



# How Populist Antitrust Legislation Would Harm the U.S. Tech Startup Ecosystem

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## Executive Summary

Technological innovation is a significant driver of economic and productivity growth, and the past several decades have seen thousands of entrepreneurs create technology startups to develop original ideas into products and services. Some of those ideas have been widely and successfully commercialized, contributing greatly to the U.S. economy. However, several pieces of legislation under consideration by Congress (notably [S. 2992](#), the American Innovation and Choice Online Act, or AICOA), threaten to disrupt major technological platforms that these startups heavily rely on, such as app stores and online marketplaces. The AICOA's provisions concerning self-preferencing, restricting access of third parties, and limiting the use of non-public data would harm startups in several ways, including:

- Increased costs to develop products and services
- Increased costs to reach and/or service their customers
- Reduced customer demand and revenue
- Amplified competitive disadvantage vis-à-vis larger incumbents

As a consequence of the AICOA, a startup that, for example, lists its app on a covered platforms' app store will face increased complexities, costs, and time-to-market. The startup would also be forced to spend more money and hire more developers and employees to manage the reduced efficiency and increased security burdens. These effects are well-documented killers of innovation, particularly for startups that are battling to disrupt entrenched competitors.

These legislative efforts are driven by the assumptions that (1) big platforms inherently produce harmful market outcomes (e.g., harming startups and discouraging innovation), and (2) government-determined platform rules will improve outcomes for most stakeholders. In this paper, we present evidence that counters both of these assumptions. To that end, we demonstrate the importance of links between platform-created digital tools and services and valuable startups, and how the legislation can hinder the availability of those digital tools and services. In addition, we discuss empirical evidence that these negative consequences are likely to harm America's technological and innovation ecosystem and the broader economy.

We conclude that existing industry-neutral economically-objective antitrust frameworks are more appropriate for addressing harms alleged by AICOA proponents. This is particularly the case given that economic analyses, in contrast to legislation, can consider different market outcomes to ensure that a proposed remedy is not worse than the harm it aims to address.

## Introduction

Since the election of President Biden in November 2020, a movement often referenced as “Populist Antitrust” or “Neo-Brandeisian Antitrust” has gained some traction within Congress and the Administration. This movement assumes that larger corporations’ profit-seeking activities are inherently associated with negative outcomes, and offers remedies that tend to be crude, lack economic analysis, introduce new inefficiencies, and ignore our economy’s complex systems and secondary effects.

While the courts do not view size itself as anticompetitive, Populist Antitrust tends to do so, often linking size and success to alleged anticompetitive behavior and consumer harm. In digital markets, lower or zero prices and increased consumer choice are often used by Populist Antitrust as parts of a monopolization argument based on the premise that the pursuit of growth over profit inherently underpins potential anticompetitive behavior. The practice of ignoring how digital competition and access have substantially increased, and instead leaning on the idea that lower consumer prices and expanded choice are inextricably associated with likely anticompetitive behavior, has meant that so-called “Big Tech” companies have been the primary target of Populist Antitrust legislation.

### Populist Antitrust Legislation, Including the American Innovation and Choice Online Act

There are several pieces of interrelated Populist Antitrust legislation under consideration in the U.S. House of Representatives and Senate, including the Platform Competition and Opportunity Act of 2021 (H.R. 3826), the Ending Platform Monopolies Act (H.R. 3825), and the Competition and Transparency in Digital Advertising Act (S. 4258). In this paper, we focus on the most prominent bill currently under discussion, the American Innovation and Choice Online Act (AICOA) (S. 2992) and its House equivalent, H.R. 3816 - the American Choice and Innovation Online Act (ACIOA) (henceforth we will refer to both as the “AICOA”).

The stated purpose of AICOA is “to provide that certain discriminatory conduct by covered platforms shall be unlawful.” The bill, as introduced, will have wide-ranging implications, including how app stores operate, how search results are integrated with maps or shopping suggestions, and how online stores position “store brands” in relation to other products. The AICOA has received a great deal of media attention, partly because commentators have noted that many of its provisions are vaguely written (which makes them open to broad interpretation) and are likely to have harmful unintended consequences.

## Exploring the Practical Effects of AICOA on Startups

This report describes how the AICOA's provisions would, through a "death by a thousand cuts," harm startups and ultimately dampen U.S. innovation. How does this actually happen in practice?

Imagine a contemporary integrated startup named NewCo that invented the best augmented reality (AR) app for helping people shop for furniture. Their goal is to disrupt legacy furniture manufacturers and retailers by delivering a vastly superior direct-to-customer experience. NewCo raised \$8 million in venture capital to fund their research and development, they employ 35 full-time employees, and are approaching profitability.

To operate and maintain a competitive advantage - a digital advantage - over larger legacy competitors, NewCo uses an intricate combination of technology, developer tools, e-commerce, data analysis, and social media that include:

- **Major app stores** to distribute their AR-enabled home decorating app
- **Software Developer Kits (SDKs) and Application Programming Interfaces (APIs)** that NewCo's developers use to leverage underlying technologies within their iPhone and Android apps and their online e-commerce store (there are millions of public APIs that developers can use)
- **Targeted digital ads** that drive new and return customers to buy furniture from their website store
- **Social media platforms** like Instagram that build brand awareness and create purchase opportunities while customers search for trends

This combination of diverse tools that NewCo uses is made easier and cheaper by the developer tools and seamless integration of large tech platforms owned by GAFAM, which results in the best product and customer experience possible. If the AICOA passes, however, these tools and integrations and their powerful combinations that help startups like NewCo compete and win will be disrupted.

As a consequence, rather than seamless integration, NewCo would be more likely to have to patch together a hodgepodge of tools and services from more vendors, adding complexity to something that's complex enough already. And small startups like NewCo will be affected most of all, because it will be harder for them to absorb extra disruption, costs, and time (which will be easier to absorb by their larger competitors).

How would the AICOA's harms to startups like NewCo manifest themselves in practical terms? Many ways, including:

- NewCo and other startups would need to **hire additional software developers** to integrate and maintain the multitude of third-party APIs and SDKs covered platforms would be forced to support (a typical app has at least a dozen APIs - that number would likely increase).
- NewCo and other startups would also need to **hire additional employees** to deal with the increased risk and compliance burden for data management brought on by additional third-party apps and services.
- NewCo and other startups would **pay more to manage digital marketing and advertising campaigns** to account for less efficiency and integration on the "back end" of campaigns.

Each of these is individually harmful, but the cumulative effect on digital product reliability (more broken apps, websites that aren't fully functional, degraded customer services) would significantly impact consumer confidence in today's "one click to buy" world. For NewCo and thousands of startups like it, costs, complexity, and time-to-market will all be negatively affected, shifting the advantage back to incumbents. And the market for raising venture capital is already tightened with the current economic climate. Collectively, U.S. startup innovation will be stifled and innovative and promising but nascent enterprises such as NewCo will be less competitive in an already competitive world.

As a related example, recent empirical research finds that another recent law targeting technology companies – the European Union’s General Data Protection Regulation (GDPR) – induced the demise of about a third of available Android apps and substantially diminished the entry of new apps, and, more importantly, reduced consumer welfare.[1] These findings are supported by peer research demonstrating that the number of European technology startups diminished significantly as a result of GDPR.[2]

Similar to GDPR, AICOA provisions may also halt or limit a variety of activities that platform owners use to create and manage value, without economic evidence that these activities are anticompetitive, and could lead to lower consumer and business user welfare. Economic analysis indeed points out that AICOA provisions can harm competition and consumer welfare.[3]

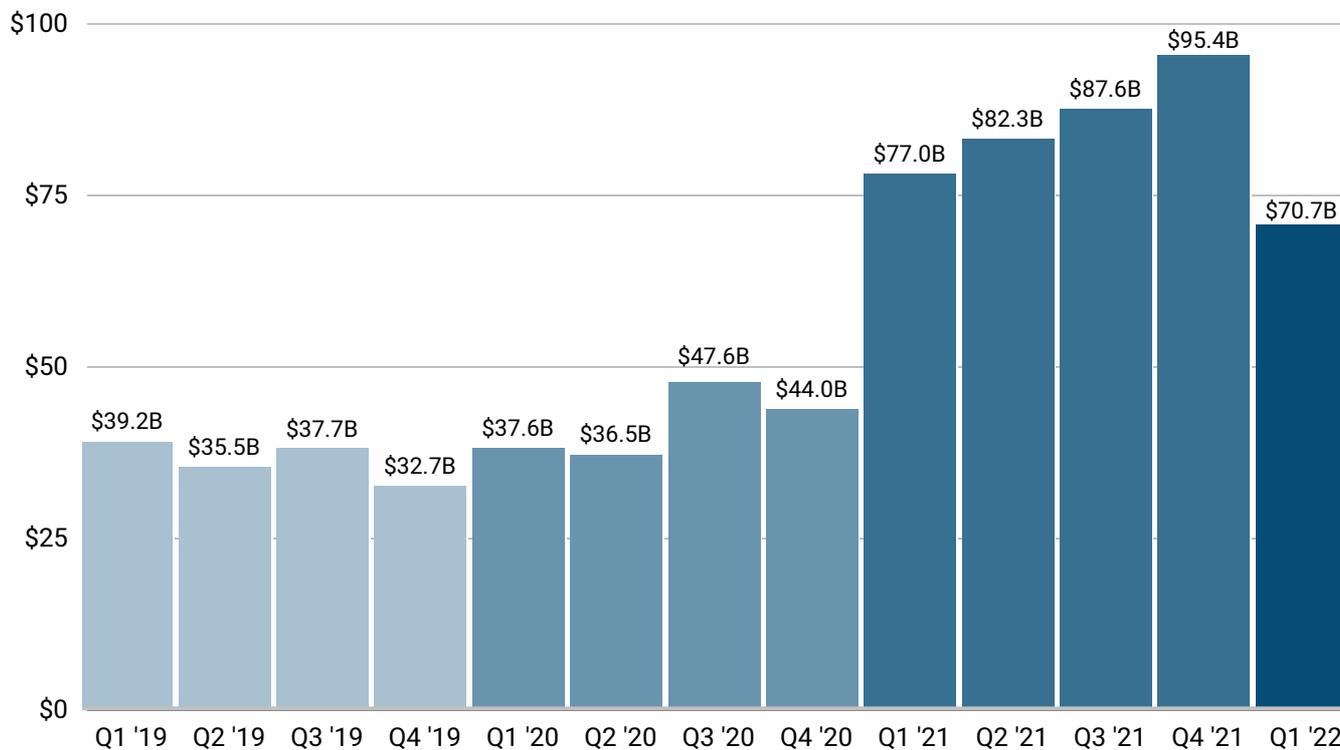
Because the AICOA lacks an economic foundation, it is likely, in part, to result in higher costs and complexities for U.S. startups, as well as reduced efficiencies of digital services and tools that startups both use and create. For example, AICOA’s somewhat arbitrary regulation of highly accessible and optional platform services, including app stores, can make startup operations more cumbersome. In turn, this could drive businesses away from incorporating digital tools created by startups, including advertising and e-commerce startups, which can hurt the reach and competitiveness of startups and other businesses and ultimately hurt consumers.

## Competition: The Innovation Economy Perspective

A startup is a small or medium-sized business (SMB) whose primary aim is to invent and prototype a unique product or service and successfully bring it to market. In some ways, startups are special, in that at the time when the business is created, the product or service may not be fully fleshed out, the customer or audience may not be well understood, and the business model is frequently under development. But the potential growth and impact of startup innovation can be considerable. Startups often raise funds from outside investors such as venture capitalists in order to fund their risky innovation process. Venture funding, as opposed to initial revenue generated, is often critical to a startup’s initial development stages and ultimate success. While less than 0.5% of all U.S. firms receive venture capital, they represent nearly half of the firms that become publicly traded.[4]

The U.S. has the highest number of startups in the world. “People in tech agree on very little, but everyone would agree we’re in the hottest market for tech startup creation in history – any relevant data would tell you that tech startup creation has actually risen by three to four times in the last decade,” wrote analyst Benedict Evans in June 2021. And while “Big Tech” companies have expanded into a number of new business verticals (e.g., digital payments or music), that is not the same as demonstrating that their size has stifled competition from smaller companies.

**Figure 1. U.S. Venture Funding by Quarter (in Billions of Dollars)**

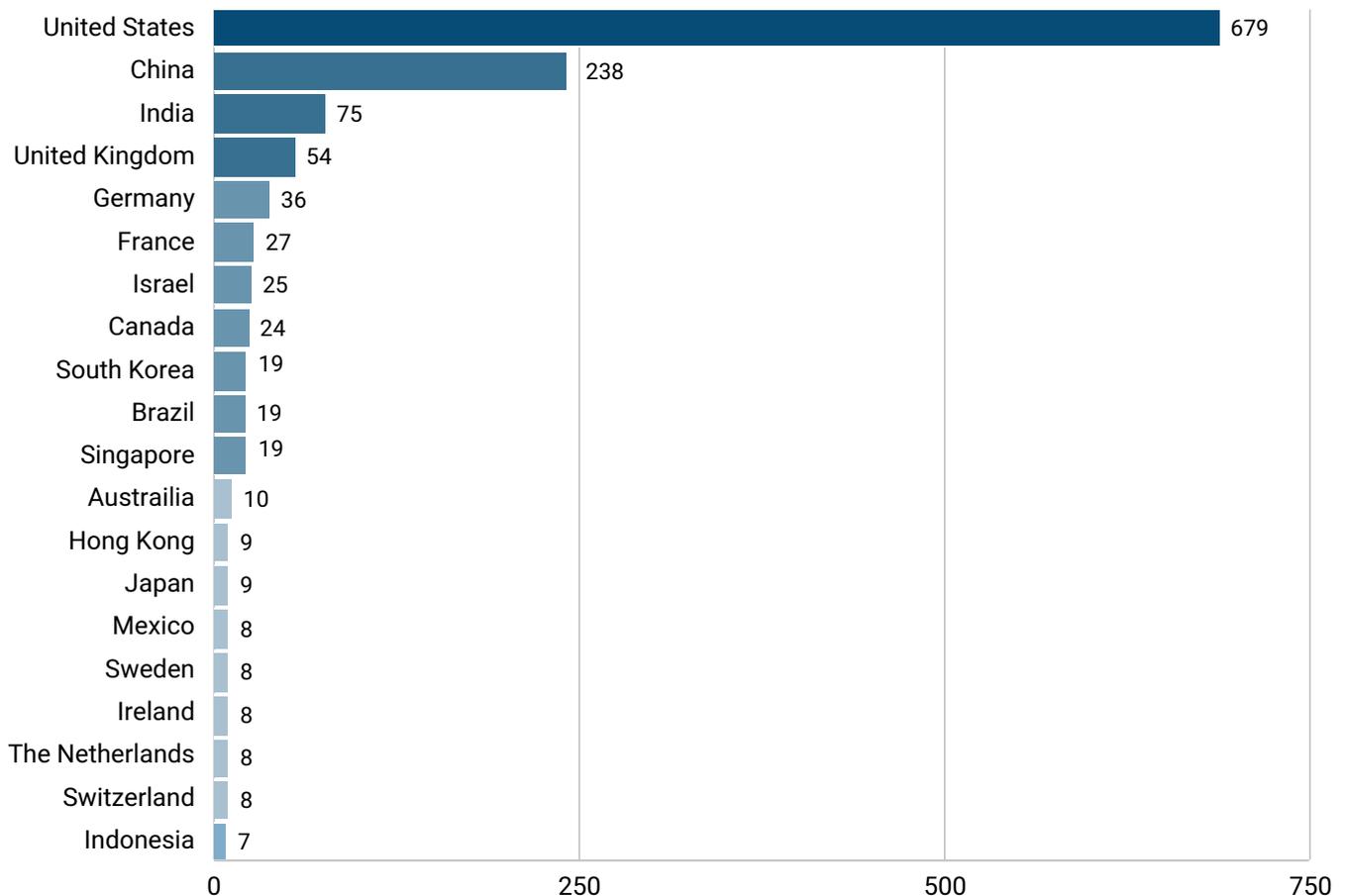


In fact, even during the pandemic period when “Big Tech” grew by many measures, startup growth and funding also increased substantially. Competition and choice are alive and well within the innovation economy by numerous measures, including:

- Global venture capital (VC) funding of tech startups hit \$160 billion in the first quarter of 2022, marking a 7 percent growth compared to the first quarter of 2021 and exceeding the tally of every quarter in 2020, according to [CrunchBase](#). [CB Insights](#) reports the U.S. alone accounted for nearly half of total global venture funding in the first quarter of 2022, totaling at \$70.7 billion according to [PitchBook](#) (U.S.-based companies also drove a significant portion of the Q1 '22 funding activity, accounting for 37% of all deals that quarter).
- 129 unicorn startups (private companies valued at or over \$1 billion) were minted during the first quarter of 2022 according to [CrunchBase](#), adding to the grand total of 1,361 unicorn companies. Globally, the unicorns are collectively valued at \$4.6 trillion, with U.S.-based companies accounting for nearly half (49.8%) of the total unicorn count as of June 2022. (Post-COVID, in a year in which “Big Tech” companies have significantly increased their footprint, the collective value of unicorns topped \$4 trillion in value for the first time in 2022 – double the value of the world’s unicorns at the end of 2020, just two years previous.)

- Successful tech companies, including ZipRecruiter, Monday.com, SquareSpace, Toast, Coursera, and Duolingo all had recent initial public offerings (IPOs). Discord, Instacart, Reddit, and Stripe are also considering IPOs. Many of these companies either already compete or are expanding into areas that compete against so-called “Big Tech,” and they are competing effectively as evidenced by fundraising, valuations, and IPOs.

**Figure 2. Number of “Unicorns” (Startups With Valuation of \$1B+) by Country**



## Startups Rely On and Create Digital Technologies that Benefit the U.S. Economy and American Innovation and Competitiveness

It is crucial for policymakers to ensure that promising, innovative startups have unencumbered access to digital tools. Entrepreneurs often develop new business-to-business (B2B) tools that enhance the products and services of a broader class of businesses. And in the case of tech startups, which are a core driver of the innovation economy, digital tools enable them to create the digital technologies that other businesses use. In other words, tech startups often use digital technologies to develop newer digital technologies.

For example, many startups create business and productivity tools on which other businesses rely for their own development on platforms such as iOS or Android, or to manage their e-commerce businesses. Developers (including startups, larger tech companies, “Big Tech” companies, etc.) of digital technologies, as well as their users (businesses and consumers) come from every state in the nation. The use and development of digital technologies is not isolated to Silicon Valley.

## Analysis: Federal Legislation Targeting “Big Tech” Like AICOA Is Likely To Harm Startups

The AICOA seeks to regulate the ability of large platform owners to engage in actions that could broadly be seen as discriminating against third-party complementors (firms) that engage with the platforms. We note that it is difficult to view these Neo-Brandeisian legislative proposals as conventional antitrust laws of the past several decades, because they are not limited to market power and monopolization. Rather, they purport to promote fairness among potential competitors and vertically-related firms, instead of consumer welfare and market competition.

A recent white paper analyzing the AICOA using a “platform governance” lens identified three key misconceptions in the current federal debate over platform regulation, and multiple unintended negative effects on small businesses, including tech startups.[5] Specifically, the legislation will restrict a platform owner’s ability to govern its own platform, increasing costs and potentially reducing the value of the platform to its users. In turn, this can reduce profits for third-party complementors on the platform, constrain the performance of their products, and ultimately degrade the consumer experience, all of which could further unwind the economic viability of complementors, startups and innovators. The authors suggest (1) not restricting platforms’ business based solely on platform size, (2) viewing platform owners’ actions through a platform governance perspective, and (3) avoiding a “one-size-fits-all” regulatory approach.

Restricting platforms’ business solely on the basis of platform size – i.e., not accounting for the welfare of consumers and business complementors – is likely to lead to unintended consequences and “spillover” effects. Tech platforms became big because they created significant value for consumer and business users. Their size (i.e., the number of consumers and users interacting on the platform) is, in part, what makes them valuable for all participants.

Viewing platform owners’ actions through a platform governance lens reveals that tactics which may seem anticompetitive to some are instead vital to platforms’ ability to maximize the value and welfare for stakeholders in their overall ecosystems.[6] Platform owners like Google (Alphabet), Apple, Facebook (Meta), and Amazon make significant investments each year in

updating and expanding the range of tools available to software and hardware developers, including technical resources and educational and support programs available to third-party developers. These tools and resources benefit incumbent complementors by reducing development costs and increasing quality, and also lower entry barriers and increase success probability for startups.[7]

Different types of platforms have different needs and underlying dynamics, and therefore require different governance mechanisms. Regulating all platforms with a one-size-fits all strategy will most likely lead to unintended consequences that will harm startups using these platforms. We further note that platform governance is a complex endeavor, which academic research demonstrates is difficult for the platform operators themselves.

## How the AICOA Will Harm the Innovation Ecosystem

We examine the following provisions of AICOA (here, specifically S. 2992) as they relate to startups:

- 2.a1 – 2.a3: Self-preferencing of platform’s own products, limiting competition, and discriminating in enforcement or terms of service [8]
- 2.b1 – 2.b2: Restricting the access of third parties [9]
- 2.b4: Limiting the use of non-public data [10]

These provisions are associated with a number of downstream effects that can diminish platform owners’ ability to maintain a healthy ecosystem, and therefore are likely to harm tech startups’ ability to enter the ecosystem (this peripherally includes millions of independent or part-time software developers, many of whom are contract workers to such startups). Specifically, AICOA can harm startups in several ways, including the following (see also Table 1):

- Increasing costs for startups to develop products and services
- Increasing costs for startups to reach and/or service their customers
- Degrading consumer experience, which will reduce demand and willingness to pay for apps, and thus potential revenue
- Amplifying startups’ competitive disadvantage vis-à-vis larger incumbent complementors

**Table 1. Unintended Effects of the American Innovation and Choice Online Act (AICOA) on Tech Startups**

Legislative Provisions	Impacts on the Platform	Impacts on Startups
<p>Self-preferencing of platform's own products, limiting competition, and discriminating in enforcement or terms of service (2.a1 – 2.a3)</p>	<ul style="list-style-type: none"> <li>Limits the ability to preinstall apps and thus ensure that users have what is needed for other apps to function properly.</li> <li>Limits the ability to include a functionality in the core platform when a third party offers a similar functionality. Therefore, the platform owner is unable to ensure that interdependent technologies are updated and maintained simultaneously, or that the technology has sufficient performance, all of which could decrease the platform's value to all users.</li> <li>Limits the ability to offer subsidized products and services to third-party complementors.</li> </ul>	<ul style="list-style-type: none"> <li>Raises the entry barrier for new startups by increasing cost and uncertainty in app development. Weakens network effects by increasing the coordination costs for users which decreases their value, which may deter startups from entering the ecosystem.</li> <li>Potentially deteriorates the functionality of developers' technologies. May create a steeper learning curve for developers who need to figure out whose technology can reliably be built upon to create value. Advantages incumbent complementors over startups/new entrants because the former likely has information and experience.</li> <li>Raises the entry barrier by increasing costs and potentially reducing the service quality startups can offer customers. Advantages large incumbent complementors who rely less on the subsidized products and services.</li> </ul>
<p>Restrict access of third parties (2.b1 – 2.b2)</p>	<ul style="list-style-type: none"> <li>Limits the platforms' ability to include value enhancing functions on restricted areas of the platform, such as the home screen of your phone.</li> </ul>	<ul style="list-style-type: none"> <li>Degrades the consumer experience which reduces their demand for and willingness to pay for apps. Reduced demand from consumers reduces entry by new startups.</li> </ul>
<p>Leverage non-public data (2.b4)</p>	<ul style="list-style-type: none"> <li>Limits the information that could be used to identify technical bottlenecks or innovation gaps.</li> </ul>	<ul style="list-style-type: none"> <li>Constrained performance of certain apps. Lower consumer value which will result in less engagement with the entire platform ecosystem. May deter entry from startups and increase their entry costs as avoiding bottlenecks or developing suitable workarounds on their own is costly.</li> </ul>

These are explained in more detail below within the context of the legislative language to do with this pending progressive antitrust legislation.

**Limiting Preinstallation:** Provisions 2.a1 to 2.a3 will limit the ability of the platform owner to preinstall apps on devices. Many apps rely on the functionality of other apps to create value. For example, in the mobile operating system context, many applications need to provide the user with an easy-to-use mapping service and thus such commonly used apps on devices are frequently preinstalled (e.g., Google Maps typically comes preinstalled on devices running Android). To foster innovation and reduce uncertainty in app development, the platform owner tends to include applications that third-party complementors typically use to create value for consumers.

Limiting preinstallation can place the burden of coordinating interdependent technologies on the users, which may increase uncertainty and costs for app developers. While generally harmful to many developers, startups with less knowledge about users' likely installation preferences may be particularly burdened.

**Limiting Competition with Third Parties:** Provisions 2.a1 to 2.a3 would also limit the ability to include a functionality in the core platform when a third party offers a similar functionality. Hence, the platform owner is unable to ensure that interdependent technologies are updated and maintained simultaneously, or that the technology has sufficient performance, all of which could decrease the platform's value to all users.

In innovation ecosystems like Android and iOS, complementors often rely on a variety of developer tools to create value for users. The products (apps) that the complementors provide tend to become highly interdependent on the developer tools, which requires that these tools are actively managed and updated to function properly. When a particular tool becomes essential in creating value for a wide variety of developers, the platform owner may want to integrate it into the platform in order to maintain quality and manage its evolution in a way that benefits the vast majority of stakeholders.[11] For startup firms joining an innovation ecosystem, the inability of the platform owner to manage interdependent technologies could significantly increase development costs and place the new entrant at a significant disadvantage relative to established incumbents that have greater knowledge and experience.

Provisions 2.a1 to 2.a3 would also limit the platform owner's ability to offer products or services that could compete with complementors. Platform owners often offer a variety of supporting tools and services to help complementors create value. Many of these tools are specifically targeted towards startups and smaller ventures and act as a subsidy that reduces their costs. For instance, Amazon offers logistics (Fulfilled by Amazon) and cloud computing services (Amazon Web Services) to sellers on its platform. The provision could limit the ability of a platform owner

to offer services for free (AWS Free Tier) or to advertise that the complementors' products use its services (e.g., allow consumers to search sellers who use Fulfilled by Amazon). By limiting such offerings or undercutting their value, the bill will raise the costs on firms, including startups, that are most unable to bear it. Doing so will also place startups at a competitive disadvantage vis-à-vis large incumbents that do not rely on subsidized platform tools to serve customers.

**Limiting Information Usage:** Provision 2.b4 could also inhibit resolving technical bottlenecks. Platform owners seek to create a technological environment that enables new entrants to easily bring value-creating innovations to market. Limiting the ability of the platform owner to identify and resolve technological issues will harm its ability to create value for developers and will unduly burden developers with less experience in the ecosystem.

## Impact of AICOA and Other Populist Antitrust Legislation on the Innovation Ecosystem

The ecosystems surrounding “Big Tech” platforms consist of numerous third-party complementors (many of which are startups) whose activities affect the platform and each other. For instance, Apple’s iOS ecosystem includes the iOS operating system, the Apple App Store, hardware such as the iPhone, hundreds of thousands of iOS developers, and many other firms that develop complementary hardware components. The products and services offered in the ecosystem by the platform owner and other third parties will often exhibit interdependencies with other products and services in the ecosystem, which means that what affects one product may also affect other interdependent products.

Beyond the core business or innovation ecosystem, many other actors including traditional venture capitalists, corporate venture capitalists, investment banks, and private equity funds play an important role in financing innovation and helping firms within the ecosystem develop or acquire the resources necessary to create value for their customers. A robust market for IPOs and M&As plays a vital role in allowing investors and founders to realize returns from their entrepreneurial efforts and, therefore, encourages future entrepreneurs and capital providers to invest time, money, and other resources into the ecosystem. Below, we discuss how the legislation could undermine the effectiveness of capital markets by reducing the incentives of capital providers to invest in the innovation ecosystem.

### Venture Capital Would Diminish Under the Legislation

As previously emphasized, venture capital is critical for startups charting their way through a difficult innovation process to successfully bring products and services to market. In an NBER working paper, researchers report that venture capital is a significant factor in aggregate U.S.

economic growth [12]; without VC financing, they estimate that the annual growth rate of the U.S. economy would be as much as 28% lower.

Corporate venture capital (CVC) refers to minority equity investments made in privately-held startups by established firms through their investment arms.[13] Most CVC programs make “strategic” investments intended to enhance product or process innovation, foster third-party complementary products, drive demand for both their products and their customers’, or create a stronger ecosystem.[14] In 2020, CVC accounted for about 25% of venture investments in the U.S. and 20% globally.[15]

Research has shown that CVC investments have a strong positive effect on startups, including several benefits not provided by traditional venture capital. First, startups often lack the resources or knowledge to conduct successful and efficient research and development. Relative to other sources of financing, CVC investors can provide these resources and help nurture startups’ innovation processes and output.[16]

Second, promising startups often fail because they fail to develop or acquire critical assets necessary to commercialize their innovations.[17] CVC investors often enable startups to succeed by helping them access or develop “complementary assets” like manufacturing equipment, customer and supplier relationships, distribution channels, and intellectual property licenses.[18]

Third, CVC can increase the likelihood of a startup’s acquisition and the potential purchase price. Research has documented that investing CVCs gain useful information that reduces their uncertainty about portfolio companies’ quality and improves their ability to confirm the value of potential acquirees, potentially increasing the price of acquisition.[19]

Fourth, CVCs may make investments that typical investors will not. In the first instance, CVC tends to be more patient than traditional venture capital, as CVC funds typically are not pressured to liquidate investments within a fixed number of years, and management compensation is not disproportionately premised on liquidity events.[20] Second, CVC investors’ benefit is not only financial, as corporate investors benefit, e.g., when startups develop products that complement corporate products, engage in vendor relationships with the corporate investor, or drive downstream demand for corporate investors’ products and services.

AICOA and two other bills – the Ending Platform Monopolies Act (H.R. 3825) and the Platform Competition and Opportunity Act of 2021 (H.R. 3826) – may diminish “Big Tech” companies’ incentive to invest in the startup ecosystems surrounding their platforms, leading to lower valuations when companies are very young. Moreover, H.R. 3825 and 3826 could prohibit platforms from acquiring their current or future portfolio companies, which would diminish the

incentives to make such investments and likely diminish exit startup valuations broadly.

AICOA and two other bills – the Ending Platform Monopolies Act (H.R. 3825) and the Platform Competition and Opportunity Act of 2021 (H.R. 3826) – may diminish “Big Tech” companies’ incentive to invest in the startup ecosystems surrounding their platforms, leading to lower valuations when companies are very young. Moreover, H.R. 3825 and 3826 could prohibit platforms from acquiring their current or future portfolio companies, which would diminish the incentives to make such investments and likely diminish exit startup valuations broadly.

Additionally, by reducing the breadth of platforms’ non-core operations, H.R. 3825 will limit platforms’ ability to provide startups with development and commercialization resources. It is hard to articulate the invaluable knowledge and resources that CVC firms and their managers provide startups, and how much startups will be hurt if these bills are enacted into laws.

## **Harmful Impact of Populist Antitrust Legislation Like AICOA on Broader Digital Ecosystems**

Most digital ecosystems consist of thousands of firms offering complementary products and services that create value for users.[21] Interdependence between products and services typically means that user value associated with one firm’s offering will be impacted by the actions of many other firms within that ecosystem.[22]

Legislation that targets “Big Tech” will not only affect the platforms and alter their incentives; it will also affect many other ecosystem participants. Additionally, because of indirect network effects – i.e., the benefit that one side of a platform gains from the participation of the other side and vice versa – any impact to one side of the platform (e.g., software developers) will likely affect the other side (consumers of apps) and may be amplified by the reciprocal nature of the network effect (e.g., developers reduce investment, so users utilize fewer apps, which further discourages developer investment, and so on). Therefore, legislation that could negatively alter or restrain the actions or incentives of a major ecosystem participant will likely be transmitted throughout the ecosystem.

As one example, platform owners often offer small businesses free or affordable high quality digital tools that enable SMBs to create value. The SMBs’ success, in turn, enables the platforms’ success. Many SMBs that sell on transaction platforms such as Amazon.com’s Marketplace and Facebook Marketplace rely on various web service tools, such as cloud computing, storage, database, content delivery, analytics, and security. By forcing platform owners to separate lines of business, legislation could disrupt the ability of SMBs to access affordable high-quality integrated computing solutions. This would increase SMB costs and likely would also diminish the quality of service they provide to their customers. It would also harm SMBs competitively,

relative to larger firms that build or operate their own e-commerce solutions and so not rely on platform owners for access to vital digital tools.

The AICOA could negatively affect technology ecosystems in two ways: (1) by reducing incentives for platform owners, third party firms, and financiers to invest in the ecosystem, and (2) by reducing the ecosystem's value for business users/complementors and consumers. Note that these are interrelated, because as the ecosystem declines, incumbent firms and startups will be less likely to invest in the ecosystem, which will depress its future value as well.

Investment incentives would also be reduced via restrictions on M&A activity by covered platforms within the Platform Competition and Opportunity Act of 2021 (H.R. 3826) that would reduce competition over acquisitions and depress exit values for startups. As exit values decline, the incentive for entrepreneurs to found new ventures targeting the ecosystem will decline, leading to reduced entry and innovation within the ecosystem. Venture capital, CVC, and other early-stage financing will decline as the probability and valuations of successful IPOs or exits through M&A decline. The hollowing out of financing will further reduce innovation, as well as the overall value of the ecosystem. (See also this recent [independent commentary](#) about AICOA decreasing the incentives for larger companies to do startup acquisitions.)

The value of the overall ecosystem would also be diminished by the Ending Platform Monopolies Act (H.R. 3825), which claims "to promote competition and economic opportunity in digital markets," but would force platforms to split lines of business, reducing their ability to provide integrated services at low costs to third-parties on the platform. This would have the opposite effect of the bill's claimed intent. By destroying the platform owners' economies of scope, costs would increase and the incentive to invest in R&D and ecosystem-benefiting capital expenditures would decline. In particular, out of the seven largest spenders on R&D globally in 2020, five are platform firms targeted by legislation (Google, Amazon, Facebook, Amazon, Apple, and Microsoft, or "GAFAM"), with a combined \$127 billion in annual R&D expenditures (the other two are international firms in the software and hardware ecosystems, Samsung and Huawei).[23]

## Discussion and Conclusions

Debates about tech industry competition often point to acquisitions of startups by top technology firms, and rely on the premise that "Big Tech" acquisitions squash competition. Recent research counters this premise, finding that (1) "Big Tech" and other top technology acquirers compete with each other across several lines of business, (2) acquisitions by "Big Tech" are not particularly unusual and do not have characteristics of so-called "killer acquisitions" or "kill zones," and (3) are emblematic of broader technological trends. These findings counter the vague assertion that startup acquisitions by "Big Tech" companies predominantly reduce competition.

In another recently published paper, using a dataset of more than 32,000 VC deals reported worldwide from 2010 to 2020, economists found that startup acquisitions by GAFAM positively impact venture investment in startups in the same industry categories as those firms' acquisitions.[24] Researchers estimate a 20.2% increase in the number of VC deals in an industry segment in the year following a GAFAM startup acquisition, and a 30.7% increase in the total amount of VC funding in an industry segment in the year following a GAFAM startup acquisition. Overall, the evidence demonstrates that startup acquisitions by GAFAM do not dampen market activity in the industry segment of the acquisition. On the contrary, such acquisitions can stimulate investment, new entrants, and innovation. (Research also shows startup acquisitions can increase consumer welfare and help align the acquirer's interest with the social interest.[25])

Unfortunately, commentators frequently use unfounded assumptions to justify legislation that would potentially undermine a growth engine for the U.S. economy. Rather than employing existing laws to address clear economic harms, such legislation would place the government in the position of a central-planning digital platform rulemaker, forcing changes to platforms, the innovation ecosystems built on them, and large swaths of the economy.

Prominent economists Carl Shapiro (a former member of President Obama's Council of Economic Advisors) and Professor Richard Gilbert (a former Deputy Assistant Attorney General for Economics under President Clinton) note that the provisions in the AICOA would effectively ban product integration. This would essentially inhibit tech platforms that are covered by the legislation from promoting, integrating, or freely improving their own products, and thereby hinder their ability to grow the economic pie to the benefit of all platform users.

In this paper, we described numerous links between "Big Tech" digital technologies, startup development, and the broader digital economy, as well as the innovation ecosystem that includes venture capitalists, corporations that invest in startups, and the public markets. The legislative measures, particularly AICOA, are likely to hinder availability and access to digital technologies, with potential consequences that are detrimental to the overall innovation ecosystem and the broader economy. Years after the poorly-constructed General Data Protection Regulation (GDPR) took effect in the European Union, research now shows that it damaged the European startup ecosystem.[26] Policymakers should be mindful not to impose similar consequences on the U.S. economy.

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- [7] For instance, small developers and recent startups accounted for 90% of all developers active in the Apple App Store between 2015 and 2020 according to a report by the Analysis Group.
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- [8] Specifically the descriptions are as follows: 2.a1 "Unfairly preference the covered platform operator's own products, services, or lines of business over those of another business user on the covered platform in a manner that would materially harm competition on the covered platform," 2.a2 "unfairly limit the ability of another business user's products, services, or lines of business to compete on the covered platform relative to the covered platform operator's own products, services, or lines of business in a manner that would materially harm competition on the covered platform," and 2.a3 "discriminate in the application or enforcement of the covered platform's terms of service among similarly situated business users in a manner that may materially harm competition on the covered platform."
- [9] 2.b1 "materially restrict or impede the capacity of a business user to access or interoperate with the same platform, operating system, hardware or software features that are available to the covered platform operator's own products, services, or lines of business that compete or would compete with products or services offered by business users on the covered platform," and 2.b2 "condition access to the covered platform or preferred status or placement on the covered platform on the purchase or use of other products or services offered by the covered platform operator that are not part of or intrinsic to the covered platform itself."
- [10] 2.b4 "use non-public data that are obtained from or generated on the covered platform by the activities of a business user or by the interaction of a covered platform user with the products or services of a business user to offer, or support the offering of, the covered platform operator's own products or services that compete or would compete with products or services offered by business users on the covered platform."

[11] For example, game developers on iOS require a variety of tools to create multiplayer games. Initially, developers relied on third-party development kits, but these offered a non-unified and often poor experience for developers and users. To rectify the issue, Apple released Game Center in its iOS version 4.1 operating system and additional tools such as GameKit. These are widely popular among developers and allow consistent and high-quality experience for consumers.

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