CPI's North America Column Presents:

The Alignment of Evidence and Economic Theory in *FTC v. Qualcomm*: A Response to Ginsburg & Wright

By Joseph Kattan & Timothy J. Muris
(Gibson, Dunn & Crutcher; Sidley Austin)[1]

April 2019

CPI COMPETITION POLICY INTERNATIONAL

In a recent post on CPI Journal's Blog O' Blogs, Judge Douglas Ginsburg and Professor Joshua Wright criticize the expert testimony of Professor Carl Shapiro in the FTC's case against Qualcomm.[2] Ginsburg & Wright contend that Shapiro's Nash bargaining model was "based upon assumptions that are contrary to real-world evidence and [] does not robustly or persuasively identify anticompetitive effects."[3] Ginsburg & Wright avoid criticizing Shapiro's model itself, focusing entirely on the alleged lack of evidentiary support for it. Curiously, however, their post does not discuss any of the evidence presented by the witnesses who testified at the trial. We have reviewed the trial record, and the evidence it contains supports Shapiro's testimony overwhelmingly.

Before we begin, let us clear the air on one critical point. We agree with Ginsburg & Wright that liability for monopolization should be based on proof of anticompetitive effects. The two assert that one of us (Muris) "would apparently find it sufficient merely to allege a theoretical 'ability to manipulate the marketplace,'"[4] but the article that they cite[5] actually affirms both the need for and the existence of evidence of anticompetitive effects in the *Qualcomm* case. Let there be no doubt. We reject the use of shortcuts in monopolization cases. The evidence must show that the challenged practices injured competition and consumers. In the *Qualcomm* case, it did so decisively.

Shapiro's Nash Bargaining Model

At the *FTC v. Qualcomm* trial, Shapiro presented a Nash bargaining model that depicts the effects of Qualcomm's "no license no chips" regime, under which Qualcomm refuses to supply modem chips in which it holds a monopoly position unless customers take patent licenses from it. Shapiro showed that the royalty that Qualcomm imposes through these licenses, which customers must pay on mobile phones that incorporate modem chips manufactured by Qualcomm's rivals, operates as a direct tax on Qualcomm's competitors. He reasoned that the royalty reduces the gains of trade from dealings between Qualcomm's rivals and mobile phone manufacturers, and that the trading parties consequently must bear that cost. The effect of "no license no chips," according to Shapiro, is to "cause the [customer's] cost to go up, cause the rival to get a lower margin, and some of this cost increase will be passed on to final consumers."[6]

All of this is basic bargaining theory, and Ginsburg & Wright do not take issue with the soundness of Shapiro's model. Their argument is that the evidence does not support it. They note, correctly, that Shapiro did not quantify the royalty surcharge that his model was addressing. But he did not need to. The evidence that Qualcomm had imposed a massive royalty surcharge came from the witnesses that testified before him, including Qualcomm's own executives. The exact size of the overcharge was not relevant to the issue of Qualcomm's liability, on which Shapiro testified, but trial evidence demonstrated, as we show below, that the overcharge was quite substantial.

Shapiro relied on sound economics in concluding that the "no license no chips" regime forced Qualcomm's customers to pay inflated royalties. He explained that Qualcomm's threat to cut off modem supplies impairs customers' ability to bargain for a reasonable royalty. Instead of negotiating in the shadow of infringement litigation, customers negotiated in the shadow of a credible threat of a material impairment to their business. This, Shapiro explained, is "a very heavy hammer that Qualcomm is bringing down, at least as a threat, in those negotiations because that would be very costly to the OEMs to lose access to Qualcomm's modem chips."[7] In support, he cited testimony from numerous customers that the prospect of losing access to Qualcomm's modem chips "substantially shifted the negotiations over royalties and they felt pressured to agree to royalties . . . significantly higher than they otherwise would have."[8] Shapiro also cited evidence from Qualcomm itself that showed that "QCT, their chip business, was supporting QTL [Qualcomm's licensing business] to be able to get higher royalties by bringing this leverage to bear."[9]

The Evidence

Ginsburg's & Wright's only quarrel with Shapiro is that the evidence supposedly did not support his theoretical analysis. Given that claim, it is useful to examine what the evidence at trial showed. As already mentioned, Shapiro actually relied on the testimony of both customers and Qualcomm executives in forming his opinion. So, let's examine that evidence.

Here is just a small sampling of what Qualcomm's customers said about Qualcomm's "no license no chips" regime.

- LGE's Hwi-Jae Cho testified that LGE had accepted a license on terms that it considered unreasonable because it "had to consider the business risks" of refusing to accede to Qualcomm's terms. Qualcomm had threatened to discontinue the supply of modem chips to LGE, and according to Cho, "when Qualcomm threatened to terminate the supply agreement, LGE had no option but to agree to whatever Qualcomm demanded. LGE's top management did not want to take the risk of endangering LGE's mobile business."[10]
- Similarly, Lenovo's Ira Blumberg testified that Lenovo had agreed to Qualcomm's unreasonable licensing demands because "when you're facing, as we've discussed, a dispute resolution that says either you agree or you can't get any more key supplies, it certainly changes the balance of negotiating capabilities, and basically makes you say, 'Do I still want to be in this business? Because I'm taking the risk that I will be shut out immediately if I don't agree.'"[11]
- Blackberry's John Grubbs testified that Blackberry acceded to Qualcomm's licensing demands because it "was very concerned that Qualcomm – if BlackBerry pushed [its negotiating position] too far, that Qualcomm could just shut down supply and walk off."[12]

Other customers echoed these same sentiments. The threat of supply loss forced them to accept demands that they otherwise would have contested. As Richard Donaldson, one of the most experienced licensing executives in the country (now retired) testified, by threatening supply cutoff, Qualcomm "took the risk of litigation off the table," putting the customer in the position of "I agree to the license or basically go out of business."[13]

Qualcomm knew that its "no license no chips" policy gave it the leverage to impose unreasonably high royalties, in breach of its voluntary commitments to license its standard-essential patents (SEPs) on fair, reasonable, and nondiscriminatory (FRAND) terms. This is why it repeatedly threatened customers with supply cutoff unless they agreed to its non-FRAND licensing demands. When Qualcomm considered splitting itself into separate chip and licensing companies, it concluded that, as its former CEO put it, "[w]ithout [the] chip business more licensees, potential licensees might fight [Qualcomm's] license demand."[14] A former Qualcomm president wrote in an internal presentation that if the chip and licensing businesses were split, licensees "may more aggressively seek to challenge certain aspects of our licensing business and/or their agreements with Qualcomm."[15]

And customers had good reason to challenge Qualcomm's licensing business. Despite Qualcomm's voluntary commitments to license its SEPs on FRAND terms to all standard implementers, the company refused to license competing chipmakers. Qualcomm actually argued in the FTC case that its commitment to license "all applicants" meant that it had to license only some applicants, but it lost that argument on summary judgment.[16] Why did Qualcomm breach its FRAND commitment so blatantly? As its top licensing executives told the IRS in a transcribed interview, licensing handset makers instead was "humongously more lucrative."[17] How humongous? Qualcomm collects more in patent royalties than all other cellular SEP holders combined despite owning a low to mid-teens percentage of all cellular SEPs (including cellular SEPs that experts consider significant). According to the company's own estimate, Qualcomm collects 25 percent of all patent royalties worldwide—not just for cellular products but for *all products* sold globally.[18]

The "Empirical" Rebuttal

In criticizing Shapiro for lacking evidentiary support for his economic analysis, Ginsburg & Wright notably ignore the large body of trial evidence that supports his analysis. They also go on to criticize Shapiro for not embracing the "empirical" analysis of Qualcomm's economic expert, Professor Aviv Nevo. Once again, the trial record vindicates Shapiro.

Nevo's empirical analysis purported to show that Qualcomm did not abuse its monopoly position because Qualcomm's royalty rates allegedly had been consistent for decades. But, as Nevo's cross-examination demonstrated, his analysis only showed that the royalty rates of certain cherry-picked licenses had remained the same. Nevo's selection of licenses for inclusion and exclusion in his analysis is telling. He excluded from consideration any license that had non-standard terms.[19] He also disregarded any license amendments that had altered

the terms that he incorporated into his analysis.[20] In addition, Nevo excluded the value of any cross-licenses that Qualcomm obtained as part of a license agreement.[21] And on top of that, he excluded any consideration of the royalty base and all other license terms.[22] It's as if Nevo were studying the retail prices of automobiles and discarded all sales other than those at the sticker price.

But there is even more. Nevo's analysis contained no controls for changes in the strength of Qualcomm's patent portfolio (which had gotten weaker over time), differences among customers, and changes in the composition of handsets over time.[23] Under Nevo's analysis, a 5 percent royalty for cellular SEPs on a first-generation handset that made and received calls and did no more is identical to a 5 percent royalty on a current-generation phone that incorporates a high-performance microprocessor, an advanced graphics processor, volatile and nonvolatile memory, a flat panel display, still and movie cameras, a multimedia player, face recognition technology, and touch technology. This is even though Qualcomm's SEPs are embodied in the mobile chip that enables cellular communications. Thus, under Nevo's analysis, the constancy of the list price for Qualcomm's royalties — never mind what the actual royalty and licensed product are — proves that there is no overcharge. When asked whether his analysis refutes the testimony of the licensees who said that they "paid more because of chip leverage," Nevo responded "it's my testimony that the data shows what they show."[24] Unfortunately for Nevo, his data showed nothing of substance.

Ginsburg & Wright also claim that Nevo had shown that the industry was characterized by declining prices. True. But not due to Qualcomm. Like all other electronic industries, the mobile phone industry is characterized by declining prices because of Moore's Law. On average, the cost of electronic components declines by 50 percent every two years.[25] This goes for the microprocessors, graphics processors, DRAM, nonvolatile memory, flat panel displays, and other components that make up a mobile phone. Imagine a phone with a $100 bill of materials whose components decline in cost by 50 percent every two years. Holding the components constant for the sake of argument, at the end of two years, the bill of materials cost is $50. But the royalty, according to Nevo himself, has not decreased at all. Does this prove the absence of a royalty overcharge? The question answers itself.

Conclusion

Ginsburg & Wright do not take issue with Shapiro's model. They say instead that his analysis is undermined by "conflicting market realities." But a large body of evidence shows that market realities fully support Shapiro's analysis. Those market realities are that Qualcomm's licensing practices harmed competition, excluded competitors, and injured consumers with higher prices. We agree with Ginsburg & Wright that "[m]odern antitrust analysis does not condemn business practices as anticompetitive without solid economic evidence of an actual or likely harm to competition," and we would be the first to condemn a monopolization case that failed this test. In picking *FTC v. Qualcomm*, Ginsburg & Wright chose the wrong case.

[1] Joseph Kattan is a partner at Gibson, Dunn & Crutcher LLP. Timothy J. Muris is a George Mason University Foundation Professor of Law at the Antonin Scalia Law School and Senior Counsel at Sidley Austin LLP. The authors advise a variety of clients in connection with standard-setting matters, including Intel Corporation in connection with the case discussed in this article. The views expressed in the article are solely their own.

[2] Douglas H. Ginsburg & Joshua D. Wright, *Use and abuse of bargaining models in antitrust: AT&T/Time-Warner and FTC v. Qualcomm,* available at https://truthonthemarket.com/2019/03/14/use-and-abuse-of-bargaining-models-in-antitrust/?utm_source=CPI+Subscribers&utm_campaign=0ce29b7554-EMAIL_CAMPAIGN_2019_03_29_04_25&utm_medium=email&utm_term=0_0ea61134a5-0ce29b7554-234864229.

[3] *Id.*

[4] *Id.*

[5] Timothy J. Muris, *Why The FTC Is Right To Go After Qualcomm For Manipulating Cell Phone Costs*, available at https://thefederalist.com/2019/03/04/ftc-right-go-qualcomm-manipulating-cell-phone-costs/.

[6] *FTC v. Qualcomm, Inc*., Case No. 5:17-cv-00220-LHK (N.D. Cal.), trial transcript of Jan. 15, 2019, at 1137.

[7] *Id.* at 1133.

[8] *Id*.

[9] *Id.* at 1134.

[10] *Id.* at 933-34.

[11] *FTC v. Qualcomm*, Jan. 4 testimony by deposition at 13.

[12] *FTC v. Qualcomm*, Jan. 8 testimony by deposition at 6.

[13] *FTC v. Qualcomm*, Trial transcript at 967.

[14] *FTC v. Qualcomm,* Jan. 4 testimony by deposition at 7.

[15] *FTC v. Qualcomm*, Trial transcript at 42.

[16] *FTC v. Qualcomm Inc.*, 2018 WL 5848999 (N.D. Cal. Nov. 6, 2018).

[17] *FTC v. Qualcomm*, Trial exhibit CX6786-R at 71.

[18] *FTC v. Qualcomm*, Trial transcript at 2125.

[19] *Id*. at 1930, 1933-34.

[20] *Id.* at 1929, 1939.

[21] *Id.* at 1929.

[22] *Id.*

[23] *Id.* at 1943.

[24] *Id.* at 1927.

[25] Moore's Law predicts that the number of transistors per square millimeter of a semiconductor chip will double every two years. See https://en.wikipedia.org/wiki/Moore%27s_law. A corollary of that prediction is that the price of semiconductors will decline by approximately 50 percent every two years.