Carl Shapiro Disclosure Statement

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Background and Context

I am an economist specializing in industrial organization, antitrust, intellectual property, and innovation. I have been on the faculty at the University of California at Berkeley since 1990.

My research during the 1980s addressed issues related to network effects, innovation, patent licensing, and horizontal mergers, among other topics. During the early 1990s I began consulting with the U.S. Department of Justice ("DOJ"), the Federal Trade Commission ("FTC"), and some private companies on antitrust issues.

During 1995-1996 I served as Deputy Assistant Attorney General for Economics in the Antitrust Division at the DOJ. My experience there complemented my research and teaching activities and enhanced my understanding of how antitrust policy and antitrust enforcement work in practice. I held that same job during 2009-2011, when I led the working group at the DOJ charged with updating the Horizontal Merger Guidelines. I served as a Senate-confirmed Member of the Council of Economic Advisers under President Obama during 2011-2012 before returning to Berkeley. From 1999-2008 and since 2012 I have been a Senior Consultant at Charles River Associates ("CRA"). CRA staff normally provide support for my consulting projects.

For information about my publications and professional experience, see my website, http://faculty.haas.berkeley.edu/shapiro/. I do not accept payment for my writings. Nor do I grant any entity the right to review my writings in advance of publication.

Horizontal Mergers

Based in part on my experience at DOJ during 1995-1996, I came to believe that overall horizontal merger enforcement in the United States was not sufficiently strict. Over the years, I have studied many mergers on behalf of the DOJ, the FTC, state attorneys general, and private parties. For mergers that I studied in depth, I typically found that my approach to horizontal merger enforcement was at least as strict as that of the DOJ and the FTC. As a notable example, when I served as the DOJ's expert on the Whirlpool/Maytag merger in 2006, I concluded that the merger would harm competition, but the DOJ did not challenge that merger.

Because of my relatively strict approach to horizontal mergers, all of my trial testimony in merger cases since my time at the DOJ during 1995-1996 has been on behalf of plaintiffs challenging mergers, usually either the DOJ or the FTC. In 1998, I testified on behalf of the FTC in its successful challenge to a pair of proposed mergers in the drug wholesaling industry. In 2013, I testified on behalf of the DOJ in its successful challenge of Bazaarvoice's consummated acquisition of PowerReviews. In 2016, I testified on behalf of the FTC in its successful challenge of Staples' proposed acquisition of Office Depot. In 2017, I testified on behalf of Steves Doors in its successful challenge to JELD-WEN's consummated acquisition of CMI. In 2019, I testified on behalf of a number of state attorneys general in their unsuccessful challenge to T-Mobile's proposed acquisition of Sprint.

I have also testified in one vertical merger case. In 2018, I testified on behalf of the Department of Justice in its unsuccessful challenge to AT&T's proposed acquisition of Time Warner.

Pay-For-Delay Pharmaceutical Cases

I began working on pharmaceutical "pay-for-delay" cases in the late 1990s. My published research showed that competition and consumers are typically harmed when a branded pharmaceutical company settles a patent infringement lawsuit with a potential generic entrant by transferring significant value to the would-be generic entrant and the generic company agrees to a restriction on its ability to enter the market as an independent rival. Based on my research, I proposed that such agreements be presumed to be anti-competitive. When I was at the DOJ during 2009-2011, I worked to implement antitrust enforcement consistent with that view. Since then I have published several articles further developing that approach.

In 2016, I gave deposition testimony on behalf of the FTC in its pay-for-delay case against Actavis when that case returned to the District Court on remand from the Supreme Court. That case settled before trial. In 2017, I testified on behalf of the FTC in its sham litigation case against AbbVie, again stressing the harms to consumers when generic entry is delayed. In 2017, I testified on behalf of the U.K. Competition and Markets Authority before the Competition Appeals Tribunal in its pay-for-delay case against GlaxoSmithKline and others.

Patent Holdup and Standard-Essential Patents

In 1996 I started working on cases involving standard-essential patents (SEPs). That work helped me to better understand the dangers associated with patent holdup. Over the past 25 years I have written numerous papers about the patent system in general and SEPs in particular, including a highly-cited paper, Patent Holdup and Royalty Stacking, with Mark Lemley. The common theme in this research is that the patent system works best when the rewards to innovators, including patent holders, are well aligned with their economic contributions. Patent holdup can give patent holders rewards that are disproportionate to their contribution.

My thinking on these issues was aided by my work for Intel during the late 1990s. Intel was an attractive target for owners of SEPs and was vulnerable to patent holdup. Over the years, I have provided advice to a number of companies that were vulnerable to SEP holdup, including Altera, Amazon, Apple, Broadcom, Dell, Nokia, Rockwell, Texas Instruments and Xilinx. In 2006 I testified on behalf of the FTC in its case against Unocal that involved patent holdup. Later, as a Member of the Council of Economic Advisers, I worked to reform the patent system by improving patent quality and reducing patent holdup as part of the Obama Administration's efforts in support of the America Invents Act, which passed in 2011.

In 2019, I testified on behalf of the Federal Trade Commission in its challenge to Qualcomm's licensing practices. In my opinion, Qualcomm abused its dominance over modem chips to extract unreasonably high royalties on its SEPs from mobile device makers, harming competition and consumers. The District Court agreed with my analysis, but the Ninth Circuit reversed.

In 2022 I testified on behalf of Apple in case in the U.K. involving the fair, reasonable, and non-discriminatory ("FRAND") royalties that Apple should pay to a patent assertion entity, Optis.

Reasonable Royalties for Recorded Music

I have testified three times before the Copyright Royalty Board (CRB) in cases where the CRB was setting reasonable royalty rates for recorded music. Each time, I testified that the three major record companies have substantial market power in the licensing of recorded music. Each time, I encouraged the CRB to take account of that market power in setting rates. My testimony in 2015 was on behalf of Pandora Music. My testimony in 2018 and 2020 was on behalf of SiriusXM.

Antitrust, Network Effects, Innovation and Big Tech

Much of my research going back to the 1980s has studied how competition policy can best promote innovation. As far back as the early 1980s, it was clear to me that network effects would be a powerful force in the information technology sector. My work at that time with Michael Katz on network effects has proven quite influential. In March 1996, while I was at the DOJ, I gave a speech entitled Antitrust in Network Industries. My 1998 book with Hal Varian, *Information Rules: A Strategic Guide to the Network Economy* devotes several chapters to network effects, and the final chapter discusses competition policy in the network economy.

During the late 1990s, the two leading targets of antitrust attention in the tech sector were Intel and Microsoft. Regarding Intel, I concluded that the licensing practices of Intel that the FTC was challenging in 1998 were a reasonable way for Intel to defend itself against patent holdup. I gave deposition testimony on behalf of Intel to that effect. In my view, the settlement reached between the FTC and Intel did an excellent job of protecting competition while also allowing Intel to defend itself against patent holdup. Regarding Microsoft, I testified in 2001 on behalf of a group of states seeking stronger remedies in the *Microsoft* antitrust case than the DOJ had accepted. In 2009 I published a paper, *Microsoft*: A Remedial Failure, explaining why the remedies accepted by the DOJ were inadequate.

Over the past 20 years, I have consulted with the DOJ, the FTC, and many private companies on antitrust and innovation issues. Many of these cases have been in the information technology and telecommunications industries. For example, I was at the DOJ in 2010 when the DOJ challenged American Express for its anti-steering policy. I strongly disagree with the Supreme Court's ultimate decision in that case. My testimony for the FTC in its case against Qualcomm centered on patent licensing and innovation. In 2023 I published a paper with Keith Waehrer about that case. Over the past decade, I have been retained by the DOJ and the FTC on a number of matters in the information technology and telecommunications industries. I also have advised Adobe, Apple, Cisco, Google, Intel, and other companies in the tech sector on a range of antitrust issues.

Disclosure of Entities Providing Significant Financial Support in the Past Three Years

The following list of entities is intended to comply with the Disclosure Policy of the American Economic Association.

> Adobe, Apple, California Attorney General, Cisco, Google, Steves Doors, United States Steel Corp., U.S. Department of Justice.

I also have received significant financial support from Charles River Associates, where I am a Senior Consultant.