Berkeley
UNIVERSITY OF CALIFORNIA

BERKELEY ROUNDTABLE ON
THE INTERNATIONAL ECONOMY

BRIE Working Paper
February 2021

BACKGROUND PAPER FOR "WORK IN THE DIGITAL AGE: THE CHALLENGE OF PLATFORM FIRMS"

Overview of Platform Economy Research by Berkeley Roundtable on the International Economy

This is a background paper for the workshop, "Work in the digital age: the challenge of platform firms" jointly hosted by the Hertie School and the Berkeley Roundtable on the International Economy. The workshop will take place on March 16, 17, and 24, 2021. If you would like to attend the workshop, please email Dafna Bearson at dafnabearson@berkeley.edu.

Overview of Platform Economy Research by Berkeley Roundtable on the International Economy (BRIE)
Background briefing for the workshop "Work in the digital age: The challenge of platform firms"

We are extremely grateful to all the workshop participants who have been major contributors to our thinking about these issues.

Digital platforms are a critical feature of the contemporary economy, rewiring labor and markets as the factory did in the Industrial Era. In the mid-1990s, platforms emerged as a dominant business model. "The Rise of the Platform Economy" describes the ways in which diverse platforms leverage the Internet, computing power, big data, algorithms, and cloud computing to reorganize capitalism and integrate much of the rest of the economy into their value extraction systems. Since this paper was published in 2016, platforms have continued to diffuse across and deepen their influence upon an ever greater number of economic sectors. By the fourth quarter of 2020, the platform firms Apple, Microsoft, Amazon, Alphabet (Google's parent company), and Facebook represented the five most valuable public corporations in the world as measured by market capitalization. These firms and many more born in Silicon Valley from a venture capital-financed logic that grew fully to fruition are establishing a remarkable dominance, as explored in "The Platform Economy" (2020) and "Unicorns, Cheshire Cats, and the New Dilemmas of Entrepreneurial Finance" (2019). Moreover, during the COVID-19 pandemic, which has brought financial losses or bankruptcy to many businesses, platforms have become increasingly critical intermediaries for economic and social activities, and seen their valuations rise.

Work has been created and reorganized by platforms. "Measuring the Impacts of Labor in the Platform Economy" presents a comprehensive taxonomy of value-creating activity enabled by platform firms and their ecosystems to demonstrate the broad transformation of labor beyond the well-documented "gig" worker and nostrums about sharing. Within platform firms, direct employees are linked to the firm in a traditional employer-employee arrangement, normally with powerful stock option incentives and performing tasks that are essential to the core competencies of the firm (e.g. software development). Platform firms also hire contract workers (with both high- and low-compensation levels) to perform in-house tasks on a contingent basis. For major platform firms' such as Apple, Facebook, Google, and Microsoft, Amazon is the outlier, because it has hired an enormous number of badly paid, algorithmically-managed warehouse and delivery workers. In the case of many of these firms revenue per employee is remarkably high, at times exceeding $1.5 million, far surpassing the value for major firms of prior eras. Any business, such as remote or in-person gig workers, content creators for apps, vendors on online marketplaces, advertisers through online platforms, media content creators dependent upon a platform, and businesses that need to be discovered by Google Search or Maps, reviewed by Yelp or similar platforms, whose business model depends upon a platform is, by definition, platform dependent and thus vulnerable to the platform's decisions. There are no standards for compensation for these firms that constitute an enormous sector of society and the bulk of small- and medium-sized enterprises, and, because of the centrality of platforms for their economic activity, it also impacts their workers. The platform ecosystem also includes the platform users as it is there data that is captured and monetized. The Platform Economy shatters the belief that inter-business competition does not have a powerful impact on workers.

Platform-dependent entrepreneurs (PDEs) warrant deeper consideration with respect to consequences for competition. Unlike traditional entrepreneurship, conditions of engagement in entrepreneurial activity on platforms is based on power asymmetries with the platform firm. Through lock-in effects (achieved through network effects and winner-take-most/all outcomes) and the capability to control data, direct attention and orient behaviors, platforms achieve a position of considerable power over PDEs. Platforms have access to data on PDE innovations and businesses allowing the platform to appropriate the preponderance of the value generated by innovation and creativity by those dependent on the platform. ,. This is because the platforms through their software and algorithms and the legal contracts under which PDEs operate have unchecked discretion regarding their businesses.

The consequences of platforms for labor and competition are increasingly important as platforms continue to spread across new sectors of the economy. In "The Platform Economy Matures," the diffusion of platforms across 70% of traditional economic service industries is documented. Expansion strategies of major platform firms are discussed using the case of Amazon, both an iconic and anomalous platform firm. Through data on consumer and producer preferences, agile technical infrastructure, and capacity for cross-subsidization into new product areas, Amazon's expansion across product categories and industries is only rivaled by Google, Alibaba and Tencent. Other major platforms, such as Airbnb, Deliveroo, Expedia, Grubhub, Spotify, Uber and Yelp, have used their data to use internal capabilities and acquisitions to expand into adjacent markets. However, in the era of platforms, algorithms, and big data, the concept of adjacency must be reconsidered. Was Amazon Web Services and Mechanical Turk "adjacent" to a sales platform - the answer is "yes, but in new surprising ways." Or, use a final illustration, was YouTube "adjacent" to the Google Search market? The answer is, in fact, "yes," but in remarkably different ways than would have been understood in previous industries. These are not conglomerates that are unrelated except through financial and accounting control. This means that understanding the Platform Economy requires more research into the structures of these firms and a greater understanding of how platform dynamics offer the platform owner powerful tools for penetrating, transforming, and integrating new sectors into their business logics. Ultimately, we ask in "Transformation or Structural Change?" (2020), whether the rise of the Platform Economy might represent another Great Transformation as platforms create a new institutional logic.

For additional information on the papers summarized above, please refer to the links and abstracts below.

The Rise of the Platform Economy
By Martin Kenney and John Zysman
Issues in Science and Technology
2016
Abstract: The application of big data, new algorithms, and cloud computing will change the nature of work and the structure of the economy. But the exact nature of that change will be determined by the social, political, and business choices we make.

The Platform Economy: Restructuring the Space of Capitalist Accumulation

By Martin Kenney and John Zysman
Cambridge Journal of Regions, Economy and Society
2020
Abstract: The platform economy and its leading firms, such as Amazon, Facebook and Google, are reorganising the geography of value creation and capture on both a local and global scale. This article argues that economic geographers have underappreciated the implications of the platform on space. First, we demonstrate the concentration of platform giants in terms of location on the US West Coast and in terms of their market share in various services, such as search, maps and online sales. Platforms are simultaneously intermediaries, two-sided markets, data aggregators and leading users of artificial intelligence (AI). Second, we use a labour taxonomy to demonstrate the extensive reach of these platforms in terms of the labour markets that they serve and shape. To illustrate these changes in the geography of value creation, we present case studies of Amazon and Google Maps to show their effects on the location of economic activity. Third, we elaborate on our contention that platforms are at once intermediaries and data hubs. AI is likely to reinforce the power of these platform leaders because they have the largest data sets, the most computational power, enormous teams of the best AI researchers and vast reservoirs of capital that they can use to make acquisitions. We conclude by identifying areas for future research and calling upon economic geographers to consider the implications of the platform economy in reshaping the space of economic activity.

Unicorns, Cheshire Cats, and the New Dilemmas of Entrepreneurial Finance
By Martin Kenney and John Zysman
Venture Capital
2019
Abstract: This essay examines the implications of the evolving environment for the formation and financing of new firms in the United States. After the dot.com crash of 2000, there was a regime change in new firm formation and the number of firms that exited through an initial public stock offering. This change was made possible by the decreased cost, increased speed, and ease of market entry due to availability of open source software, digital platforms, and cloud computing. This facilitated a proliferation of startups seeking to disrupt incumbent firms in a wide variety of business sectors. The contemporaneous growth in the number and size of private funding sources has resulted in a situation within which new firms can afford to run massive losses for long periods in an effort to dislodge incumbents or attempt to triumph over other lavishly funded startups. This has triggered remarkable turmoil in many formerly stable industrial sectors, as the new entrants fueled by capital investments undercut incumbents on price and service. The ultimate result is that new entrants with access to massive amounts of capital can survive losses for a sufficiently long period to displace existing firms and, thereby, transform earlier industrial ecosystems.

Measuring the impacts of labor in the platform economy: new work created, old work reorganized, and value creation reconfigured
By Dafna Bearson, Martin Kenney, and John Zysman
Industrial and Corporate Change
2020
Abstract: Though economists have examined labor displacement due to digitization, few have considered the new work and value created. Unlike employment relations that brought workers

together on the assembly line or in an office in a previous era, platforms enable a greater, more dispersed, and complex division of labor. New and reconfigured types of labor enabled by platforms create identification and measurement challenges. Previous studies of platforms invariably focused on specific organizational forms such as sharing or gigs. They built taxonomies based on the platform's organization – few considered the scope and scale of platform-enabled value creation. To better understand changing labor arrangements in the 21st century, this article introduces a taxonomy to systematically understand work, employment, and value creation in the platform economy. We consider all of the platform-enabled value creation activities including old work displaced or reorganized to new work created. We provide suggestive evidence for the utility of our framework through case studies of Etsy and Amazon Self-Publishing in the United States.

Platform-Dependent Entrepreneurs: Power Asymmetries, Risks, and Strategies in the Platform Economy
By Donato Cutolo and Martin Kenney
Academy of Management Perspectives
2020
Abstract: Online digital platforms organize and mediate an ever-increasing share of economic and societal activities. Moreover, the opportunities that platform-mediated markets offer not only attract enormous numbers of entrepreneurs, but also support the growth of entire ecosystems of producers, sellers, and specialized service providers. The increased economic and business significance of digital platforms has attracted an outpouring of studies exploring their general impact on entrepreneurial outcomes. Yet, this research has largely overlooked the power imbalance that entrepreneurs experience as members of the platform ecosystem and provided little guidance on how this enormous population of firms should compete within these ecosystems. Our analysis suggests that the conditions of engagement for platform entrepreneurs are so different from traditional entrepreneurship that these entrepreneurs are more usefully termed "platform-dependent entrepreneurs" (PDEs). Drawing upon Emerson's power-dependence theory, we show that the power imbalance at the heart of the relationship between the platform and its ecosystem members is intrinsic to the economics and the technological architecture of digital platforms. We undertake a conceptual analysis of the sources of this power asymmetry, and we unravel the novel types of risk and uncertainty that emanate from this imbalance. Further, we explore the strategies that PDEs are developing to mitigate their dependence on these platforms. Finally, our study provides a framework for policy makers that are considering regulating platform-organized markets.

The Platform Economy Matures: Measuring Pervasiveness and Exploring Power
By Martin Kenney, Dafna Bearson, and John Zysman
Socio-Economic Review
Forthcoming
Abstract: Online platforms are pervasive and powerful in today's economy. We explore the increased centrality of platforms in two ways. First, we measure the extent to which platforms are insinuating themselves into the economy. We accomplish this by analyzing the presence of platforms as intermediating organizations across all US service industries at the six-digit North American Industry Classification System (NAICS) code level. Our results show that 70% of service industries, representing over 5.2 million establishments, are potentially affected by one or

more platforms. Second, we undertake a detailed firm-level case study of the mega-platform, Amazon, that demonstrates the ways that the aforementioned macro-level data is expressed by a single platform firm. This case study shows that Amazon's growth trajectory has resulted in it entering and transforming existing industries and sectors. We conclude by reflecting upon the limitations and implications for future research.

Transformation or Structural Change? What Polanyi Can Teach Us about the Platform Economy
By Martin Kenney, John Zysman, and Dafna Bearson
Sociologica
2020
Abstract: The rise of the platform economy marks the latest phase in the ongoing digital revolution. Indeed, the platform is to this digital era what the factory was to the industrial era, both a symbol and an organizing mechanism. Gernot Grabher and Jonas König (2020) used Karl Polanyi's analysis of what he termed the "great transformation" to frame the rise of platform economy. The platform economy is remarkable as it confirms Polanyi's (and Marx's before him) insight that the reach of the market is based upon increased commodification as it has been able to reach into ever more parts of social life. We introduced the term "platform economy" in 2015 because we recognized that the digital platforms were changing the dynamics of capitalist accumulation – an analysis framed by regulationist school of political economy. The intuition was that the socio-technical innovation of digital online platforms was the critical fulcrum for an economic restructuring that would rewire the flows of data and ultimately money and power. The firms we have termed the "mega-platforms", Apple, Amazon, Facebook, Google, and Microsoft, have become the most valuable and powerful firms in the world. Importantly, the reach of these platforms is global and yet local and personal. Moreover, this platform power has only been reinforced during the COVID-19 pandemic.

The Chinese platform business group: an alternative to the Silicon Valley model?
By Kai Jia and Martin Kenney
Journal of Chinese Governance
2021

Abstract: The current understanding of platform expansion is based upon the experience of US West Coast firms. China, with its largely protected but enormous internal market, provides an ideal "experiment" for examining how platform business models might develop different evolutionary trajectories in different environments. Based upon a study of the two largest platform firms, Tencent and Alibaba, and the far smaller but dominant Chinese online travel agency platform, Trip.com, we demonstrate that a different business model has emerged. In contrast to the West Coast model—in which the expansion occurs through internal development and introduction, acquisition, and venture capital investment—Chinese firms have employed two other strategies. The first is listing some of their existing operations separately on the stock market (what we term "selling off") but not giving up control. The second strategy is interfirm cross investments. The use of these two strategies has led to the formation of an organizational form, that we term the "platform business group (PBG)", which extends and transforms the existing Chinese business group model.