer-to-peer transportation platforms such as Lyft and Uber. Under this approach, the government

establishes a set of standards to which drivers must comply, and the platform takes on the role of enforcing these standards. A platform needs to register as a TNC, and is then responsible for ensuring all drivers who get business through its platform are compliant.

(3) Data-Driven Delegation: Governments around the world often mandate that collaborative economy platforms hand over a range of operational data to city and state governments, who may then use the data to regulate. However, there is a different alternative to “mandated transparency,” one I call “data-driven delegation,” wherein rather than having a platform transfer data from within its systems to the government, the data is instead left inside the platform’s own systems, while allowing the use of the data for regulation by delegating regulatory responsibility to the platform. Put simply, this approach recommends that one “delegate to the party that naturally has the data.” This approach raises fewer familiar privacy concerns and poses lower risks of leaking competitively harmful information. There is precedent to this approach—publicly traded corporations are, in some sense, also regulated in a delegated data-driven way. They provide audited summary evidence rather than being asked to provide raw operational data for a regulator to use in confirming compliance.

Given the specific interest of the Parliament in this third approach during the discussion in November 2016, I provided a few examples of this approach in the section that follows.

3.2 Data-Driven Delegation and APIs as Audits

Let us start with a simple problem—of collecting taxes from millions of collaborative economy providers rather than a few hundred corporations, from hundreds of thousands of Airbnb hosts rather than from a handful of corporate hotel chains. The delegation of hotel occupancy tax collection to Airbnb is an example of data-driven delegation. It is something many European cities, including Lisbon, are experimenting with. This approach is likely to yield higher tax revenues and greater compliance than a system where hosts are required to register directly with the government, which is something occasional hosts seem reluctant to do. It also sidesteps privacy concerns resulting from mandates that digital platforms like Airbnb turn over detailed user data to the government.

There may, of course, be concerns that the numbers provided by some platforms will not be accurate. This can be easily overcome by asking for audited evidence of compliance. A more forward-looking alternative might be to replace audits with an *application programming interface (API)* to the platform that is made available to the government for *audit* purposes. Such an API would not provide access to raw data, but could allow a government can run “queries” to verify compliance.

This approach of creating an API can be thought of as a generalization of the idea of an audit for the digital era. After all, an audit can be thought of as the results of just one such manually performed “query” of a company’s internal data.

There is also significant opportunity for collaborative economy platform to build credibility as they start to take on quasi-governmental roles they are given through data-driven delegation. For example, the cities of London and Amsterdam have delegated to Airbnb the role of enforcing local laws that place limits on the number of days a host can offer a dwelling for short-term rental. This is yet another example of data-driven delegation, one that has many strengths over a protocol wherein the government mandates handing over all platform activity data, and then has to struggle to enforce the laws through an analysis of this data by itself and by asking Airbnb to remove offending hosts. After all, the platform itself is the one with the greatest enforcement capability: it can simply deactivate hosts who are not in

compliance with the digital flick of a switch, thus saving significant governmental and societal resources.

In addition, data-driven delegation might offer innovative approaches to not just the collaborative economy's own regulation challenges, but to unresolved ones that predate its emergence. Consider a different example, of racial discrimination. There has long been anecdotal evidence that some yellow cabs in New York discriminate against some nonwhite passengers. There have been similar concerns that such behavior may start to manifest on ridesharing platforms and in other peer-to-peer markets for accommodation and labor services. A series of studies by Benjamin Edelman and Michael Luca of Harvard suggested that African American hosts might have lower pricing power than white hosts on Airbnb, and that guests with "distinctively African American names" were less likely to receive favorable responses for their requests to Airbnb hosts.

This research raises a red flag about the need for vigilance as the lines between social and commercial blur. Collaborative economy platforms are not inherently biased, but rather provide services that give transparency to undesirable human biases that manifest when people make choices about, for example, the usage of spaces they consider personal.

The approach of data-driven delegation would allow society to apply machine-learning techniques to be able to identify patterns associated with discriminatory behavior. For a couple of decades now, companies have been using such techniques on the large sets of "data trails" customers provide through their digital interactions. One such familiar effort is for credit card fraud detection. When an unusual pattern of activity is detected, you get a call from your bank's security team. Sometimes your card is blocked temporarily. This saves billions of euros in taxpayer and corporate funds by detecting and blocking fraudulent activity swiftly.

Such methods hold tremendous promise as a way to detect discrimination, often difficult to identify on a case-by-case basis during face-to-face interaction, but which may be brought to light and addressed with data analytics. Rather than tasking the government with the development of such methods on data provided by platforms, it is better to allow, or perhaps even require, the platforms to develop these methods themselves and apply these to the data that remains within the platforms. After all, they have access to some of the world's best computer scientists, and delegation allows the use of all internal data, not just data subject to government reporting.

Besides, often, a platform may spot new problems to address and devise new solutions that the government may not have considered as yet. For example, in 2008, Google engineers announced that they could predict flu outbreaks using data collected from Google searches, and track the spread of flu outbreaks in real time, providing information that was well ahead of the information available using the United States Center for Disease Control's (CDC) own tracking systems. It seems highly unlikely that such a system would have emerged if Google had been asked to hand over anonymized search data to the CDC, and there would have probably been widespread public backlash to this on privacy grounds. Besides, the reason why this capability emerged organically from within Google is partly as a consequence of Google having one of the highest concentrations of computer science and machine learning talent in the world.

As sharing-economy self-regulatory organizations—whether platforms themselves or third-party associations that emerge—establish a track record of credibility and enforcement and gain legitimacy as partners in regulation, they can then perhaps be called on to help invent self-regulatory solutions to social issues that are especially difficult to address by centralized

governmental intervention. One might imagine a variety of societal objectives being achieved in part by the platforms applying machine-learning techniques to their data to detect patterns, or integrating some notion of social responsibility into the design of their software systems. The approach of data-driven delegation can yield far more expansive “regulating through data” alternatives than are feasible with mandated transparency, and it suggests promising opportunities for self-regulation—ones that are appropriately reflective of the interesting meld of a decentralized marketplace and a centralized institution that the collaborative economy platforms represent.

3.3 Success Factors for Self-Regulatory Approaches

Given the promise of different delegated approaches, and the emergence of platforms as credible new third-parties in the growing world of peer-to-peer, it is essential that these platforms not be viewed as entities to be regulated, but rather as actors that are a key part of the regulatory framework in this arena. However, as noted earlier, the interests of platforms may often diverge from the broader interests of society. It is thus necessary to think carefully, and to learn from historical successes and failures, about which areas and tasks might be most suitable for the delegation of responsibility to platforms. Before outlining some principles, I first provide, based on my prior work (Cohen and Sundararajan, 2015) analyzing a number of cases of success and failure in SROs, three broader success factors for self-regulatory approaches.

Credible enforcement mechanisms: The credibility of a platform in enforcing rules and regulations is key. Consider the example of the US-based Institute of Nuclear Power Operations (INPO), an SRO that was established in 1979 following the nuclear accident at Three Mile Island. It now successfully regulates United States nuclear-power operations. However, the INPO had to earn its reputation and gain credibility over time. For instance, it worked with the Nuclear Regulatory Commission after finding notable deficiencies at a Philadelphia nuclear plant, correcting the deficiencies, and providing such harsh regulatory criticism that several top plant executives lost their jobs. This was possible because the INPO had enforcement capabilities, and the event established it as a powerful, trustworthy agency. Similarly, today’s ridesharing platforms have powerful enforcement capabilities: they control the channels for demand for their drivers, and as digital platforms, disconnecting a driver involves minimal transaction costs for the companies. Of course, it is essential they also use these capabilities in a way that builds comparable credibility.

Perception of legitimacy: While it policed its members effectively, the INPO’s enforcement mechanisms and early successes were valuable also because they legitimized the perception of INPO both inside and outside the nuclear-power industry. This contrasts with the legitimacy problem of the United States Finance Industry Regulatory Authority (FINRA), which regulates the activities of securities firms that transact with the public. Despite decades of financial innovation, the US financial-services industry is rarely cited as a model for self-regulatory success; this is in part because of the limited enforcement capabilities of FINRA and its predecessors. A key lesson for the collaborative economy is that, with self-regulation, perception and legitimacy go hand-in-hand. A clear image of objectivity and enforcement must be created early by the platforms, perhaps through some visible examples of enforcement and governmental partnering.

The power of reputation: Despite the potential for digital reputation systems, observers question whether these systems have significant regulatory power. It is important to realize that many self-regulatory organizations predating the digital economy rely on the power of reputation to bolster compliance with industry rules. For example, the US cotton industry self-regulates via private law, with reputation playing a critical role. Merchant-to-mill and mill-to-mill cotton transactions are governed by rules that trade associations and exchanges

adopt; these rules provide default contract provisions covering issues such as performance, quality, payment, and damages. The associations govern disputes in which financial sanctions may be imposed for noncompliance.

3.4 The Scope of Self-Regulation: What Should Be Delegated to Platforms?

A crucial next question is where the lines between the role of the governmental regulatory agencies and the delegation to the platforms must be drawn. There is no easy answer to this question. It is clear that the right solution is one that involves a mix of governmental and non-governmental regulation. However, in what follows, I provide some principles for making these difficult choices.

(1) **Technological solutions to information asymmetry:** As noted earlier, platforms represent a new generation of third-party institutions. Often, the existence of a governmental regulatory body was due to market failure caused by some form of *information asymmetry*. For example, in the past, a passenger might not have known the shortest route in a new city, or the right prices for taxicab services. Thus, it was necessary for a government body to set standards and install meters in taxicabs. But in today's era of GPS and smartphones, the need to install government-issued meters seems lower; besides, the existence of nationwide or even global platforms indicates that this role can be delegated to them in a manner than benefits society.

(2) **Internalizing externalities:** In contrast, when historical government intervention was because of externalities, delegation may be less effective. The choices of a buyer or provider in a peer-to-peer transaction may impose costs on (or result in benefits to) others, and these externalities often may not be naturally taken into account (or internalized) when trading peers make choices. When these externalities are negative, continued involvement by either the government or a non-platform third-party may be necessary. For example, an additional car on the road creates congestion and lengthens travel times for other drivers, an externality that may not be adequately internalized by Uber. A noisy Airbnb guest in an apartment building might impose costs on the other residents with his or her disturbing behavior, requiring intervention by a homeowner association that represents all building residents, not just those residents hosting on Airbnb.

(3) **Alignment of social and profit interests:** Similarly, if a desired social outcome is at odds with a platform's profit motive, delegation must be considered with care. For example, wheelchair accessible vehicles may be more expensive and thus less profitable than regular vehicles. If the choice of how many of these to provide is delegated to the platform, this can result in a supply level that is less than what the city might want, and having government-issued rules about a minimum fraction of vehicles on the platform that are accessible remains the right regulatory solution.

(4) **Scope of useful data:** In deciding on the right situations for data-driven delegation, it is useful to consider whether the effectiveness of regulation increases as the *scope of available data* for regulation increases. Consider the example of detecting racial discrimination. One might be able to detect some of this undesirable behavior by analyzing histories of completed transactions (who did you accommodate in your Airbnb, who did you give rides to in your Uber) that a government can request. However, one can do a much more effective job by expanding the scope of data used by the algorithm, to include, for example, rejected transactions, whether the guest searched for specific characteristics, whether the provider viewed or clicked on the customer's photograph before accepting or rejecting, and other browsing or viewing patterns that may simply be beyond the scope of a governmental data request. Such a situation favors data-driven delegation.

(5) **Privacy costs:** In deciding on the right situations for data-driven delegation, it is also helpful to weigh the potential *privacy costs to society* from mandating data transparency against the potential costs to society from auditing platforms for compliance. If the data required to regulate effectively is of the kind whose sharing imposes a potentially high cost on the platform's users, or that may raise citizen concerns about government surveillance, this favors data-driven delegation.

(6) **Technological sophistication:** In deciding on the right situations for data-driven delegation, it is also useful to consider the *technological sophistication* of the potential non-governmental partner, and the *complexity of the data analysis* required for effective detection and correction. If the platform in question has technological talent resources that are likely to be superior to those a smaller government agency might be able to attract or afford, and the task at hand (for example, email spam detection, or fraud detection) requires some technological sophistication, this favors data-driven delegation.

(7) **Need for timely enforcement:** In deciding on the right situations for data-driven delegation, it is also helpful to consider the social costs and benefits of a *timely regulatory response*. For example, the availability of certain kinds of inappropriate content on YouTube has immediate social costs given the speed with which access to such content may spread. Thus, delegating the role of regulating such content to YouTube can benefit society, since YouTube has a far superior ability to detect, as well as to act on enforcement (block or remove the offending content) much more rapidly than a government regulatory agency.

(8) **Cost advantages of delegation:** In deciding on the right situations for data-driven delegation, it is also useful to consider the *relative costs* of the governmental and non-governmental options. For example, it costs Airbnb a lot less to simply deduct taxes for each transaction, aggregate these receipts, and transfer them to a city government periodically, than it does for a government to set up a reporting system for hosts, for hosts to have to report their earnings, compute tax and file paperwork associated with the tax remittal, and for the government to then have to audit these receipts. This favors delegating the role of tax collection to Airbnb using a data-driven delegation approach.

(9) **Variety and pace of change:** In deciding on the right situations for delegation more broadly, it is also useful to consider how much variety there is in the provider population, and how much this is likely to change over time. For example, it is relatively easy to predict the kinds of accommodations one might have in hotels in the near future. It is harder to predict all the different kinds of accommodation options that might be made available on Airbnb. In such a situation, delegation to Airbnb has the advantage of allowing timely responses to new situations.

4. A NEW SOCIAL CONTRACT

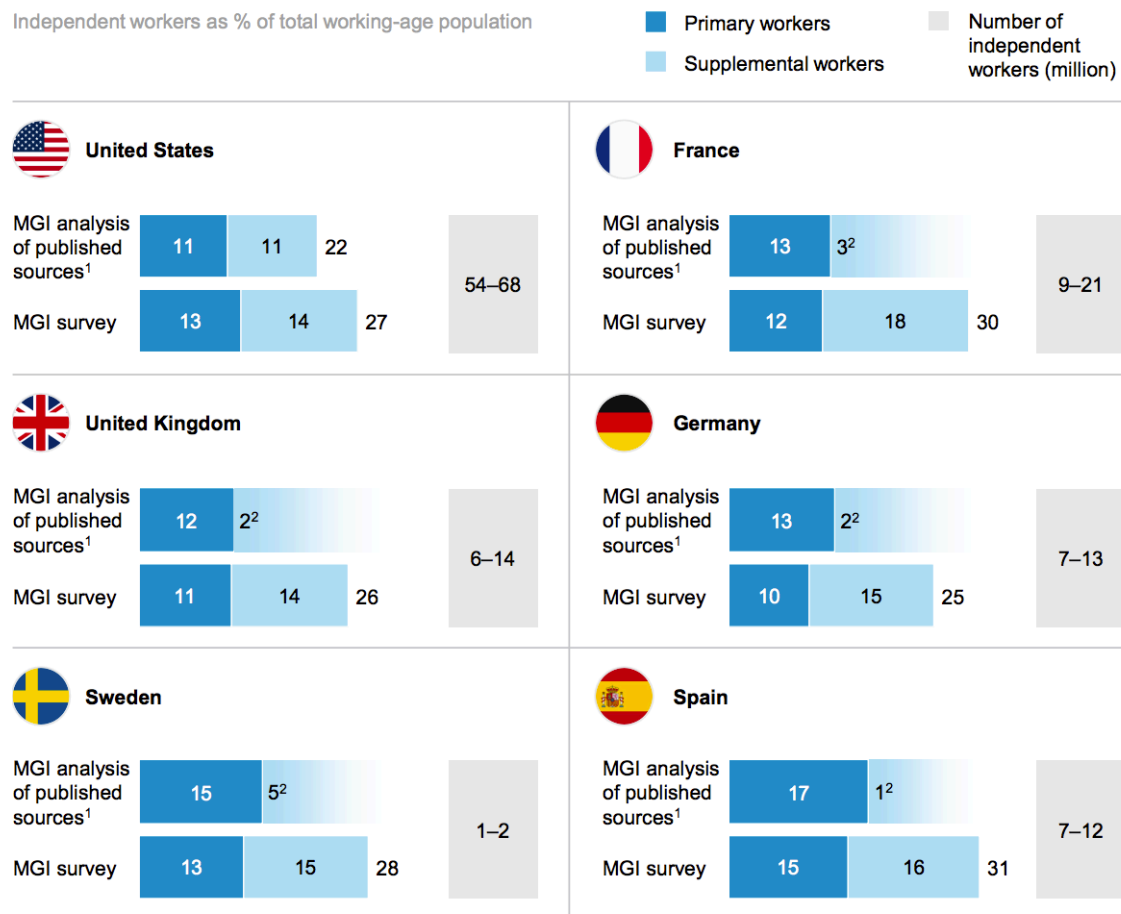
KEY FINDINGS

- The collaborative economy is one of many forces that is creating a new workforce across a range of countries, shifting labor from full-time to independent work. As of 2016, close to one in three workers in many European countries earn all or part of their income from freelance (or non-employment) work.
- Preparing for the workforce of tomorrow requires new approaches to defining and funding the social contract. The 20th century social contract for a worker was defined to be dependent on full-time employment. Employers often provide funding for healthcare, paid vacations, a stable income and workplace insurance. We need a new funding model.
- New systems of benefits that decouple workplace benefits from full-time employment are needed. These benefits should be independent, portable, universal and supportive of innovation.
- Some countries may simply need to extend existing government-provided safety nets, while others may need to define new individual-government-institution partnership models. These might mirror retirement savings plans wherein individuals put aside a portion of their income each month, corporations supplement their contribution, and the government provides a tax break.
- Although the idea of a universal basic income is attractive to many, it may not be the most pragmatic path to a new social contract. Apart from being a very high fraction (30%-50% of a country's federal budget), philosophically, governments should not simply collect and transfer: they should decide how this money is spent, funding those programs that maximize the societal returns of tax revenues.

4.1 The State of the Freelance Workforce

The collaborative economy is one of many forces that is creating a new workforce across a range of countries, shifting labor from full-time to independent work. With that shift comes one of the most important public policy questions of our time: how we will refashion the social contract associated with work?

First, we must establish the extent to which the shift is taking place. Many studies have aimed to quantify the rise of freelance work. For example, in the United States, it is estimated that the share of workers in alternative work arrangements, defined as temporary help agency workers, on-call workers, contract workers, and independent contractors or freelancers, rose from 10.1 percent in February 2005 to 15.8 percent in late 2015 (Katz and Kruger, 2016). The Freelancers Union estimates that 22 percent of U.S. working-age population are freelancers or self-employed in their primary or secondary job (McKinsey, 2016). A striking implication of these and other similar estimates is that almost *all of the net employment growth* in the US economy from 2005 to 2015 appears to have occurred due to a growth in freelance work.

Figure 4: The independent workforce (from Manyika et al. 2016)

One of the most recent and comprehensive studies, by the McKinsey Global Institute, indicates that the shift to freelance work is significant not just in the United States, but across many countries of the European Union as well (Manyika et al 2016). This study estimates that 30% of the workforce in France, 25% in Germany, 31% in Spain, and 28% in Sweden are earning all or part of their income from independent (non-employment) work. (See Figure 4.)

4.2 Defining and Funding the New Social Safety Net

All of the studies I have analyzed, as well as my own independent data analysis, suggests that the fraction of the workforce that will not be employed full-time is growing rapidly, and may exceed 50% of the workforce in the US and European Union over the coming decades. Coupled with the prospect of widespread labor displacement due to artificial intelligence (AI) and robotics-enabled automation, it is clear that the time to move beyond measurement and to action is now.

We need to define labor policies that anticipate a fuller transition of today's "employment economy" into tomorrow's "freelance economy." We are still very early in the labor transition induced by the collaborative economy. Although much attention has been paid to what seems to be an increasingly false dichotomy between "employees" and "independent contractors," what is more important now is to not just redefine how we categorize productive work, acknowledging disparities related to laws and conditions that predate the peer-to-peer platform, but to create a safety net for all forms of work.

Most saliently, the 20th century social contract for a worker was defined to be dependent on full-time employment. Employers often provide funding for all or parts of a workers benefits like healthcare, paid vacations, a stable income and workplace insurance. Full-time employment also provides a natural career trajectory and source of community for workers. Our university system often assumes that after college, the burden of education will be borne by the employer. None of these assumptions will hold for the majority of the workforce of 21st century. As we move into a post-employment economy, we may therefore need new funding models and new institutions to provide a new social contract.

One dimension of this new social contract is a system of portable benefits to those who choose other than traditional full-time employment. These protections could take various forms. One set of principles, provided by Auguste et al (2015), prescribes that benefits should be (1) independent—any worker should be able to access a certain basic set of protections as an individual regardless of where they source income opportunities; (2) portable—a person should be able to take benefits and protections with them in and out of various work scenarios; (3) universal—all workers should have access to a basic set of benefits regardless of employment status; (4) supportive of innovation—businesses should be empowered to explore and pilot safety net options regardless of the worker classification they utilize.

The question that follows is how these benefits and protections should be guaranteed and funded for the European Union. This is a question with country-specific answers. In some European countries, many such safeguards are already paid for by the state, and perhaps only minor adjustments will be needed. For instance, countries such as Sweden, Denmark, Finland and Norway have adopted what is often called the Nordic model of the welfare state. It is particularly instructive to look at one particular dimension of the Nordic model, that of Flexicurity, a linguistic blend of “flexible” and “security.” The model provides labor policy that allows greater flexibility in contracting, along with greater flexibility in job mobility, implemented through job training programs. Such training programs will become increasingly important in a post-employment economy. This model also helps with income stability during transitions between jobs. A simple extension might instead lower income volatility between weeks or months, based on a historical average earnings stream, providing income stability without a full-time employer.

The challenge of funding a new safety net will be greater in countries such as the United States and the United Kingdom, where large institutional employers have a bigger hand in providing worker benefits. In such countries, I advocate the creation of new government-individual-institution partnerships (Sundararajan 2014). For example, as corporate pension plans have dwindled in the US over the last few decades, the 401-K and associated programs have evolved to facilitate retirement planning. These represent a partnership between different stakeholders – individuals put aside a portion of their income each month, corporations supplement their contribution, and the government provides a tax break. Beyond retirement planning, some European countries may seek to create analogous structures for other slices of the safety net.

These countries should also remove barriers to the platforms themselves embracing some of the responsibility. Protecting the providers behind the profits can be both the right thing and smart capitalism. For a platform to offer a branded service experience of consistently high quality requires a reliable and steady source of high quality supply from providers. Since platforms lack the typical directive authority or culture-building capabilities that traditional firms use to manage their employees, protecting their providers may be seen as good business practice. It is essential, however, that governments remove any labor classification barriers to the emergence of these market responses.

It is also necessary to rethink labor laws that were predicated on an assumption of full-time employment. For example, minimum wage laws do not adequately protect collaborative

economy providers. Someone who drives for Uber can connect and disconnect from the platform at will, can take time off whenever they want, and can drive for multiple platforms. Guaranteeing a living wage cannot therefore be accomplished by forcing one platform to guarantee its providers a minimum hourly income.

An approach that acknowledges the new engagement model on a different front is an “hour bank,” which would create underlying infrastructure for the provision of benefits to providers who work for multiple platforms. Such a model has been used by the building trades to administer benefits to members who work for a series of contractors, and would have three characteristics: independent access (workers choose benefits independent of employer), innovative benefits (a safety net tailored to the reality of people working through multiple platforms), and flexible payments (allowing both the worker and one or more platforms to share the contributions).

Some voices advocate a universal basic income, in which every working-age individual in a country receives an unconditional monthly check from the government. This seemingly radical idea is closer to reality in the European Union than one might imagine. In June 2016, Switzerland voted on a referendum to create a basic annual income of 30,000 francs. Although the referendum was rejected, the mere existence of the referendum, and the fact that 23% of the voters supported it, speaks to the idea coming of age. In a related development, on January 1, 2017, Finland began a basic income experiment, one under which 2000 randomly selected individuals will receive 560 euros per month for two years.

I believe that we can do better than a basic income, since this safety net reduces the role of government to facilitating a lump-sum money transfer. Governments should not simply collect and transfer, they should decide how this money is spent, funding those programs that maximize the societal returns of tax revenues. Besides, any reasonable basic income would represent a prohibitively high fraction of government spending. Consider, for example, a relatively modest basic income of 1000 euros per month in Germany. If given to all of the working-age population (40-50 million people), this would represent spending of over half a trillion euros, or an amount equal to over 30% of the current German government spending, and close to 15% of Germany's GDP.

However, I do not agree with one common objection to this kind of social safety net: that it lowers people's incentive to work. The little evidence that prior experiments offer suggests otherwise. For example, in 1974, the Canadian town of Dauphin, Manitoba conducted an experiment: 30% of the town's population was given a “mincome,” a minimum income, for five years. As reported in a study by the economist Evelyn Forget, the drops in the fraction of the “treated” group (the 30% receiving the mincome) who sought paid employment were relatively small (1% for men, 5% for unmarried women, 3% for married women). New experiments recently funded by Facebook and by the US venture investor YCombinator may shed more light on this issue in the years to come.

Finally, given scenarios from the past, it seems likely that worker protections will also be contingent on the emergence of new types of worker alliances. We will likely see the rise of new labor collectives, successors to the labor unions that are still focused on full-time employees. There is significant potential for these groups to use “new power” that is more open, participatory, and peer-driven. We may also see groups emerge that more closely resemble traditional advocacy groups whose primary mandate leads to lobbying for new labor laws. The Parliament should actively support the emergence of these collectives.

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NOTES

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