

United States Court of Appeals For the First Circuit

Nos. 23-1585
24-1325

UNITED STATES,

Appellee,

v.

HAOYANG YU,

Defendant, Appellant.

APPEALS FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

[Hon. William G. Young, U.S. District Judge]

Before

Montecalvo, Lipez, and Aframe,
Circuit Judges.

William W. Fick, with whom Daniel N. Marx, Amy Barsky, and Fick & Marx LLP were on brief, for appellant.

Karen Lisa Eisenstadt, Assistant United States Attorney, with whom Leah B. Foley, United States Attorney, was on brief, for appellee.

December 11, 2025

MONTECALVO, Circuit Judge. Haoyang Yu worked for Analog Devices, Inc. ("ADI"), a company that designs and produces microchips. While employed there, Yu downloaded ADI's proprietary information and held onto it after leaving the company. He soon started selling microchips that were similar to ADI's. A grand jury indicted Yu on twenty-one counts, spanning possession of stolen trade secrets, wire fraud, illegal exports of controlled technology to Taiwan, visa fraud, and unlawful procurement of citizenship. At trial, a jury convicted Yu on just the first count: unlawful possession of a trade secret in violation of 18 U.S.C. § 1832(a)(3). Yu now appeals, challenging the sufficiency of the evidence as to particular elements of the charge. He also claims unconstitutional selective enforcement and prosecution, alleging that, because he is from China, he was investigated and prosecuted much more harshly than someone who is not ethnically Chinese would have been.

For the following reasons, we affirm.

I. Factual Background

We recount the facts relevant to Yu's sufficiency challenge in the light most favorable to the prosecution. See United States v. Díaz-Rosado, 857 F.3d 116, 117 (1st Cir. 2017). We provide a neutral summary of the facts relevant to his other claims. See id.

Because the jury ultimately convicted Yu on only one count -- possession of a stolen trade secret, specifically, "[t]he design layout and GDS file for the HMC1022A microchip" -- we focus on the facts relevant to that charge.¹ We refer to this electronic file that Yu was accused of possessing as the "charged file."

We begin with relevant background about ADI and its work. ADI creates microchips, which are devices that process and store information and help make electronic appliances work. As relevant to this case, ADI develops radio frequency and microwave amplifier microchips (also called "monolithic microwave integrated circuits" or "MMICs") that allow electronic devices to broadcast and send signals over the air. MMICs are tiny; comparing them to the tip of a pencil, they can measure approximately one pencil tip long and two pencil tips wide. ADI designs MMICs for use in infrastructure -- for example, airplanes and cell phone towers -- as opposed to consumer goods. ADI has customers in the cell phone, auto, aerospace, and defense industries. ADI's MMICs have military uses, such as in satellites and radar. ADI designs the microchips and uses Win Semiconductor ("Win"), a company based in Taiwan, to manufacture them.

In 2014, ADI acquired another microchip company called Hittite Microwave Corporation ("Hittite"). Before the

¹ A GDS file is the type of computer file used to convey a design layout.

acquisition, Hittite manufactured some of its MMIC designs at Win and some with another manufacturer. Each microchip manufacturer has its own particular set of manufacturing technologies, which makes it difficult for designers to switch manufacturers. But after the acquisition, ADI began the painstaking process of translating Hittite's non-Win designs into designs that could be manufactured by Win.

Designing a MMIC is an iterative process. First, the designer creates a three-dimensional "schematic" for how the MMIC should operate, involving potentially thousands of mathematical formulas to model how various components work together. This process can take an experienced designer several weeks. Next, the designer uses a computer to run simulations to test how well the schematic works. The designer runs thousands of simulations to refine the schematic.

At the next stage, the designer creates the layout, which is a diagram that describes precisely how the components of the MMIC fit together and contains all the information needed to manufacture the MMIC. The designer then returns to the schematic and simulation stages and refines the design layout. The overall process, from starting the first schematic to creating a design layout ready to be manufactured and tested, can take three to six months.

When the designer thinks the design layout is ready, ADI creates what is called a GDS file and sends it to Win to manufacture a prototype. Manufacturing a MMIC prototype typically takes Win around six weeks and costs ADI \$35,000 to \$50,000. Win manufactures thousands of the prototype MMIC, which ADI then tests hundreds of times on equipment that costs hundreds of thousands of dollars. The first prototype is almost never ready for the market. Instead, the designer will return to the design phase to further refine the design, creating new prototypes as needed until the design layout is finalized and the MMIC is ready to go to market. A typical MMIC sells for around \$200.

The translation process, which ADI used to recreate Hittite's existing MMICs into design layouts that Win could manufacture, involves the same iterative design process. But translations can take even more time and effort because the finished product must exactly mirror the existing product. In other words, the translation should not be better or worse; it must be the same in every way. To track these translated MMICs, ADI named the finished product using "HMC" (to denote Hittite), followed by Hittite's identification number for the original MMIC, and appended an "A" to it to denote that it was ADI's translation rather than the original.

Yu had recently begun working at Hittite at the time of its acquisition in 2014. He became an ADI employee in the

acquisition. Yu had previously worked on microchip products geared towards consumer applications, but at ADI, he transitioned to microchips for industrial use and learned the relevant skillset to work on translating Hittite's MMIC designs.

Yu signed confidentiality agreements with ADI, which defined "[c]onfidential [i]nformation" as including "all information acquired by [Yu] from ADI . . . that relates to the past, present[,] or potential . . . products . . . of ADI." Yu agreed that he would not disclose this confidential information to any third parties, would not "make use" of such information "for [his] own purposes . . . under any circumstances during or after the term of [his] employment," and that he would return all such information to ADI at the end of his employment.

In approximately mid-2016, Yu began saving copies of some of ADI's GDS files to his personal computer. He changed the names of some of these files to the names of Pokémon characters. ADI's file called "K8600_TOP.gds" contained multiple MMIC design layouts, including the HMC1022A prototype (the charged file). When Yu copied this file, he renamed it as "Kids8600.jpg" as though it were a photograph of his children. However, one could only open the file by changing the file extension from ".jpg" to ".gds."

In January 2017, Yu emailed Win to ask whether it would work with a small business. Win replied that it would, but that it would likely require payment upfront and that it would need a

non-disclosure agreement. Yu agreed to these terms. Yu also began reaching out to potential customers about working with a new MMIC design company.

In March 2017, Yu registered a new company called Tricon MMIC, LLC ("Tricon") under his wife's name, Yanzhi Chen. Tricon's website advertised its MMICs as potential substitutes for or improved versions of ADI's MMICs, including the HMC1022.

On June 1, 2017, Yu sent his first design layout GDS file to Win to manufacture. He requested that Win "[p]lease treat [the file] as proprietary data." Typically, it takes designers "several weeks to several months" after receiving Win's "process design kit" to refine and finalize their designs, yet Yu sent his first GDS file to Win just two days after receiving its kit. Also in June of 2017, Yu wrote to a business contact to ask for help promoting a new company that he was starting. But Yu asked his contact to "keep [the new company] a secret for now" because he did not "want to be noticed by [ADI]."

Yu received the first set of manufactured MMICs from Win in mid-July 2017. Win representatives noted that the Tricon MMICs did not appear to be products of the typical iterative process where designers refine the design for a particular MMIC over time. Rather, the Tricon MMICs appeared to be "finished good[s]" from the first production.

On July 31, 2017, Yu resigned from ADI. After he left the company, he retained the ADI information, including MMIC design files, that he had copied to his personal computer. At the beginning of August, Yu began shipping samples and orders of Tricon MMICs to customers.

In July 2018, Yu sent Win another GDS file containing additional design layouts, including two named TM5051 and TM5052. The Tricon website advertised the TM5051 and TM5052 as the equivalent of the "ADI (Hittite)" "HMC1022 with more bandwidth." Yu received the manufactured TM5051 and TM5052 MMICs in early September 2018.

ADI released its HMC1022A microchip for sale on February 15, 2019.

II. Procedural History

A grand jury returned an indictment against Yu and Tricon on June 11, 2019. The fifteen counts against Yu spanned theft of a trade secret, copying a trade secret, possession of a trade secret, and smuggling.

Three days later, on June 14, 2019, federal agents searched Yu's house pursuant to a warrant. The agents also arrested him, although he was released on bond five days later.

A. Pretrial Motions and Superseding Indictments

On June 22, 2020, Yu moved to dismiss the indictment due to selective enforcement and prosecution in violation of his equal

protection rights under the Fifth Amendment. He argued that law enforcement had targeted him for investigation (the basis for his selective enforcement claim) and that government prosecutors had targeted him for prosecution (the basis for his selective prosecution claim) based on his Chinese ethnicity. In support, he pointed to examples of non-Chinese people who had stolen trade secrets from U.S. companies, including ADI, but faced only civil claims for their actions. He also alleged that statistics showed that federal prosecutors targeted people of Chinese descent in espionage cases. In October, the district court decided to keep the motion under advisement pending trial because, in the district court's words, "trials have a way of testing the evidence."

On October 1, 2020, the grand jury returned a first superseding indictment. Yu was charged with additional counts covering wire fraud, transportation of stolen goods, visa fraud, and unlawful procurement of citizenship. The indictment also added Yu's wife, Yanzhi Chen, as a defendant on the three wire fraud counts.

A year later, the grand jury returned a second superseding indictment that was largely similar but added two counts for illegal exports of controlled technology to Taiwan.

A third (and final) superseding indictment, filed on January 26, 2022, and charging twenty-one counts, was similar to the second superseding indictment but dropped the original counts

for theft of trade secrets. As relevant here, it listed the specific computer files that underlay each count for possession or attempted possession of stolen trade secrets, in violation of 18 U.S.C. § 1832(a)(3), (4). Count One specified Yu's alleged possession of "[t]he design layout and GDS file for the HMC1022A microchip."

On March 28, 2022, on Yu's motion, the district court dismissed one wire fraud count before trial as time-barred.

B. Trial

On May 3, 2022, the case against Yu and Tricon proceeded to a jury trial.² Yu faced twenty-one counts: twelve counts of possession and attempted possession of stolen trade secrets; five counts of wire fraud; two counts of illegal exports of controlled technology to Taiwan; one count of visa fraud; and one count of unlawful procurement of citizenship. The trial lasted fifteen days.

At the close of the prosecution's case, Yu and Tricon moved for judgments of acquittal due to insufficient evidence. The district court took the motion under advisement. After presenting evidence, the defense renewed this motion. The district court granted acquittal as to the count charging Yu with unlawful

² In July 2021, the district court had held that Yu and Tricon would be tried separately from Chen.

procurement of citizenship but allowed the remaining counts to go to the jury.

The jury returned a guilty verdict on Count One, convicting Yu of possessing a stolen trade secret for the design layout and GDS file for the HMC1022A microchip. The jury acquitted Yu on all other counts and acquitted Tricon on all counts that it faced.³

C. Post-Trial Motions

Several weeks after the jury verdict, on June 13, 2022, the district court entered an order regarding Yu's motion to dismiss. The district court denied the motion to dismiss due to unconstitutional selective prosecution.⁴ It held that Yu had not presented "sufficiently clear evidence that 'similarly situated individuals of a different race were not prosecuted,'" as required by United States v. Armstrong, 517 U.S. 456, 464-65 (1996). However, the district court reasoned that selective enforcement claims do not have as high an evidentiary burden as selective prosecution claims. Therefore, the district court allowed Yu "limited discovery" regarding the selective enforcement claim and continued to reserve its decision.

³ A month later, on June 28, 2022, the prosecution filed a motion to dismiss the charges against Chen. The district court granted the motion on July 14, 2022.

⁴ The district court later denied Yu's motion to reconsider the denial of his selective prosecution claim.

Following discovery, at a hearing on May 11, 2023, the district court denied Yu's motion to dismiss based on selective enforcement. The district court expressed concern about "implicit bias" and anti-Asian racism. However, it concluded by a preponderance of the evidence that law enforcement likely would have investigated Yu for the specific conduct at issue in this case even had he not been from China or of Chinese descent.

D. Sentencing

On June 1, 2023, the district court sentenced Yu to six months' imprisonment and thirty-six months of supervised release and ordered payment of a \$55,000 fine. The district court later ordered restitution in the amount of nearly \$200,000 based on the legal fees that ADI had incurred. Yu has completed the prison sentence and satisfied the restitution order.

III. Discussion

We begin with Yu's various arguments that the evidence was insufficient to support his conviction before turning to his arguments that he was selectively investigated and prosecuted based on his ethnicity, in violation of the Fifth Amendment.

A. Sufficiency of the Evidence

Yu brings four distinct arguments as to why the evidence against him was insufficient. We address each in turn.

1. Standard of Review

We review the sufficiency of the evidence de novo, examining the evidence "in the light most favorable to the prosecution and decid[ing] whether that evidence, including all plausible inferences drawn therefrom, would allow a rational factfinder to conclude beyond a reasonable doubt that the defendant committed the charged count or crime." Díaz-Rosado, 857 F.3d at 120 (citations omitted).

2. The Charged File

Yu first argues that the evidence against him was insufficient to support Count One, which charged him with unlawfully possessing "[t]he design layout and GDS for the HMC1022A microchip." (Emphases added.) Yu contends that this description refers to ADI's final HMC1022A design, as it was released for sale in February 2019. But, Yu argues, he never possessed that final HMC1022A design. Instead, Yu continues, he possessed "an earlier, abandoned 'prototype'" that was not specified in the indictment, and the evidence at trial related to his possession of that earlier prototype. In Yu's view, "[b]roadening the indictment . . . in an attempt to encompass the trial evidence about an abandoned prototype design for what eventually became the HMC1022A would be an impermissible constructive amendment." See United States v. Brandao, 539 F.3d 44, 57 (1st Cir. 2008) ("A constructive amendment occurs when the charging terms of an indictment are altered, either

literally or in effect, by prosecution or court after the grand jury has last passed upon them." (quoting United States v. Pierre, 484 F.3d 75, 81 (1st Cir. 2007))).

In response, the government argues that the indictment employed "the" in a colloquial sense and that Yu is improperly reading the indictment as if it were a statute. The government contends that it is obvious both as a matter of common sense and in the context of the indictment that Yu was charged with possessing a prototype, not the final HMC1022A design. First, Yu could not have possessed the final HMC1022A design before it existed. Second, the full indictment made clear that Yu was charged with possessing the specific files that he had downloaded from ADI's servers, which he then used to create microchips based on ADI's designs.

Finally, the government disagrees with Yu's characterization of any discrepancy between the indictment and the evidence at trial as a constructive amendment. Instead, the government says, the claim should be properly described as a variance, meaning that "the government relie[d] at trial on different facts than those alleged in the indictment to prove the same offense." (Quoting United States v. Katana, 93 F.4th 521, 530 (1st Cir. 2024).) But, the government continues, Yu waived any claim of variance by failing to advance the argument in his

briefing on appeal, even though he had argued before the district court that there had been a variance.

We need not delve into whether the proper claim would be one for constructive amendment or variance, because we agree with the government that the indictment, read in its entirety, clearly specifies the file with which Yu was charged with possessing. See Katana, 93 F.4th at 530 (reviewing preserved claims of constructive amendment and variance by "read[ing] the indictment '"in a plain and commonsense manner," focusing on the text and what it reveals about the scope of the crimes the grand jury intended to charge'" (quoting United States v. Martínez, 994 F.3d 1, 13 (1st Cir. 2021))) .

The indictment begins with over ten pages of "General Allegations," which give context to the charges enumerated later. Specifically, the indictment alleges that, starting no later than September 2016 and "continu[ing] for several months," Yu began "stealing ADI's confidential information by downloading files from ADI's servers" and saving them on his personal computers and personal Google Drive account. The indictment further alleges that, in July 2018, Yu sent Win a GDS file that "contained manufacturing data for about 13 microchips based on stolen ADI designs," including the TM5051 and TM5052. The indictment also includes an image from the Tricon website, which described the TM5051 and TM5052 as similar to ADI's "HMC1022 with more

bandwidth." Finally, the indictment alleges that, when Yu's home was ultimately searched in June 2019, Yu had in his possession over 2,000 files that were ADI property; "these files matched -- bit-for-bit -- those developed, owned, and still maintained by ADI."

After this full description, the indictment lists the first twelve counts of possession and attempted possession of stolen trade secrets. The indictment specifies the files referred to in each count. Count One is based on Yu's alleged possession of "[t]he design layout and GDS file for the HMC1022A microchip," which Yu possessed on approximately June 14, 2019, the date that federal agents searched his home.

Reading the indictment "in a plain and commonsense manner," see id., the description in Count One clearly refers to ADI's prototype for what ultimately became the HMC1022A, not to ADI's finished version of the HMC1022A that eventually went to market. The indictment clarifies that it refers to the file that Yu downloaded from the ADI servers and used to create his own MMICs, which his company's website advertised as being a replacement for the HMC1022. In context, the indictment makes clear which file Yu was charged with possessing.

We therefore disagree with Yu's assertion that "there was no evidence that Mr. Yu ever possessed the alleged 'trade secret' charged in Count One." On the contrary, as Yu concedes,

the evidence showed "that he possessed . . . a design layout and GDS file for an earlier . . . 'prototype,' which ADI created during its 'translation' process from the legacy HMC1022 into what eventually . . . became the final HMC1022A." Because the indictment charged Yu with possessing that earlier prototype, his first sufficiency challenge fails.

3. Independent Economic Value on the Charged Date of Possession

Next, Yu disputes that the file in his possession constituted a trade secret on the charged date. He points to the definition of a "trade secret," which requires, in part, that "the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, another person who can obtain economic value from the disclosure or use of the information." 18 U.S.C. § 1839(3)(B).

Yu notes that the indictment specified that he possessed a trade secret on approximately June 14, 2019, but he argues that the design could not have constituted a trade secret at that time. This is so, he contends, because ADI had released HMC1022A to the public in February 2019, meaning that its features were "readily ascertainable" and did not constitute a trade secret by June 2019. See BondPro Corp. v. Siemens Power Generation, Inc., 463 F.3d 702, 706 (7th Cir. 2006) ("A trade secret that becomes public knowledge is no longer a trade secret."). Yu's argument leans heavily on

casting MMIC design layouts as relatively easy to reverse-engineer from the finished MMIC. Therefore, according to Yu, the evidence was insufficient that he possessed a trade secret on or around the charged date.

In response, the government strongly contests the notion that the final design was "readily ascertainable" from the microchip and therefore (as Yu argues) no longer a trade secret. The government points to extensive evidence about the time, expense, labor, and difficulty involved in trying to reverse-engineer a MMIC design layout from a physical microchip. Finally, the government argues that Yu could not have reverse-engineered his microchip from ADI's final design because ADI's final design was different from the earlier prototype that Yu had taken with him.

In essence, Yu asks us to disregard the prosecution's evidence that reverse engineering a design from a physical microchip is both labor- and time-intensive and instead adopt his characterization of the process as relatively easy and quick. This we cannot do. Viewing the evidence in the light most favorable to the prosecution, there was sufficient evidence for a rational juror to conclude that the charged file was still a trade secret on the approximate date named in the indictment. See Díaz-Rosado, 857 F.3d at 120. The prosecution presented evidence that the competitive advantage of a MMIC design comes from the exact size,

placement, and relationship of a microchip's many components. When attempting to reverse-engineer a design, although a microscope may assist in viewing these components, even with magnification, the lower layers of a MMIC are still difficult to discern. The prosecution presented evidence to counter Yu's suggestion that "counting pixels" using a powerful microscope to determine the placement and proportions of MMIC components is straightforward. Reverse-engineering from magnified images can take "several weeks to a month" of dedicated work to prepare the schematic and layout, plus more time for testing and tapeouts. And the entire process requires expensive tools and software. The prosecution's evidence showed, then, that while reverse-engineering a MMIC design from a physical chip is possible, it requires significant cost, time, and skill -- the design is not "readily ascertainable." From this evidence, a rational juror could easily have concluded that the files that Yu took still constituted a trade secret on approximately June 14, 2019, even though the HMC1022A was publicly available at that time.

4. Independent Economic Value at Any Time

Yu next argues that the evidence was insufficient to show that the files he took constituted a trade secret at any point in time. He characterizes the ADI files in his possession as "the abandoned HMC1022A prototype" that was "merely an early attempt to 'translate' a legacy design that had been on the market for years

and that closely resembled other competitor chips." Because Hittite's legacy HMC1022 had been on the market and therefore its features were "readily ascertainable," Yu argues, ADI's early attempt to translate it by way of the prototype design (the charged file) was not a trade secret. It could not be a trade secret, he argues, because the file did not derive independent economic value from secrecy.

The government responds by again rejecting the notion that the design layout for the legacy HMC1022 was "readily ascertainable," characterizing Yu's argument as "a rehash of his failed reverse-engineering argument [regarding the HMC1022A]." The government argues that Yu's prototype design was a "'short cut' to creating a competitive chip," demonstrating its economic value. Indeed, the government argues that the reason a company like ADI invests so many resources into the translation process is that the ultimate product is profitable for the company. The government disagrees with Yu's argument that the legacy HMC1022 closely resembled other available MMICs, pointing to an email to a customer in November 2018 in which Yu wrote, "you can hardly find anything in the market that matches [the TM5051's] performance." Finally, the government disagrees with Yu's characterization of the ADI files as an "abandoned prototype," arguing that the ADI files gave Yu a "significant leg up" in creating the TM5051 and TM5052 design layouts.

As with the previous issue, Yu's argument amounts to a request that we give more weight to his characterization of the evidence than the prosecution's. But we must view the evidence in the light most favorable to the prosecution. There was sufficient evidence here for a rational factfinder to find that the ADI files "derive[d] independent economic value . . . from not being generally known . . . and not being readily ascertainable." 18 U.S.C. § 1839(3)(B). A rational juror could conclude that the ADI files gave Yu a significant advantage in the process of translating the original HMC1022 microchip; indeed, Yu was ultimately able to beat ADI's HMC1022A to market. A juror could also conclude that both ADI and Yu were willing to invest significant time and money in the translation process because translation design layouts are valuable.

5. Knowledge

Yu's final sufficiency argument concerns knowledge. He first argues that a conviction under 18 U.S.C. § 1832 required him to know that the charged file was a trade secret. In support, he relies on the district court's instructions to the jury that "the government must prove not only that the information was in fact a trade secret, but that Mr. Yu knew it was a trade secret."

Second, Yu contends that prosecutors presented insufficient evidence of his knowledge that the charged file was a trade secret. Because reverse-engineering competitors' MMICs

was common in the industry and was part of his job at ADI, he contends that MMIC design features were "readily ascertainable." Therefore, he argues, while he may have known that keeping ADI's files breached his employment agreement, he did not know that those files contained trade secrets.

Additionally, Yu argues that ADI's "Information Classification Policy" placed "trade secret information" in a "[s]ecret [n]eed to [k]now" security category. In contrast, schematics and layouts fell into a lower level of security that was accompanied by the admonition: "[e]xternal access to this data should be prevented, but should this data become public, the consequences are not critical." Therefore, Yu says, he could have believed that design layout files were confidential and proprietary but not trade secrets.

In response, the government disagrees that § 1832 requires the prosecution to prove that the defendant knew the charged trade secret constituted a "trade secret." Even if knowledge is a required element, the government continues, there was sufficient evidence of Yu's knowledge here. The government contends that a juror could reasonably infer that Yu knew the charged file in his possession was a trade secret from Yu's signed confidentiality agreements with ADI, his efforts to prevent ADI from learning he had taken ADI's files, and Yu's request that Win treat his own file as proprietary.

We need not resolve whether knowledge is a required element of a charge under § 1832 because we agree with the government that the evidence was sufficient for a rational juror to infer that Yu knew the charged file was a trade secret. Yu signed confidentiality agreements with ADI, promising not to share, or use for his own purposes, information about ADI's present and potential products. After taking files from ADI in violation of this agreement, he tried to conceal his thefts from ADI in various ways. He renamed the files that he took from ADI, including renaming the file that included the HMC1022A prototype from "K8600_TOP.gds" to "Kids8600.jpg" to mask that it was a GDS file. As he was starting Tricon, while still employed by ADI, he tried to keep Tricon a "secret" (as he put it to an acquaintance) so that ADI would not "notice[]" it. He asked Win to treat his own GDS files as "proprietary" data.

From Yu's actions, including his confidentiality agreements, his attempts to conceal his personal possession of ADI files, and his efforts to protect his own files, a juror could reasonably infer that Yu knew that the charged file was a trade secret. Cf. United States v. Martin, 228 F.3d 1, 12 (1st Cir. 2000) (finding an agreement to steal trade secrets where the

conspirators' actions indicated an intent to gather confidential and proprietary information).⁵

Having concluded that the evidence was sufficient to support the jury's guilty verdict on Count One, we turn to Yu's equal protection claims.

B. Selective Prosecution

Yu argues that the indictment should have been dismissed due to selective enforcement and prosecution of Yu based on his ethnicity, in violation of his Fifth Amendment right to equal protection. Although there is significant overlap between selective enforcement and selective prosecution, the legal standards differ somewhat, and so we address each claim separately. We begin with the selective prosecution claim, for which the legal framework is more clearly established. We therefore turn to Yu's argument that, as a person of Chinese ethnicity, he was selectively

⁵ In Martin, we examined the sufficiency of the evidence for a conviction of conspiring to steal trade secrets under 18 U.S.C. § 1832(a)(5). See id. at 10-13. As part of proving the conspiracy, the government had to prove "that the defendant possessed both the 'intent to agree and [the] intent to commit the substantive offense.'" Id. at 11 (alteration in original) (quoting United States v. Andújar, 49 F.3d 16, 20 (1st Cir. 1995)). We found sufficient evidence of an agreement to steal trade secrets where the appellant had received "extensive correspondence" that was "marked 'confidential' or 'proprietary,' or [the sender] had expressed some hesitation in forwarding"; had asked the sender to "absorb as much information, physically and intellectually, as you can"; had directed the sender's research with specific questions; and had referred to the sender as his "spy." Id. at 12.

prosecuted compared to non-Chinese people, who may face civil suits when they steal trade secrets but are not prosecuted criminally.

1. Standard of Review

In general, when reviewing a denial of a motion to dismiss an indictment, "we review legal questions de novo, any relevant factual findings for clear error, and the court's 'ultimate ruling' for abuse of discretion." United States v. McGlashan, 78 F.4th 1, 5-6 (1st Cir. 2023) (quoting United States v. Parigian, 824 F.3d 5, 9 (1st Cir. 2016)). These steps mirror our multifaceted abuse-of-discretion review. See, e.g., United States v. Lewis, 517 F.3d 20, 24 (1st Cir. 2008). We have not previously stated the standard of review for the denial of a selective prosecution claim, although we have made clear that we apply abuse-of-discretion review to a district court's denial of discovery in support of a selective prosecution claim. See id. at 23.

Our sister courts considering denied motions to dismiss for selective prosecution have largely adopted the same standard of review stated above; they review factual findings for clear error and legal conclusions de novo. See, e.g., United States v. Brantley, 803 F.3d 1265, 1270-71 (11th Cir. 2015); United States v. Al Jibori, 149 F.3d 125, 127 (2d Cir. 1998); United States v. Taylor, 686 F.3d 182, 197 (3d Cir. 2012); United States v. White, 928 F.3d 734, 742 (8th Cir. 2019). But see United States v. Rundo,

108 F.4th 792, 798 (9th Cir. 2024) (noting that the Ninth Circuit "has employed both a de novo standard and a clearly erroneous standard when reviewing a selective prosecution claim" but declining to "resolve any purported difference" as unnecessary to resolving the case before it (quoting United States v. Culliton, 328 F.3d 1074, 1080 (9th Cir. 2003) (per curiam))). Two circuits describe their standard of review as being for an abuse of discretion. See United States v. Alanis, 265 F.3d 576, 584 (7th Cir. 2001); United States v. Alcaraz-Arellano, 441 F.3d 1252, 1265 (10th Cir. 2006). The Sixth Circuit notes that it "generally review[s]" the refusal to dismiss an indictment for abuse of discretion, but it reviews the determination of a selective prosecution claim for clear error because it "is essentially a factual inquiry." United States v. Jones, 399 F.3d 640, 644 (6th Cir. 2005).

To resolve any confusion, we hold that when reviewing a selective prosecution claim, we review legal questions de novo and factual findings for clear error. Cf. McGlashan, 78 F.4th at 5-6; United States v. Bucci, 582 F.3d 108, 114-15 (1st Cir. 2009) (applying abuse-of-discretion review to a claim of vindictive prosecution, reviewing factual findings for clear error and legal determinations de novo). As explained in the following section, a successful claim of selective prosecution requires showing that similarly situated individuals were not prosecuted. Armstrong,

517 U.S. at 465. We, like the Sixth Circuit, have previously noted that "determining who constitutes a similarly situated individual" is a "fact-intensive inquiry." Lewis, 517 F.3d at 24 (citing Armstrong, 517 U.S. at 466); see Jones, 399 F.3d at 644. Therefore, much of our review will be for clear error of factual findings.

We turn to explaining what must be shown for a selective prosecution claim to succeed.

2. Legal Standard

In general, United States Attorneys have "'broad discretion' to enforce the Nation's criminal laws." Armstrong, 517 U.S. at 464 (quoting Wayte v. United States, 470 U.S. 598, 607 (1985)). This discretion recognizes that United States Attorneys "are designated by statute as the President's delegates to help him discharge his constitutional responsibility to 'take Care that the Laws be faithfully executed.'" Id. (quoting U.S. Const., art. II, § 3). Prosecutorial decisions are supported by a "presumption of regularity." Id. (quoting United States v. Chem. Found., Inc., 272 U.S. 1, 14 (1926)). In part, this judicial deference is due to "an assessment of the relative competence of prosecutors and courts." Id. at 465.

But prosecutorial discretion is constrained by the Constitution. Id. at 464. As relevant here, the Fifth Amendment forbids deciding whether to prosecute "based on 'an unjustifiable

standard such as race, religion, or other arbitrary classification.'" Id. (quoting Oyler v. Boles, 368 U.S. 448, 456 (1962)); see also Bolling v. Sharpe, 347 U.S. 497, 499-500 (1954) (holding that the Due Process Clause of the Fifth Amendment contains an equal protection component).

"In order to dispel the presumption that a prosecutor has not violated equal protection, a criminal defendant must present 'clear evidence to the contrary.'" Armstrong, 517 U.S. at 465 (quoting Chem. Found., 272 U.S. at 14-15). Making out a claim of selective prosecution draws on "ordinary equal protection standards": the defendant must show discriminatory effect and discriminatory purpose. Id. (quoting Wayte, 470 U.S. at 608).

To "establish a discriminatory effect in a race case, the claimant must show that similarly situated individuals of a different race were not prosecuted." Id. "A similarly situated offender is one outside the protected class who has committed roughly the same crime under roughly the same circumstances but against whom the law has not been enforced." Lewis, 517 F.3d at 27 (citing Armstrong, 517 U.S. at 469). When the district court is determining the pool of similarly situated offenders, "no fact should be omitted to make [the pool] out completely." Id. (emphasis omitted) (quoting Armstrong, 517 U.S. at 466). In other words, "a district court should assess every material fact in rendering its judgment as to which offenders should be deemed

similarly situated," because many factors -- including "the comparability of the crimes, the similarities in the manner in which the crimes were committed, the relative efficacy of each prosecution as a deterrent, and the equivalency of the evidence against each prospective defendant" -- may legitimately "influence the government's decision to prosecute one individual but not another." Id.

To establish discriminatory purpose, the claimant must show "that the decisionmaker . . . selected or reaffirmed a particular course of action at least in part 'because of,' not merely 'in spite of,' its adverse effects upon an identifiable group." Wayte, 470 U.S. at 610 (alteration in original) (quoting Pers. Adm'r of Mass. v. Feeney, 442 U.S. 256, 279 (1979)). This requires "more than . . . intent as awareness of consequences." Id. (alteration in original) (quoting Feeney, 442 U.S. at 279).

3. Background and Arguments

The district court rejected the selective prosecution claim because Yu failed to present "clear evidence" of discriminatory effect.⁶ Adopting the reasoning of its earlier order reserving decision on Yu's motion to dismiss, the district court acknowledged that Yu had listed civil trade secret cases that the government did not prosecute criminally as well as a case

⁶ Yu does not appeal the district court's decision to deny him discovery on his selective prosecution claim.

where ADI pursued a civil lawsuit against non-Chinese defendants. But these comparators were not sufficiently similar, according to the district court. The district court drew a distinction between general trade secret theft against American companies, and trade secret theft where, as here, a party allegedly violated export controls or passed the stolen trade secrets on to a foreign entity. Revisiting Yu's motion to dismiss after his trial, the district court held that Yu had not presented "clear evidence" that "similarly situated individuals of a different race were not prosecuted," as required by Armstrong, 517 U.S. at 465.

We first delineate Yu's arguments regarding the discriminatory-effect prong of his selective prosecution claim. As he did before the district court, Yu points to a list of cases from Massachusetts federal and state courts, along with statistics and research studies that he says show disproportionately high rates of criminal prosecution for trade secret offenses against defendants of Chinese ethnicity.

In addition, he highlights three instances to serve as "control group" comparators. First, he points to a federal civil lawsuit brought by ADI against another company called MACOM concerning four former ADI employees, not of Chinese descent, who allegedly stole the same secrets about MMICs as Yu. According to Yu, the ex-employees faced no criminal or civil liability; instead, ADI sued their new employer, and the case quickly settled. Second,

Yu states that ADI and a company called Custom MMIC made "unlicensed 'exports' of GDS design files for 'controlled MMICs to foreign foundries for manufacture,'" but neither ADI nor the other company was criminally charged -- unlike Yu. Third, Yu alleges that the prosecution described various innocuous activities as "suspicious" when Yu did them but not when a prosecutorial witness allegedly did the same things.

We now move to Yu's arguments in support of the discriminatory-intent prong. As discussed in more detail in the selective enforcement section, Yu points to statements by President Trump and members of the Trump Administration. As relevant to his selective prosecution claim, Yu argues that these statements -- about the danger posed by the Chinese government and ethnically Chinese individuals stealing trade secrets from U.S. companies and the need to prioritize prosecutions accordingly -- are crucial context for understanding the decision to prosecute him. Yu notes that the day after the United States Attorney's Office decided to accept law enforcement's referral of his case, President Trump announced new tariffs on China and declared, regarding China, "We have a tremendous intellectual property theft problem." Yu points to post-indictment press releases and public communications that emphasized that Yu was "Chinese born." In addition, Yu highlights the prosecution's attempt to use a peremptory strike against one of two Asian

Americans among the group of potential jurors. The prosecutor was unable to articulate a reason for the strike and withdrew it after the district court asked why the prosecutor was "challeng[ing] one of the few Asian Americans on the panel." Finally, Yu notes a post-verdict press release lauding "the first-ever conviction following a criminal trial of this kind in the District of Massachusetts," which, according to Yu, demonstrates "a dramatic departure from how such disputes between technology companies and their former employees are typically addressed."

In response, the government focuses (as the district court did) on the discriminatory-effect prong, addressing several of the instances that Yu characterized as "control group" comparators to his own case. Addressing first the ADI case against MACOM, the government argues that Yu has not presented clear evidence that the former ADI employees in that case were similarly situated to him.⁷ In support, the government explains that those employees were caught in their attempt to take trade secret materials, so it was not entirely clear that those materials made it to MACOM. In the government's view, the quick settlement might indicate that there was little or weak evidence to support ADI's

⁷ The government also argues that, even though Yu described the requirements for a selective prosecution claim in detail and repeatedly cited Armstrong, we should consider his claim waived because he did not also quote Armstrong's "clear evidence" standard. We decline to adopt such an expansive view of our waiver rules.

allegations. In contrast, the government explains, Yu was caught only after he had converted and profited from the trade secrets he took, and there was evidence of illegal exports. Next, concerning Yu's assertion that ADI and Custom MMIC made unlicensed exports of GDS design files, the government argues that Yu has only asserted, but has no evidence, that these companies unlawfully exported the files. The government also distinguishes this situation from Yu's case, arguing that Custom MMIC's exported GDS files did not contain stolen trade secrets. Finally, the government addresses the list of Massachusetts civil trade secrets cases that Yu identifies by arguing that there is no evidence that the government knew about those defendants or that those defendants engaged in conduct comparable to Yu's.

Briefly addressing the discriminatory-purpose prong, the government casts the Trump Administration's focus on trade secret theft by China as a legitimate national security focus, rather than an intent to discriminate based on ethnicity. The government argues that Yu has not demonstrated that the potential disparate impact on people of Chinese ethnicity was a reason why the Executive Branch decided to focus on these prosecutions, as required to demonstrate discriminatory purpose under Wayte, 470 U.S. at 610. Instead, it characterizes any disparate impact as a permissible side effect of a legitimate attempt to target the threat of economic espionage by China. The government dismisses

the failed juror challenge and the post-indictment press releases as irrelevant to the decision to prosecute.

4. Analysis

We begin, as the district court did, with discriminatory effect. We find no clear error in the district court's findings, under Armstrong's "fact-intensive inquiry," Lewis, 517 F.3d at 24, that Yu's proffered comparators were not sufficiently similar. As the district court noted, Yu offered a list of civil lawsuits concerning trade secrets that the government did not criminally prosecute, but Yu did not show that those cases were similar to his in ways that were more specific than the general category of trade secrets. Specifically, the district court noted that Yu was charged with violating export controls and passing the stolen trade secrets on to a foreign entity. We do not discern any clear error in how the district court "configured the pool of similarly situated offenders." Id. at 28. Moreover, although the defense disputes the district court's findings, Yu cannot show "clear evidence" of the government declining to prosecute a similarly situated comparator who allegedly made unlicensed exports containing stolen trade secrets, or who allegedly passed stolen trade secrets to a foreign entity. Because the district court did not clearly err in its factual findings, we also detect no reason to disturb the district court's conclusion that Yu had not proffered the "clear evidence" that "similarly situated

individuals of a different race were not prosecuted," as required by Armstrong, 517 U.S. at 465.

We acknowledge the difficulty that a defendant in Yu's position faces in bringing forth evidence regarding similarly situated comparators. But this burden reflects the presumption of regularity that prosecutors are afforded, see Armstrong, 517 U.S. at 464-65, resulting from "the recognition that the decision to prosecute is particularly ill-suited to judicial review," Wayte, 470 U.S. at 607. We do not think that the district court erred in its application of the relevant law, which places a high burden on the party claiming selective prosecution.

Because we affirm the district court's decision based on the discriminatory-effect prong, we need not address the allegations of discriminatory purpose. See Armstrong, 517 U.S. at 465 (requiring both).

C. Selective Enforcement

We now move to Yu's claim that law enforcement singled him out for investigation due to his ethnicity, in violation of his equal protection rights.

1. Standard of Review

The First Circuit has not previously laid out a clear standard of review for the denial of a motion to dismiss an indictment due to selective enforcement. For the same reasons explained above regarding selective prosecution, we now clarify

that our typical standard of review for denials of a motion to dismiss an indictment applies to selective enforcement claims: "we review legal questions de novo[and] any relevant factual findings for clear error." McGlashan, 78 F.4th at 5-6; see also Alcaraz-Arellano, 441 F.3d at 1265 (reviewing denial of motion to dismiss indictment due to selective enforcement for abuse of discretion).

2. Legal Standard

"Selective enforcement occurs when police investigate people of one race but not similarly[]situated people of a different race." Conley v. United States, 5 F.4th 781, 789 (7th Cir. 2021). Selective enforcement, like selective prosecution, violates equal protection principles. See Oyler, 368 U.S. at 456; Whren v. United States, 517 U.S. 806, 813 (1996) ("[T]he Constitution prohibits selective enforcement of the law based on considerations such as race" as a violation of equal protection.). Because the claim is derived from equal protection, it also requires showings of discriminatory effect and discriminatory purpose. See Flowers v. Fiore, 359 F.3d 24, 35 (1st Cir. 2004) (requiring that a plaintiff claiming selective enforcement "present evidence that he was treated differently from similarly situated [comparators] and that the action taken against him was motivated, at least in part, by his race"); see also Conley, 5 F.4th at 789 ("As equal protection claims, both selective

prosecution and selective enforcement require proof 'that the defendants' actions had a discriminatory effect and were motivated by a discriminatory purpose.'" (quoting Chavez v. Ill. State Police, 251 F.3d 612, 635-36 (7th Cir. 2001))).

A party claiming selective enforcement "can demonstrate discriminatory effect by naming a similarly situated individual who was not investigated or through the use of statistical or other evidence which 'address[es] the crucial question of whether one class is being treated differently from another class that is otherwise similarly situated.'" Farm Lab. Org. Comm. v. Ohio State Highway Patrol, 308 F.3d 523, 534 (6th Cir. 2002) (alteration in original) (quoting Chavez, 251 F.3d at 638); see also Conley, 5 F.4th at 796 ("As a general matter, statistics can be 'a useful tool' that can establish discriminatory effect and provide powerful evidence of discriminatory intent if race can be isolated from other confounding variables." (quoting United States v. Barlow, 310 F.3d 1007, 1011 (7th Cir. 2002))). The familiar Wayte standard applies for showing discriminatory purpose: that the relevant decision was made "at least in part 'because of,' not merely 'in spite of,' its adverse effects upon an identifiable group." 470 U.S. at 610 (quoting Feeney, 442 U.S. at 279).

Several circuits have considered which evidentiary standard to apply to selective enforcement claims. The Third and Fourth Circuits, in cases that did not directly raise that issue,

extended Armstrong's "clear evidence" requirement to selective enforcement claims. See Armstrong, 517 U.S. at 465; United States v. Washington, 869 F.3d 193, 214 (3d Cir. 2017) ("A defendant challenging a criminal prosecution at either the law enforcement or prosecution inflection points must provide 'clear evidence' of discriminatory effect and discriminatory intent [or purpose]."); United States v. Mason, 774 F.3d 824, 830 (4th Cir. 2014) ("In light of 'the great danger of unnecessarily impairing the performance of a core executive constitutional function,' petitioners must demonstrate 'clear evidence' of racially animated selective law enforcement." (quoting United States v. Olvis, 97 F.3d 739, 743 (4th Cir. 1996))). The Ninth and Tenth Circuits have not weighed in explicitly but appear to approve of the clear evidence standard. See Alcaraz-Arellano, 441 F.3d at 1264 (describing the standard of proof as "demanding" and citing Armstrong, 517 U.S. at 463); Lacey v. Maricopa Cnty., 693 F.3d 896, 920 (9th Cir. 2012) (same). The Seventh Circuit, in contrast, when squarely faced with the question of which evidentiary standard to apply in Conley, adopted the preponderance of the evidence standard, which is the standard generally applied to equal protection claims. 5 F.4th at 789-90; see also id. at 790-96 (explaining its decision in detail).

When deciding Yu's selective enforcement claim, the district court's reasoning coincided with that of the Seventh

Circuit; it concluded "that a claim of selective enforcement is not governed by Armstrong and may be established by a fair preponderance of the evidence." On appeal, the government maintains that the district court should have applied the clear evidence standard but argues that we need not decide this issue because -- as the district court held -- Yu cannot meet the lower standard.

The district court's decision that selective enforcement claims may be proven by a preponderance of the evidence presents a legal issue that we review de novo. McGlashan, 78 F.4th at 5-6; see Conley, 5 F.4th at 789.

Armstrong's "clear evidence" standard is required to rebut "'the presumption of regularity [that] supports' [United States Attorneys'] prosecutorial decisions." 517 U.S. at 464 (citation modified) (quoting Chem. Found., 272 U.S. at 14-15). We acknowledge that federal law enforcement falls under the Executive Branch, and, like prosecutors, law enforcement officers necessarily exercise discretion. See id. But courts exercise greater oversight over the decisions of law enforcement officers than those of prosecutors. Conley, 5 F.4th at 791. Unlike prosecutors, law enforcement agents regularly testify in courts and often must "justify their tactics." Id. Law enforcement officers also may be held civilly liable for alleged constitutional violations to a greater extent than prosecutors. See id. at 793.

Prosecutors are granted absolute immunity from claims for damages. See Imbler v. Pachtman, 424 U.S. 409, 427 (1976) (absolute civil immunity for actions taken in the prosecutorial role). But law enforcement officers receive qualified immunity, a lower level of protection from civil claims for damages. See Conley, 5 F.4th at 793; Kalina v. Fletcher, 522 U.S. 118, 126-27 (1997) (holding that prosecutors receive only qualified immunity when "perform[ing] the investigative functions normally performed by a detective or police officer" and noting that "the senior law enforcement official in the Nation -- the Attorney General of the United States -- is protected only by qualified, rather than absolute, immunity when engaged in the performance of national defense functions rather than prosecutorial functions"). Because law enforcement officers are subject to greater judicial scrutiny, we conclude that the reasoning laid out in Armstrong, requiring "clear evidence" that a prosecutor has violated equal protection, does not extend to selective enforcement claims. Cf. 517 U.S. at 465. We agree with the district court and the Seventh Circuit that selective enforcement claims must be proven only by a preponderance of the evidence.⁸

⁸ We also agree with the Seventh Circuit that applying a preponderance standard does not necessarily create a circuit split, since other circuits that have "cited Armstrong's clear-evidence standard when assessing selective-enforcement claims" have "invoked Armstrong in passing without specifically rejecting a preponderance standard." Conley, 5 F.4th at 796 n.4.

3. Background and Arguments

After allowing limited discovery on the selective enforcement claim and hearing oral argument, the district court concluded that Yu had failed to meet his burden by a preponderance of the evidence and denied his motion to dismiss the indictment. The district court found Yu's motion "troubling" because "there [was] not insignificant evidence" of "not explicit discrimination against Mr. Yu, but implicit bias based upon his ethnic heritage." The district court also stated that the fact that Yu was from China "played a role in part in what happened here." The district court noted a rise in anti-Asian racism in the United States since 2016. However, the district court deferred to the Executive Branch's decision to prioritize the threat of U.S. intellectual property theft by China and explained that this deference was particularly appropriate in the areas of national security and foreign affairs. The district court concluded that even if Yu were not from China or of Chinese descent, law enforcement officers likely would have investigated his possession of stolen MMIC designs, which have potential military uses and are manufactured in Taiwan.

On appeal, in making the case for discriminatory effect, Yu points to the same evidence marshalled for his selective prosecution claim: the civil lawsuits that he contends show that non-Chinese people were not investigated despite their similar conduct to the allegations against him. Yu emphasizes the MACOM

case, in which former ADI employees stole trade secrets that included MMIC design files but were apparently not investigated.

Regarding discriminatory purpose, Yu points to the Department of Justice's statements of intention to aggressively prosecute China's efforts to steal trade secrets from the United States. Yu quotes then-Massachusetts U.S. Attorney Andrew Lelling, at that time one of five members of the Department of Justice's China Initiative Steering Committee, as saying, "[T]hat rival nation [that is trying to steal U.S. technology] is made up almost exclusively of Han Chinese. And so, unfortunately, a lot of our targets are going to be Han Chinese. If it were the French government targeting U.S. technology, we'd be looking for Frenchmen."

Yu argues that law enforcement in his case overreacted to two anonymous "tips" because agents assumed, based on his ethnicity, that he had a nexus to China. For example, in a "Defense Counterintelligence and Security Agency" report, investigators categorized one of these tips as "foreign intelligence" because Yu was "reasonably believed" to be "acting on behalf of[] a foreign power." The FBI similarly categorized Yu's open case as "foreign counterintelligence" related to China. The Department of Homeland Security described his case as "significant" and listed it, among others, in a memo about "[t]he Chinese [t]hreat." Law enforcement noted that Yu had visited China recently and that he had graduated

from Tsinghua University, one of the top universities in China, which one report described as "actively support[ing] numerous Chinese military programs and research[ing] subjects of military interest." Yu characterizes this as "suspicion by association," comparing it to suggesting that every graduate of MIT is an "agent" of the U.S. government.

Yu argues that the district court committed legal error when it denied his motion to dismiss for selective enforcement after effectively making, in Yu's description, a factual finding of implicit bias. Yu contends that based on this factual finding, the district court should have concluded that law enforcement referred Yu for prosecution at least in part "because of" his ethnicity, demonstrating discriminatory purpose under Wayte, 470 U.S. at 610. Yu also contends that the district court clearly erred in finding no "explicit discrimination" (in the district court's words) in light of Yu's evidence.

Regarding discriminatory effect, the government first argues that Yu failed to establish his case using statistics because he did not identify similarly situated non-Chinese people in possession of stolen trade secrets whom the agents knew about and declined to investigate. Second, the government argues that even after receiving discovery, Yu failed to show that the investigators in his case would not have opened the case or referred it for prosecution if not for his ethnicity. The

government disagrees that the district court made a factual finding of discriminatory effect, arguing that its statement that Yu's ethnicity "played a role in part in what happened here" did not rise to a finding of but-for causation.⁹ The government also argues that, based on the evidence, the district court did not clearly err in finding that law enforcement would have investigated someone with Yu's conduct and ties to China¹⁰ who was not of Chinese ethnicity.

Regarding discriminatory purpose, the government maintains that it was legitimately concerned about economic espionage by China. Therefore, the government claims, it was also legitimate to investigate someone with Yu's ties to China who had allegedly stolen trade secrets that contained "sensitive technology." The government argues that the district court's use

⁹ Discussing causation in the context of discriminatory effect confuses the issues. Causation fits more squarely within the discriminatory-purpose analysis. See Wayte, 470 U.S. at 610 (articulating that the discriminatory-purpose standard requires a decisionmaker to "select[] or reaffirm[] a particular course of action at least in part 'because of,' not merely 'in spite of,' its adverse effects upon an identifiable group" (quoting Feeney, 442 U.S. at 279)).

¹⁰ Specifically, the government points to evidence that Yu was actively seeking to do business in China, including evidence that Yu mentioned that he had an agent in China; that Yu asked a contact in China to promote the Tricon website because he was "trying to see if [he] can expand to China"; and, in response to his contact writing him to "[h]urry up, return to China and start a business," that Yu responded that he "will definitely return to serve the country" "when [he is] ready."

of the term "implicit bias" does not rise to what the government describes as Wayte's requirement that discriminatory intent be "deliberate[]" and "purpose[ful]." See 470 U.S. at 608. Finally, the government argues that the fact that Yu's ties, "upon further investigation[,] turned out not to extend to the Chinese government does not retroactively invalidate the investigation"; nor was the government required to end its prosecution of the federal crimes it uncovered even though it "did not find evidence of the feared economic espionage crime."

4. Analysis

Although the district court did not delineate its conclusions in terms of discriminatory effect and purpose, its reasoning encompassed both elements. Because we find no clear error in the district court's factual findings undergirding its determination that there was no discriminatory effect, we affirm. See McGlashan, 78 F.4th at 5-6.

The district court effectively concluded that Yu failed to meet his burden because he did not show that "one class [was] being treated differently from another class that [was] otherwise similarly situated." See Farm Lab. Org. Comm., 308 F.3d at 534 (quoting Chavez, 251 F.3d at 638). The required analysis is two-fold: the proffered comparators must be both similarly situated and treated differently. See id. (emphases added); see also Flowers, 359 F.3d at 35. In detailing its factual findings, the

district court noted several factors that weighed importantly in its decision. First, the MMICs at issue in Yu's case had a "potential military use." Second, considering foreign policy concerns over China's involvement in the theft of "U.S. intellectual property, industrial secrets, and personal data," the officers investigating Yu's case "rationally . . . perceived . . . a potential threat with respect to a foreign nation." And third, Yu's case was affirmatively tipped off to law enforcement.

Regarding the technologies at play and the connections to China among Yu's proffered comparators, Yu's point that the MACOM case, like his, involved "sensitive military technologies" and a company with a "presence in China" is well-taken. Indeed, this suggests some similarities between Yu's case and his comparators. But Yu does not show (or even argue to us on appeal) that the government knew about these comparators and then declined to investigate. See Farm Lab. Org. Comm., 308 F.3d at 534. This is fatal to his claim.

Instead, Yu argued (and only before the district court) that "investigators . . . could have, and should have[] known" about MACOM's theft of trade secrets. Yu therefore has not shown that these comparators are similarly situated, i.e., that they "ha[ve] committed roughly the same crime under roughly the same circumstances." Lewis, 517 F.3d at 27. Nor has he shown that law enforcement treated them differently by purposefully opting not to

investigate. Id. In Yu's case, in contrast, as the district court explained, the limited information and evidence available to the government at the pre-indictment stage supported opening and continuing an investigation into his actions. We therefore see no reason to disturb the district court's conclusion that there was no discriminatory effect here.

Because we affirm the district court's holding of no discriminatory effect, we need not analyze discriminatory purpose.¹¹ See Flowers, 359 F.3d at 35 (requiring both prongs for a successful claim of selective enforcement).

IV. Conclusion

For the reasons above, we **affirm** the conviction.

¹¹ Because we affirm the district court's denials of Yu's selective enforcement and prosecution claims, we need not decide whether the correct remedy for successful claims would be dismissal of the criminal proceedings.