ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES, Plaintiffs, v. ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California. Defendant.	Case No. 19STCV27561 **WRITTEN EXCHANGE OF REQUIRED EXPERT WITNESS INFORMATION AND EXPERT WITNESS DECLARATION** **(CCP § 2034.260)**

EXPERT WITNESS INFORMATION

The name and address of each person whose expert opinion Plaintiff expects to offer in evidence at the trial are:

Jonathan Klick, Ph.D., J.D.
1311 Hagys Ford Road
Penn Valley, PA 19072
(610) 592-4179

[1] Dr. Shirley N. Weber is the current Secretary of State.

EXPERT WITNESS DECLARATION

I, Robert Patrick Sticht, declare:

1. I am the attorney of record for Plaintiffs Robin Crest, Earl De Vries, and Judy De Vries. I make this declaration as required by Code of Civil Procedure § 2034.260(c).

2. I am informed and believe the following facts are true about Jonathan Klick, Ph.D., J.D.

Qualifications

Mr. Klick earned a Ph.D. in economics from George Mason University in 2002 and a J.D. from the George Mason University School of Law in 2003. He was hired as an assistant professor of law in 2004 and was named the Jeffrey A. Stoops Professor of Law and Economics in 2005. He was hired as a full professor of law at the University of Pennsylvania in 2008 and continue in that role to the present. He has also held the Erasmus Chair of Empirical Legal Studies at Erasmus University Rotterdam since 2009, where he teaches courses in empirical research design and causal inference to masters and doctoral students in law and economics.

Mr. Klick was appointed the Maurice R. Greenberg Visiting Professor at the Yale Law School for the Fall 2013 semester, and he has held other visiting professor positions at the following law schools in the U.S.: Columbia University, Northwestern University, and the University of Southern California. Mr. Klick was appointed the inaugural Dean's Distinguished Fellow at the Villanova University Charles Widger School of Law in 2017.

Mr. Klick has been a visiting professor of economics at the University of Canterbury in Christchurch New Zealand, where he taught graduate-level econometrics. He has taught as a visiting professor in the economics departments or law schools at the following foreign universities: Waseda University (Tokyo, Japan), University of Ljubljana (Ljubljana, Slovenia), Bar-Ilan University (Ramat Gan, Israel), Goethe-Universität Frankfurt(Frankfurt, Germany), and the University of Hamburg (Hamburg, Germany). He has taught courses on empirical methods and causal inference at the Max Planck Institute (Hamburg and Jena, Germany) and at the Swiss National Bank's Study Center (Gerzensee, Switzerland).

In addition to classes on econometrics, statistics, and causal inference, of relevance to this declaration, Mr. Klick has taught corporate law at Florida State University, the University of

Pennsylvania, and Waseda University. He has also taught expert and scientific evidence law at the University of Pennsylvania, as well as to federal and state judges through workshops sponsored by centers at George Mason University.

Mr. Klick previously served as a senior economist for the Rand Corporation (Santa Monica, CA), and I have been the co-editor of the International Review of Law and Economics since 2012. He has taught empirical methods and causal inference to international, federal, and state judges, as well as federal and state regulators and law professors at least annually for the Law and Economics Center of George Mason University since 2009. He has also taught empirical methods and causal inference regularly to international regulators for the Global Antitrust Institute.

Mr. Klick's research includes work in applied econometrics and focuses on using statistical tools to identify the causal effects of laws and regulations on individual behavior. His work has been published in numerous peer-reviewed journals in economics, law, psychology, and a host of other fields. Mr. Klick was chosen to write the chapter on empirical law and economics for the Oxford Handbook of Law and Economics (2017).[2] Also of relevance here, he has published methodological papers on using statistical methods to draw causal inferences in the event study framework used extensively in corporate finance. Mr. Klick has also published articles[3] on the reliability of work using the implicit association test (used to identify unconscious bias) in one of the American Psychological Association's journals.

Additional details about Mr. Klick's background are provided in his CV which is attached as Exhibit A.

General Substance of Testimony This Expert Is Expected To Give

Declarations offered in support of the Secretary of State's motion for summary judgment assert that women are underrepresented on the boards of directors of firms headquartered in California, and this underrepresentation is due to discrimination.[4] These declarations also claim that research

[2] "Empirical Law and Economics," (with Jonah Gelbach) Oxford Handbook of Law and Economics (Oxford University Press, 2017).

[3] Hart Blanton, James Jaccard, Jonathan Klick, Barbara Mellers, Gregory Mitchell, and Philip Tetlock (2009), "Strong Claims and Weak Evidence: Reassessing the Predictive Ability of the IAT," Journal of Applied Psychology, 94(3): 567-582. Hart Blanton, James Jaccard, Jonathan Klick, Barbara Mellers, Gregory Mitchell, and Philip Tetlock (2009), "Transparency Should Trump Trust," Journal of Applied Psychology, 94(3): 598-603.

[4] *See*, for example, Declaration of Alison Konrad, Ph.D., in support of Secretary of State's

demonstrates that women have a positive effect on many different aspects of corporate performance.[5]

In Mr. Klick's expert opinion, the evidence offered in these declarations supporting the Secretary's motion for each of these points (underrepresentation of women on boards, discrimination as the cause of this underrepresentation, and that research shows a differential benefit of appointing women, as opposed to men, in terms of firm performance) is deficient and unreliable.

Mr. Klick will analyze the arguments and the evidence provided in three of the declarations provided in support of the Secretary of State's motion (Alison Konrad, Cindy Schipani, and Jessica Grounds) in detail. He will provide a general overview of his analysis of the underrepresentation claim, the discrimination claim, and the beneficial effects claim. Mr. Klick also will provide a basic primer in statistics and causal inference to aid in understanding the evidence provided in the declarations. After analyzing the declarations, Mr. Klick will provide a general conclusion.

Additional details about the substance of Mr. Klick's testimony may be found in his declaration in support of Plaintiffs' opposition to Defendant's motion for summary judgment.

Fee

Mr. Klick's hourly fee for providing deposition testimony is $800 per hour, and his daily fee for providing deposition testimony is $800 per hour, plus expenses (airfare, lodging, meals and direct expenses).

3. Each expert identified in this declaration has agreed to testify at the trial and will be sufficiently familiar with the pending action to submit to a meaningful oral deposition concerning any opinion and its basis.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct except for matters stated on information and belief, and as to those matters I believe it to be true. Executed September 7, 2021 at Los Angeles, California.

/s/ Robert Patrick Sticht.
ROBERT PATRICK STICHT

Motion for Summary Judgment ("Konrad Decl."), at paragraphs 10 and 11.

[5] *See*, for example, Konrad Decl., at paragraph 12.

PROOF OF SERVICE

I, Robert Patrick Sticht, declare as follows:

I am a citizen of the United States, over the age of eighteen years and not a party to the above-entitled action. I am employed at Judicial Watch, Inc., 425 Third Street SW, Suite 800, Washington DC 20024.

On September 7, 2021, I served the following document(s):

WRITTEN EXCHANGE OF REQUIRED EXPERT WITNESS INFORMATION AND EXPERT WITNESS DECLARATION

on the following persons:

Lara Haddad
Deputy Attorney General
California Department of Justice
300 South Spring Street, Suite 1702
Los Angeles CA 90013
Attorneys for Alex Padilla

[ ] BY UNITED STATES MAIL: Following ordinary business practices, I caused true and correct copies of the above document(s) to be sealed in addressed envelope(s) and placed for collection and mailing with the United States Postal Service. I am readily familiar with the firm's practices for collecting and processing mail. In the ordinary course of business, the sealed envelope(s) that were placed for collection would be deposited, postage prepaid, with the United States Postal Service that same day.

[ ] BY ELECTRONIC MAIL: Based on a court order or an agreement of the parties to accept electronic service, I caused the document(s) to be served electronically through One Legal in portable document format ("PDF") Adobe Acrobat.

[X] BY EMAIL: I caused the document(s) to be served electronically to lara.haddad@doj.ca.gov in PDF format.

I declare under penalty of perjury pursuant to the laws of the State of California that the foregoing is true and correct.

Executed September 7, 2021, at Los Angeles, California.

/s/ Robert Patrick Sticht.
ROBERT PATRICK STICHT

JONATHAN KLICK

University of Pennsylvania Law School, 3501 Sansom Street, Philadelphia Pennsylvania 19104-6204
215.746.3455 ● 215.573.2025 (fax) ● jklick@law.upenn.edu ● www.law.upenn.edu/faculty/jonathan-klick

EDUCATION

J.D., *George Mason University School of Law*, Arlington Virginia, Awarded May 2003 (*cum laude*)
Robert A. Levy Fellow in Law and Liberty (Tuition Waiver and Stipend); Whitney Writing Prize

Ph.D., Economics, *George Mason University*, Fairfax Virginia, Defended November 2001
Fields: Public Choice, Industrial Organization and Public Policy

M.A., Economics, *University of Maryland at College Park*, Awarded May 1999
Fields: Public Finance, Political Economy of Growth & Income Distribution, Microeconometrics

B.S., Economics, *Villanova University*, Villanova Pennsylvania, Awarded May 1997 (*summa cum laude)*
Villanova University Presidential Scholar and British Marshall Scholarship Finalist (100 nationally)

PROFESSIONAL EXPERIENCE

University of Pennsylvania: Visiting Professor of Law (Fall 2007); Professor of Law (Summer 2008 – Present).

Erasmus University Rotterdam: Erasmus Chair of Empirical Legal Studies (2009 – Present).

Waseda University: Visiting Law Professor (Summer 2016).

Yale Law School: Maurice R. Greenberg Visiting Professor (Fall 2013).

University of Ljubljana Faculty of Economics: Visiting Professor (Summer 2013).

Bar Ilan University Faculty of Law: Visiting Professor (December 2012).

University of Canterbury Department of Economics and Finance: Erskine Visitor (Summer 2010).

Property and Environment Research Center: Julian Simon Fellow (Summer 2009); Lone Wolf Fellow (Summer 2012).

The RAND Corporation, Institute for Civil Justice: Senior Economist (2007 – 2009).

Northwestern University Searle Center: Visiting Scholar (January 2009); Instructor in Judicial Education Program (Spring 2009 – Spring 2010); Senior Economist (Spring 2009 – Spring 2010).

University of Hamburg: Visiting Professor of Law and Economics (Summer 2008, 2010, 2011).

Columbia Law School: Visiting Professor (Spring 2008).

University of Southern California School of Law: Visiting Professor (August/September 2007).

Northwestern University School of Law: Visiting Professor (November 2006).

Florida State University: Assistant Professor of Law (Summer 2004 – Summer 2007); Jeffrey A. Stoops Professor of Law (Summer 2005 – Spring 2008); Associate Professor (August 2007 – Spring 2008); Courtesy Professor of Economics (Summer 2004 – Spring 2008).

TEACHING EXPERIENCE

Antitrust: Penn; Waseda
Corporate Finance: Florida State; Columbia
Corporations/Business Associations: Penn; Florida State; Waseda
Econometrics (graduate level): Canterbury
Econometrics (undergraduate level): George Mason
Empirical Law and Economics: Penn; Florida State; Erasmus; Hamburg; Bar Ilan; Goethe-Universität Frankfurt; Max Planck Research School; Ljubljana; Study Center Gerzensee; Lucerne Graduate Academy
Evidence Based Crime Prevention (graduate level): Penn Criminology Department
Expert Evidence: Penn
Law and Economics: Penn; Florida State; Villanova University
Law and Economics of the Firm: Penn (JD/MBA)
Micro/Macro: Prince George's County Community College; University of Maryland; George Mason
Statistics for Lawyers: Penn; Florida State; Max Planck Institute (Hamburg)
Torts: Penn; Yale

JONATHAN KLICK

REFEREED PUBLICATIONS

- "Sobering Up After the Seventh Inning: Alcohol and Crime Around the Ballpark," (with John MacDonald) *Journal of Quantitative Criminology*, 37(3): 813-834 (2021).
- "The Ineffectiveness of 'Observe and Report' Patrols on Crime," (with Marco Fabbri) *International Review of Law and Economics*, 65: 105972 (2021).
- "Deterrence and Liability for Intentional Torts," (with John MacDonald) *International Review of Law and Economics*, 63: 105926 (2020).
- "Medicare Secondary Payer and Settlement Delay," (with Eric Helland) *Journal of Empirical Legal Studies*, 15(2): 356-377 (2018).
- "What Should Empirical Legal Economists Do?" *Journal of Institutional and Theoretical Economics*, 174 (1): 29-33 (2018).
- "Reducing False Guilty Pleas and Wrongful Convictions Through Exoneree Compensation," (with Murat Mungan) *Journal of Law and Economics*, 59(1): 173-189 (2016).
- "The Effect of Private Police on Crime: Evidence from a Geographic Regression Discontinuity Design," (with John MacDonald and Ben Grunwald) *Journal of the Royal Statistical Society Series A*, 179(3): 831-846 (2016).
- "The Developmental Effect of State Alcohol Prohibitions at the Turn of the 20th Century," (with Mary Evans, Eric Helland, and Ashwin Patel) *Economic Inquiry*, 54(2): 762-777 (2016).
- "Preemption in the Rehnquist and Roberts Courts: An Empirical Analysis," (with Michael Greve, Michael Petrino, and J.P. Sevilla) *Supreme Court Economic Review*, 23: 353-392 (2015).
- "The Effect of Any Willing Provider and Freedom of Choice Laws on Prescription Drug Expenditures," (with Joshua Wright) *American Law and Economics Review*, 17(1): 192-213 (2015).
- "Discounting and Criminals' Implied Risk Preferences," (with Murat Mungan) *Review of Law and Economics*, 11(1): 19-23 (2015).
- "Appellate Caseload and the Switch to Comparative Negligence," (with Jef DeMot and Michael Faure) *International Review of Law and Economics*, 42(1): 147-156 (2015).
- "Forfeiture of Illegal Gains, Attempts, and Implied Risk Preferences," (with Murat Mungan) *Journal of Legal Studies*, 43(1): 137-153 (2014).
- "Valid Inference in Single Firm, Single Event Studies," (with Jonah Gelbach and Eric Helland) *American Law and Economics Review*, 15(2): 495-541 (2013).
- "The Effect of Abortion Liberalization on Sexual Behavior: International Evidence," (with Sven Neelsen and Thomas Stratmann) *American Law and Economics Review*, 14(2): 457-487 (2012).
- "Does Anyone Get Stopped at the Gate? An Empirical Analysis of State Adoption of the *Daubert* Trilogy," (with Eric Helland) *Supreme Court Economic Review*, 20: 1-33 (2012).
- "The Effect of Contract Regulation on Franchising," (with Bruce Kobayashi and Larry Ribstein) *Journal of Institutional and Theoretical Economics*,168(1), 38-53 (2012).
- "The Perils of Empirical Work on Institutions," *Journal of Institutional and Theoretical Economics*, 166(1): 166-170 (2010).
- "Strong Claims and Weak Evidence: Reassessing the Predictive Ability of the IAT," (with Hart Blanton, James Jaccard, Barbara Mellers, Gregory Mitchell, and Philip Tetlock) *Journal of Applied Psychology*, 94(3): 567-582 (2009).
- "Transparency Should Trump Trust," (with Hart Blanton, James Jaccard, Barbara Mellers, Gregory Mitchell, and Philip Tetlock) *Journal of Applied Psychology*, 94(3): 598-603 (2009).
- "Differential Victimization: Efficiency and Fairness Justifications for the Felony Murder Rule," (with Nuno Garoupa) *Review of Law and Economics*, 4(1): 407-418 (2008).
- "Social Networks, Self Denial, and Median Preferences: Conformity as an Evolutionary Strategy," (with Francesco Parisi) *Journal of Socio-Economics*, 37(4): 1319-1327 (2008).
- "Do Spa Visits Improve Health: Evidence from German Micro Data," (with Thomas Stratmann) *Eastern Economic Journal*: 34(3): 364-374 (2008).
- "Abortion Access and Risky Sex Among Teens: Parental Involvement Laws and Sexually Transmitted Diseases," (with Thomas Stratmann) *Journal of Law, Economics, and Organization*, 24(1): 2-21(2008).
- "Diabetes Treatments and Moral Hazard," (with Thomas Stratmann) *Journal of Law & Economics*, 50(3): 519-538 (2007).

REFEREED PUBLICATIONS (CONTINUED)

- "Medical Malpractice Reform and Physicians in High Risk Specialties," (with Thomas Stratmann) *Journal of Legal Studies*, 36(S2): S121-S142 (2007).
- "The Tradeoff Between Regulation and Litigation: Evidence from Insurance Class Actions," (with Eric Helland) *Journal of Tort Law*, 1(3): Article 2 (2007).
- "The Effect of Judicial Expedience on Attorney Fees in Class Actions," (with Eric Helland) *Journal of Legal Studies*, 36(1): 171-187 (2007).
- "Salvation as a Selective Incentive," *International Review of Law and Economics*, 26(1): 15-32 (2006).
- "A Law and Economics Perspective on Terrorism," (with Francesco Parisi and Nuno Garoupa) *Public Choice*, 128(1-2): 147-168 (2006).
- "The Two Dimensions of Regulatory Competition," (with Francesco Parisi and Norbert Schulz) *International Review of Law and Economics*, 26(1): 56-66 (2006).
- "Subsidizing Addiction: Do State Health Insurance Mandates Increase Alcohol Consumption?," (with Thomas Stratmann) *Journal of Legal Studies*, 35(1): 175-198 (2006).
- "Preemption in the Rehnquist Court: A Preliminary Empirical Assessment," (with Michael Greve), *Supreme Court Economic Review*, 14: 43-94 (2006).
- "Are Mental Health Insurance Mandates Effective?: Evidence from Suicides," (with Sara Markowitz) *Health Economics*, 15(1): 83-97 (2006).
- "Limited Autocracy," *Review of Law and Economics*, 1(2): 293-304 (2005).
- "Intra-Jurisdictional Tax Competition," (with Francesco Parisi) *Constitutional Political Economy*, 16(4): 387-395 (2005).
- "Using Terror Alert Levels to Estimate the Effect of Police on Crime," (with Alexander Tabarrok) *Journal of Law and Economics*, 48(1): 267-279 (2005).
- "Data Watch: Tort-Uring the Data," (with Alexander Tabarrok and Eric Helland) *Journal of Economic Perspectives*, 19(2): 207-220 (2005).
- "The IOM Report: Too Quick to Diagnose Bias," (with Sally Satel) *Perspectives in Biology and Medicine*, 48(1): S15-S25 (2005).
- "The Effect of Abortion Legalization on Sexual Behavior: Evidence from Sexually Transmitted Diseases," (with Thomas Stratmann) *Journal of Legal Studies*, 32(2): 407-434 (2003).
- "The Disunity of Unanimity," (with Francesco Parisi) *Constitutional Political Economy*, 14(2): 83-94 (2003).
- "The Differential Calculus of Consent," (with Francesco Parisi) *Journal of Public Finance and Public Choice*, 20(2-3): 115-123 (2002).
- "Do Dollars Make a Difference?: The Relationship Between Expenditures and Test Scores in Pennsylvania's Public Schools," *American Economist*, Vol. 44(1): 81-87 (2000).

LAW REVIEW PUBLICATIONS

- "Surveying the Not Yet Dead," UC Davis Law Review, 53(5): 2647-2654 (2020).
- "Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust," (with Joshua Wright, Elyse Dorsey, and Jan Rybnicek) *Arizona State Law Journal*, 51(1): 293-369 (2019).
- "The Logic and Limits of Event Studies in Securities Fraud Litigation," (with Jill Fisch and Jonah Gelbach) *Texas Law Review*, 96(3): 553-621 (2018).
- "The Wealth of Congress," *Harvard Journal of Law and Public Policy*, 40(3): 603-638 (2017).
- "The Value of the Right to Exclude: An Empirical Assessment," (with Gideon Parchomovsky) *University of Pennsylvania Law Review*, 165(4): 917-966 (2017).
- "Everything's Bigger in Texas Except the Medmal Settlements," (with Tom Baker and Eric Helland) *Connecticut Insurance Law Journal*, 22(1): 1-46 (2016).
- "Identifying Criminals' Risk Preferences," (with Murat Mungan) *Indiana Law Journal*, 91(3): 791-821 (2016).
- "Shleifer's Failure," *Texas Law Review*, 91(4): 899-909 (2013).
- "Recessions and the Social Safety Net: The Alternative Minimum Tax as a Counter-Cyclical Fiscal Stabilizer," (with Brian Galle) *Stanford Law Review*, 63(1): 187-246 (2010).

LAW REVIEW PUBLICATIONS (CONTINUED)

- "Federalism, Variation, and State Regulation of Franchise Termination," (with Bruce Kobayashi and Larry Ribstein) *Entrepreneurial Business Law Journal*, 3(2): 355-380 (2009).
- "Passive Discrimination: When Does It Make Sense to Pay Too Little?" (with Jonah Gelbach and Lesley Wexler) *University of Chicago Law Review*, 76(2): 797-857 (2009).
- "Agency Costs, Charitable Trusts, and Corporate Control: Evidence From Hershey's Kiss-Off," (with Robert Sitkoff) *Columbia Law Review*, 108(4): 749-838 (2008).
- "Mandatory Waiting Periods for Abortion and Female Mental Health," *Health Matrix*, 16(1): 183-208 (2006).
- "Government Regulation of Irrationality: Moral and Cognitive Hazards," (with Greg Mitchell) *Minnesota Law Review*, 90(6): 1620-1663 (2006).
- "Wealth, Utility, and the Human Dimension," (with Francesco Parisi) *NYU Journal of Law & Liberty*, 1(1): 590-608 (2005).
- "The Micro Foundations of Standard Form Contracts: Price Discrimination vs. Behavioral Bias," *Florida State University Law Review*: 32(2): 555-569 (2005).
- "Functional Law and Economics: The Search for Value-Neutral Principles of Law Making," (with Francesco Parisi) *Chicago-Kent Law Review*, 79(2): 431-450 (2004).
- "Econometric Analyses of U.S. Abortion Policy: A Critical Review," *Fordham Urban Law Journal*, 31: 751-782 (2004).

BOOK CONTRIBUTIONS, ETC.

- "Big Tech's Digital Robber Barons," Regulation, 44(3): forthcoming (2021).
- "Antitrust Enforcement and Inequality," (with Joshua Wright) *Distributional Impacts of Regulation*, forthcoming.
- Review of the Literature on Diversity on Corporate Boards, AEI Report (2021).
- "Is the Digital Economy Too Concentrated?" GAI Report on the Digital Economy (2020).
- "Empirical Analysis of Fiduciary Law," (with Max Schanzenbach) *Oxford Handbook of Fiduciary Law* (Oxford University Press, 2019).
- *History of Law and Economics*, editor with Henry Butler (Edward Elgar Publishing, 2018).
- "A Price for Injustice," (with Murat Mungan) *Regulation*, 40(2): 12-15 (2017).
- "Roam if You Want to?" (with Gideon Parchomovsky) *Regulation*, 40(1): 18-22 (2017).
- *Law and Economics of Federalism*, editor (Edward Elgar Publishing, 2017).
- "Empirical Law and Economics," (with Jonah Gelbach) *Oxford Handbook of Law and Economics* (Oxford University Press, 2017).
- "Infantilization by Regulation," (with Greg Mitchell) *Regulation*, 39(2): 32-37 (2016).
- "The Value of Training in Quantitative Methods for Judges," *Economic Evidence in EU Competition Law* (Intersentia, 2016).
- "Regulation and Litigation: Complements or Substitutes," (with Eric Helland) *The American Illness: Essays on the Rule of Law* (Yale University Press, 2013).
- "Why Aren't Regulation and Litigation Substitutes?: An Examination of the Capture Hypothesis," (with Eric Helland) *Regulatory Breakdown? The Crisis of Confidence in U.S. Regulation* (University of Pennsylvania Press, 2012).
- "Mobile Phones and Crime Deterrence: An Underappreciated Link," (with John MacDonald and Thomas Stratmann) *Handbook of Criminal Law* (Law and Economics Handbook Series, Edward Elgar, 2012).
- "Global Justice and Trade," (with Fernando Teson) *Global Justice and International Economic Law: Opportunities and Prospects* (Cambridge University Press, 2012).
- "Fire Suppression Policy, Weather, and Western Wildland Fire Trends: An Empirical Analysis," (with Jason Johnston) *Wildfire Policy: Law and Economics Perspectives* (RFF Press, 2012).
- "Abortion Access and Risky Sex," (with Thomas Stratmann) *Handbook of Family Law* (Law and Economics Handbook Series, Edward Elgar, 2011).
- "The Law and Economics of Regulatory Competition," *Production of Legal Rules, Encyclopedia of Law and Economics*, 2nd ed. (Edward Elgar, 2011).

BOOK CONTRIBUTIONS, ETC. (CONTINUED)

- "Legal Origins and Empirical Credibility," (with Eric Helland) *Does Law Matter? On Law and Economic Growth*, Ius Commune Europaeum 100 (Intersentia Publishers, 2011).
- *The Empirical Revolution in Law and Economics: Inaugural Lecture for Erasmus Chair in Empirical Law and Economics* (Eleven International Publishing, 2011).
- "Response to Reducing Soda Consumption," (with Eric Helland) *Regulation*, 34(2): 3 (2011).
- "Slim Odds," (with Eric Helland) *Regulation*, 34(1): 20-23 (2011).
- "The AMT's Silver Lining," (with Brian Galle), *Regulation*, 33(3): 24-29 (2010).
- "The Dangers of Letting Someone Else Decide," Slippery Slopes and the New Paternalism, Cato Unbound (2010).
- "Revealing Revealed Preferences," Slippery Slopes and the New Paternalism, Cato Unbound (2010).
- "Police, Prisons, and Crime," (with Alexander Tabarrok) *Law and Economics of Crime* (Edward Elgar Publishing, 2010).
- "A More Equitable and Efficient Approach to Insuring the Uninsurable," (with Eric Helland) *Our Fragmented Health Care System: Causes and Solutions* (Oxford University Press, 2010).
- "Terrorism," (with Nuno Garoupa and Francesco Parisi) *Criminal Law and Economics* (Edward Elgar Publishing, 2009).
- "Functional Law and Economics," (with Francesco Parisi) *Theoretical Foundations of Law and Economics* (Cambridge University Press, 2009).
- "What Drives the Passage of Damage Caps?" (with Catherine Sharkey) *Empirical Studies of Judicial Systems Around the Globe* (Institutum Jurisprudentiae, Academia Sinica, 2008).
- "Econometric Studies of Law," "Functional Law and Economics," "Multivariate Methods in Legal Studies," and "Formal Methods in Legal Scholarship," *Encyclopedia of Law and Society* (Sage Publications, 2007).
- *The Health Disparities Myth: Diagnosing the Treatment Gap* (with Sally Satel): AEI Press, 2006.
- "Are Doctors Biased?" (with Sally Satel) *Policy Review*, 136(April & May): 41-54 (2006).
- "First, Do No Harm . . ." (with Thomas Stratmann) *Regulation*, 26(1): 9 (2003).
- "Drug Re-Importation's No-Win Solution," *Regulation*, 25(1): 6-7 (2002).

PRESENTATIONS

- Keynote Address, Polish Association of Law and Economics Annual Meeting (September 2021).
- Penn Law Faculty Workshop (July 2021).
- George Mason Law and Economics Workshop (March 2021).
- Texas A&M Crime Workshop (August 2020).
- Penn Law Faculty Workshop (February 2020).
- Rotterdam Institute of Law and Economics Workshop (January 2020).
- Amsterdam Center for Law and Economics Workshop (January 2020).
- Georgetown Law and Economics Workshop (November 2019).
- George Mason Law and Economics Workshop (November 2019).
- Penn Antitrust Symposium (October 2019).
- FTC Hearing, Roundtable with State Attorneys General (June 2019).
- Instituto Tecnológico Autónomo de México Economics Department Seminar (April 2019).
- Instituto Tecnológico Autónomo de México Law School Seminar (April 2019).
- Rotterdam Institute of Law and Economics Seminar (February 2019).
- Tilburg University Economics Department Seminar (January 2019).
- Columbia University Law and Economics Seminar (October 2018).
- Herbert Smith Freehills Connected and Autonomous Vehicles Conference (April 2018).
- Erasmus University Young Scholars' Conference Keynote Speech (April 2018).
- Vanderbilt University Law School Seminar (March 2018).
- University of North Carolina Law School Seminar (March 2018).
- West Virginia University Economics Seminar (February 2018).
- George Mason Law Review Antitrust Symposium (February 2018).

PRESENTATIONS (CONTINUED)

- Washington & Lee Journal of Civil Rights and Social Justice Symposium (November 2017).
- Penn Program on Regulation, The Distribution of Regulatory Impacts in the US (October 2017).
- Bloomberg Government, Health Disparities in Medicare Bundled Payments (October 2017).
- Penn Law Faculty Workshop (September 2017).
- Conference on Empirical Legal Studies Asia, Advanced Empirical Methods (June 2017).
- Journal of Institutional and Theoretical Economics Conference (June 2017).
- Villanova University Law School Workshop (March 2017).
- Erasmus University Rotterdam, Experiments at the Crossroads of Law and Economics (March 2017).
- George Mason University, Philosophy, Politics, and Economics Workshop (February 2017).
- UCLA, Law and Economics Workshop (February 2017).
- Indiana University, Ostrom Workshop, Symposium on Natural Resource Governance (October 2016).
- University of Missouri School of Law, Paternalism Conference (October 2016).
- Notre Dame University, Law and Economics Workshop (September 2016).
- Waseda University, Symposium on the Determinants of Health and Healthcare Costs (July 2016).
- Hitotsubashi University, Institute of Economic Research (June 2016).
- American Law and Economics Association Annual Meeting (May 2016).
- Erasmus University Rotterdam, European Doctorate in Law and Economics Seminar (March 2016).
- University of Chicago, Law and Economics Workshop (February 2016).
- Hebrew University of Jerusalem, Law and Economics Workshop (January 2016).
- University of Virginia, Law and Economics Workshop (October 2015).
- University of Sassari, Institutions, Individual Behavior, and Economic Outcomes Workshop (June 2015).
- Chinese University of Political Science and Law, University Lecture (May 2015).
- Chinese University of Political Science and Law, Rise of the Regulatory State Conference (May 2015).
- Florida State University, Global Justice Seminar (February 2015).
- University of Texas, Law and Economics Workshop (November 2014).
- University of Bologna, Keynote Address, EDLE Meeting (November 2014).
- Rutgers Camden, Healthcare Entitlements Discussion (November 2014).
- University of Leeds, Keynote Address, Behavioral Approach to Law Conference (June 2014).
- Erasmus Experiments at the Crossroads of Law and Economics Workshop (April 2014).
- Cardozo School of Law, Faculty Workshop (March 2014).
- NYU Colloquium on Market Institutions and Economic Processes (February 2014).
- George Washington University Law School Faculty Workshop (February 2014).
- University of Toronto Law and Economics Workshop (February 2014).
- LEC Workshop for Law Professors on Risk, Injury, Liability, & Insurance (February 2014).
- NYU Law and Economics Workshop (January 2014).
- Yale Faculty Seminar (December 2013).
- American Law and Economics Association Annual Meeting (May 2013).
- Villanova University, Department of Economics (February 2013).
- Hospital of University of Pennsylvania, Radiology Department Seminar (January 2013).
- Law and Economics Center, Law and Economics of Contracts (January 2013).
- Florida State University College of Law Workshop (January 2013).
- Bar-Ilan University Faculty of Law Seminar (December 2012).
- University of Haifa Faculty of Law Seminar (December 2012).
- Conference on Empirical Legal Studies, Stanford University (November 2012).
- University of Texas Law School Law and Economics Seminar (October 2012).
- Max Planck Research School Uncertainty Topics Keynote Speech (October 2012).
- University of Ljubljana Faculty of Economics Seminar (October 2012).
- University of Pennsylvania Law School Faculty Seminar (October 2012).
- Georgetown University Law Center Law and Economics Workshop (September 2012).
- Property and Environment Research Center Conference on Environmental Finance (August 2012).

PRESENTATIONS (CONTINUED)

- Property and Environment Research Center Workshop (July 2012).
- Cornell University, Empirical Health Law Conference (April 2012).
- Brooklyn Law School, Federalist Society Workshop (March 2012).
- Washington University in St. Louis Law School, Federalist Society Workshop (March 2012).
- Penn/NYU Law & Finance Conference (February 2012).
- West Virginia University Economics Seminar, (February 2012).
- Rotterdam Institute of Law and Economics Workshop (December 2011).
- Regulatory Breakdown Conference, Penn Program on Regulation (September 2011).
- Journal of Institutional and Theoretical Economics Conference (June 2011).
- Law and Economics Center, Workshop on Empirical Methods for Law Professors (May 2011).
- Queen's University, Faculty of Law, Law and Economics Workshop (April 2011).
- European Masters in Law and Economics Program, Mid-Year Meeting Keynote Lecture (February 2011).
- AALS, Law and Economics Panel (January 2011).
- Law and Economics Center, American Disease Conference (December 2010).
- University of Arizona/Resources for the Future, Wildfire Symposium (November 2010).
- George Mason University, Levy Workshop (November 2010).
- Erasmus University Rotterdam, European Doctorate in Law and Economics Seminar (October 2010).
- Erasmus University School of Law, Inaugural Empirical Legal Studies Chair Lecture (November 2010).
- University of Amsterdam, Center for the Study of EU Contract Law, Workshop (October 2010).
- University of Otago, Economics Department Seminar (September 2010).
- University of Canterbury, Economics and Finance Department Seminar (September 2010).
- University of Hamburg, Hamburg Lectures on Law and Economics (July 2010).
- Penn Law European Society, Academic Program Lecture (June 2010).
- American Law and Economics Association, Annual Conference (May 2010).
- St. Louis Lawyers Chapter of the Federalist Society, Health Care Reform Lecture (April 2010).
- Temple University Beasley School of Law, Human Behavior Colloquium (April 2010).
- University of Virginia Law School, Olin Conference on Crime (March 2010).
- Erasmus University School of Law, Behavioral Approaches to Contract and Tort Group (January 2010).
- European Doctorate in Law and Economics Program, Erasmus University Rotterdam (January 2010).
- University of Illinois Corporate Colloquium (November 2009).
- New York Law School Federalist Society, Health Care Lecture (October 2009).
- Fordham University Federalist Society, Health Care Reform Debate (October 2009).
- University of Pennsylvania, Wharton Research Scholars Seminar (September 2009).
- Property and Environment Research Center (August 2009).
- Harvard Medical School, Race Disparities Panel (April 2009).
- Northwestern University Federalist Society Panel Discussion (November 2009).
- Stanford Law School, Law and Economics Workshop (February 2009).
- University of Virginia School of Law, Law & Economics Workshop (January 2009).
- Southern Economic Association, Annual Meeting (November 2008).
- Northwestern University, Searle Center, Symposium on Civil Liability (October 2008).
- University of Pennsylvania Law School, Faculty Retreat (September 2008).
- Harvard University, Petrie-Flom Center, Our Fragmented Health Care System (June 2008).
- CUNY Graduate Center/NBER, Seminar in Health, Labor, and Demography (May 2008).
- Columbia University, Empirical Methods and the Law Workshop (May 2008).
- The Rand Corporation, Institute for Civil Justice Annual Board Meeting (March 2008).
- George Mason University, Philosophy, Politics, and Economics Workshop (March 2008).
- Columbia University Law School, Faculty Workshop (March 2008).
- Claremont McKenna College/RAND, The Future of Securities Litigation Conference (February 2008).
- University of Michigan Law School, Law and Economics Workshop (February 2008).
- American Economic Association, Annual Meeting (January 2008).

PRESENTATIONS (CONTINUED)

- Harvard Law School, Law and Economics Workshop (November 2007).
- Conference on Empirical Legal Studies (November 2007).
- Emory University School of Law, Faculty Colloquium (November 2007).
- Rice University/University of Houston Economics, Microeconomics Workshop (October 2007).
- University of Pennsylvania Law School, Faculty Workshop (October 2007).
- George Mason University School of Law, Levy Fellows Workshop (October 2007).
- The RAND Corporation, Institute for Civil Justice Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (August 2007).
- Yale Law School, Faculty Enrichment Lectures (July 2007).
- Florida State College of Law, Primer on Statistics for Legal Scholars (July 2007).
- Federal Trade Commission, Behavioral Economics and Consumer Policy Workshop (April 2007).
- Yale Law School, Law Economics and Organization Workshop (March 2007).
- Florida State University, Center for Demography and Population Health Workshop (March 2007).
- University of Toronto, Law & Economics Workshop (February 2007).
- Florida State University Department of Economics, Faculty Workshop (March 2007).
- University of Georgia School of Law, Faculty Workshop (February 2007).
- University of Southern California School of Law, Law and Economics Workshop (February 2007).
- Cornell Department of Policy Analysis and Management, Faculty Workshop (November 2006).
- Boston University School of Law, Faculty Workshop (November 2006).
- University of Illinois College of Law, Faculty Workshop (November 2006).
- Northwestern University School of Law, Faculty Workshop (October 2006).
- Conference on Empirical Legal Studies (October 2006).
- American Law and Economics Association, Annual Meeting (May 2006).
- University of Maryland Department of Economics, Labor/Public Workshop (April 2006).
- Columbia University School of Law, Blue Sky Workshop (March 2006).
- American Enterprise Institute, Health Disparities Myth Panel (February 2006).
- William & Mary School of Law, Faculty Workshop (February 2006).
- Georgetown University Law Center, Law and Economics Workshop (February 2006).
- George Mason University School of Law, Levy Workshop (February 2006).
- Northwestern University School of Law, Faculty Workshop (February 2006).
- American Association of Law Schools, Annual Meeting (January 2006).
- International Society for New Institutional Economics, Annual Meeting (September 2005).
- Northwestern University School of Law, Law and Economics Workshop (September 2005).
- University of California Berkeley, Law and Economics Workshop (August 2005).
- Southeastern Association of Law Schools, Annual Meeting (July 2005).
- American Law and Economics Association, Annual Meeting (June 2005).
- West Virginia University Department of Economics, Faculty Workshop (January 2005).
- Southern Economics Association, Annual Meeting (November 2004).
- International Society for New Institutional Economics, Annual Meeting (September 2004).
- American Law and Economics Association, Annual Meeting (May 2004).

PROFESSIONAL SERVICE

- Editor, *International Review of Law and Economics* (2012 – Present).
- Dean's Distinguished Fellow, Villanova University Charles Widger School of Law (2017-2020).
- Instructor: Various Law and Economics Center Training Programs (judges, law professors, regulators, etc); Global Antitrust Institute; European Doctorate in Law and Economics; European Masters in Law and Economics.
- External Reviewer for Chair/Tenure/Appointments Candidates: Harvard University Law School; Columbia University Law School; NYU School of Law; Northwestern University School of Law; University of Michigan Law School; Georgetown University Law School; Washington University Law; Cornell Law School; Boston University Law School; Emory University Law; University of Toronto Law School; UC Irvine Law School; Duke University School of Law; George Mason University School of Law; William & Mary Law School; University of Alberta Law School; Mercer University School of Law; Institutum Jurisprudentiae Academia Sinica; Clemson University; Claremont McKenna College; Cornell University; UNC Chapel Hill; West Virginia University; University of Southern California Medical School; University of Southern California School of Pharmacy; University of Wisconsin; ITAM.
- Grant Reviewer: National Science Foundation; Smith Richardson Foundation; Hong Kong Research Grants Council, Israel Science Foundation; French National Research Agency; Research Foundation Flanders; Netherlands Organization for Scientific Research (NWO), Eutopia European University.
- Referee: *Journal of Law & Economics*; *Journal of Legal Studies*; *Journal of Law, Economics, and Organization*; *American Law & Economics Review*; *International Review of Law and Economics*; *Law & Social Inquiry*; *Supreme Court Economic Review*; *Review of Law and Economics*; *Journal of Empirical Legal Studies; Review of Economics and Statistics; American Economic Journal: Applied Economics*, *Journal of Public Economics*; *Journal of Health Economics; American Journal of Health Economics; Health Affairs; Journal of Policy Analysis and Management*; *European Journal of Health Economics*; *European Journal of Political Economy; Public Choice*; *Journal of Institutional Economics; Economic Inquiry*; *Southern Economic Journal*; *Health Services Research Journal; Eastern Economic Journal*; *Contemporary Economic Policy*; *Social Science Quarterly*; *Policy Studies Journal*; *Social Science & Medicine*; *Social Science Research; Criminology; Journal of Criminal Justice; Journal of Quantitative Criminology; Journal of Crime and Justice; Journal of Experimental Criminology; Journal for the Scientific Study of Religion; Economics and Human Biology; Harvard Law Review*; *Stanford Law Review; University of Pennsylvania Law Review; Adaptive Behavior; MDPI Sustainability; PLOS One*; *Moral Philosophy and Politics*; Aspen Publishers; Edward Elgar Publishing; Wolters Kluwer Law & Business Publishing; Oxford University Press; Cambridge University Press, Harvard University Press, Columbia University Press, University of Chicago Press.

C.V. current as of September 7, 2021 (https://www.law.upenn.edu/faculty/jonathan-klick)

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California.

Defendant.

Case No. 19STCV27561

PLAINTIFFS' MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation No. 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

[1] Dr. Shirley N. Weber is the current Secretary of State.

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> *"When we look at facts in the real world, we repeatedly find skewed distributions of outcomes, whether among human beings or in nature. But, when we look at social visions or political agendas, we find equal outcomes to be the prevailing presumptions, and the norm to be imposed by government policies when that presumption is not met. If some categories of people are not equally represented in particular occupations, institutions, or income brackets, that is regarded as someone's fault that the supposedly natural equality of outcomes has been thwarted. This is the seemingly invincible fallacy behind much that is said and done."*
>
> *Thomas Sowell, Discrimination and Disparities 215-16 (2019)*

ARGUMENT

I. MEN AND WOMEN ARE SIMILARLY SITUATED FOR PURPOSES OF SB 826.

A classification based on gender is considered suspect for equal protection purposes where the persons subject to the classification are similarly situated. (*Woods v. Horton* (2008) 167 Cal.App.4th 658, 670-71.) A court does not ask whether persons subject to a classification are similarly situated for all purposes, only whether they are similarly situated for purposes of the challenged law. (*Cooley v. Superior Court* (2002) 29 Cal.4th 228, 253.) "Similarly situated" means only that the Constitution does not require things that are different in fact or opinion be treated in law as if they were the same. (*Woods*, *supra*, at 670.) A recent Court of Appeals decision addressed the standard as follows:

> There is always some difference between the two groups which a law treats in an unequal manner since an equal protection claim necessarily asserts that the law in some way distinguishes between the two groups. Thus, an equal protection claim cannot be resolved by simply observing that the members of group A have distinguishing characteristic X while members of group B lack this characteristic. The "similarly situated" prerequisite simply means that an equal protection claim cannot succeed, and does not require further analysis, unless there is some showing that the two groups are sufficiently similar with respect to the purpose of the law in question that some level of scrutiny is required in order to determine whether the distinction is justified.

(*Taking Offense v. State of California* (2021) 66 Cal.App.5th 696, 724 (internal quotation omitted).)

SB 826 regulates the composition of corporate boards for the declared purposes of (1) boosting the California economy; (2) improving opportunities for women in the workplace; and (3) protecting California taxpayers, shareholders, and retirees. (2018 Stats., ch. 954, § 1(a).) It posits that having women on corporate boards improves corporate performance, which in turn advances these declared purposes. (*Ibid.*) SB 826 requires that subject corporations set aside a certain number of board seats for women or create new seats for which only women may apply. Both men and women are subject to whatever criteria and processes the corporations established for selecting board members, but SB 826

imposes the additional requirement that one or more seats be set aside or created for women. The only criterion for occupying these seats is being female. Men are excluded from the seats no matter how well-qualified they might be, and if a male occupies a seat reserved for a female, the corporation runs afoul of the law and risks incurring a hefty fine. Men and women plainly are similarly situated for purposes of SB 826. They are not meaningfully different from the minority and non-minority medical school applicants subject to the race-based quotas at issue in *Regents of Univ. of Cal. v. Bakke* (1978) 438 U.S. 265, 319-20.

Defendant tries to avoid this obvious conclusion by making two arguments. First, Defendant claims men and women are not similarly situated because women experience societal discrimination and implicit bias. Second, Defendant claims men are not harmed by SB 826. Both arguments are incorrect.

A. Defendant's Societal Discrimination/Implicit Bias Argument Fails.

According to Defendant, societal discrimination and implicit bias are the "distinguishing characteristics X" referenced in *Taking Offense*. (66 Cal.App.5th at 724.) Because women experience societal discrimination and implicit bias and men do not, according to Defendant, men and women are not similarly situated for purposes of SB 826. Of course, the same could have been said about the minority medical school applicants in *Bakke*, but Defendant makes no effort to explain why the outcome should be different here. Regardless, the Court in *Taking Offense* rejected Defendant's claim that discrimination makes one category of persons sufficiently different from another to render the two categories not similarly situated. (66 Cal.App.5th at 725; *see also In re Marriage Cases* (2008) 43 Cal.4th 757, 831 n.54.)

Defendant cites a handful of cases from the 1970s in purported support of his argument. Defendant misreads these cases. The California Supreme Court did not hold in *Arp v. Workers' Comp. Appeals Bd.* (1977) 19 Cal.3d 395 that, because of gender discrimination against women, men and women were not similarly situated for purposes of a workers compensation statute that granted a presumption of total dependency to widows but not widowers. In fact, the Court expressly rejected the argument Defendant says it recognized and declared the law's gender distinction unconstitutional. (*Id.* at 403-04.) Likewise, the U.S. Supreme Court never held in *Kahn v. Shevin* (1974) 416 U.S. 351 that, due to gender discrimination against women, men and women were not similarly situated for purposes

of a Florida property tax exemption granted to widows only. The four-paragraph opinion upheld the widows' benefit based on "large leeway" long granted to States "in making classifications and drawing lines which in their judgment produce reasonable systems of taxation." (*Id.* at 355.) In *Schlesinger v. Ballard* (1975) 419 U.S. 498, which challenged different promotion rules for male and female naval officers, the Court found male and female officers were not similarly situated because of then-existing (and unchallenged) statutory restrictions on women serving in combat and on naval vessels, not because of discrimination. (*Id*. at 508.) In *Califano v. Webster* (1977) 430 U.S. 313, the Court upheld under a more lenient 14th Amendment standard a law that granted women, but not men, a more favorable method of calculating social security benefits. It did not cut short its constitutional analysis by finding men and women were not similarly situated due to discrimination. The Court did not even meaningfully address the similarly situated component of an equal protection analysis.

It is not clear why Defendant cited *Frontiero v. Richardson* (1973) 411 U.S. 677. In *Frontiero*, like in *Arp* and *Kahn*, the challenged statute was declared unconstitutional. Obviously, if men and women were not similarly situated for purposes of the statute in *Frontiero*, the Court would not have reached the issue of the law's constitutionality. Like *Arp*, *Kahn*, *Schlesinger*, and *Califano*, *Frontiero* does not support Defendant's argument.

Woods does not support Defendant either. In fact, it supports Plaintiffs. At issue in *Woods* were two statutes. The first concerned state-sponsored programs to aid female victims of domestic violence. The second concerned jail-based programs for incarcerated mothers. The Court found the former unconstitutional but not the latter. In neither instance did it find that discrimination against women made men and women not similarly situated.[2] (*Woods*, 167 Cal.App.4th at 671-74.)

Finally, Defendant falls into the trap of viewing equal protection as a group right rather than an individual right. Defendant asserts, with respect to discrimination and implicit bias, that "[w]omen have a need for SB 826's requirements in a way that men do not." (Def's Mem. at 12.) Courts have repeatedly rejected similar arguments, including in *Taking Offense*, (66 Cal.App.4th at 725), *Woods*, (167 Cal.App.4th at 671), and *Connerly*. (*Connerly v. State Personnel Bd.* (2001) 92 Cal.App.4th 16,

[2] The Court's ruling upholding the jail-based programs for incarcerated mothers is particularly inapt here given the deference courts afford prison officials "in the complex area of prison administration." (*Woods*, 167 Cal.App.4th at 673.)

35.) Each candidate for board membership or board member seeking to be retained has the right to be considered as an individual, not as a representative of a group. And as addressed in more detail below, nothing in SB 826's text or legislative history demonstrates that societal discrimination or unconscious bias against women was something the Legislature sought to remedy when it established its gender-based quota for corporate boards.[3]

Defendant's argument plainly is nothing more than an attempt to avoid strict scrutiny. Determining whether persons subject to a statute are similarly situated is only a threshold analysis to make sure that like things are being compared. (*Woods* 167 Cal.App.4th at 670.) It is not and was never meant to subsume the entirety of an equal protection claim. If it were the case that societal discrimination or implicit bias makes persons subject to a statute not similarly situated, the entire equal protection analysis would collapse into that single question. The analysis would proceed no further because of the absence of similarly situated groups. There would be no strict scrutiny analysis, no need to demonstrate a compelling state interest or narrow tailoring. Much of the equal protection jurisprudence over the past forty-plus years, including *Bakke*, *Connerly*, and *Taking Offense*, would have been a wasted effort. There would be no constitutional check on race-based, gender-based, or other suspect classification-based governmental action. Surely that is not the law.

B. Defendant's "No Harm to Men" Argument Fails.

Defendant's "no harm to men" argument also fails. Corporations subject to SB 826 have three choices if they are to comply with the quota: (1) remove enough male board members to satisfy the quota and replace them with females; (2) replace enough male directors whose terms are expiring with enough female directors to satisfy the quota; or (3) add enough new board members who are female to satisfy the quota. The first option's adverse impact on male board members is obvious. Male directors are fired and replaced with female directors. Under the second and third options, current and prospective male board members are adversely affected because they are prohibited from occupying or being considered for board seats reserved for females. Men are harmed because they cannot occupy or

[3] Defendant also cites Plaintiffs' answer to a contention interrogatory but fails to tell the Court what the interrogatory asked or provide the Court with Plaintiffs' complete response, including Plaintiffs' objections. (Def's Mem. at 14.) When read in its entirety, the answer has no bearing on whether men and women are similarly situated for purposes of SB 826. (Plaintiff's Statement of Material Facts in Opposition to Defendant's Motion for Summary Judgment ("OSOF") at ¶¶ 82-83.)

compete for these seats, just like the non-minority medical school applicants could not occupy or compete for seats reserved for minority applicants in *Bakke*. (*Bakke*, 438 U.S. at 319-20) ("No matter how strong their qualifications . . . [non-minority applicants] are never afforded the chance to compete with applicants from the preferred group for special admission seats. At the same time, the preferred applicants have the opportunity to compete for every seat in the class.").

Defendant asserts that a corporation could add more seats for which males could compete at the same time it adds enough seats for females to satisfy the quota. The assertion is a distinction without a difference. Even if a corporation were to add new seats for which both men and women could compete after adding enough new "female" seats to satisfy the quota – these new "gender-neutral" seats would have to be open to both men and women for the corporation to avoid running afoul of anti-discrimination laws – the new "female" seats would still be off limits to males. Women could occupy or be considered for all seats on the board, but men could only occupy or be considered for seats not set aside for women. Again, individuals who are male are harmed by SB 826's quota, just like the non-minority medical school applicants in *Bakke* were harmed by the quotas in that case.[4] (*Bakke*, 438 U.S. at 319-20.) Equal protection requires they be treated as individuals, not singled out for their gender.

Finally, Defendant's claim that men are not harmed by SB 826 and therefore men and women are not similarly situated for purposes of SB 826 is an obvious *non sequitur*. Not only is the assertion that individuals who are male are not harmed by SB 826 incorrect, but there is no connection between the two assertions. Nor does Defendant provide any authority that even suggests the two are related.

II. SB 826 FAILS STRICT SCRUTINY.

A. No Compelling Governmental Interest Has Been Shown.

When the Legislature uses a suspect classification, it must clearly identify its reasons for doing so. (*Connerly*, 92 Cal.App.4th at 36.) Specificity and precision are demanded. (*Ibid*.) Generalized assertions of purpose are insufficient, and benign assertions are entitled to little or no weight. (*Ibid.*) Speculation about the Legislature's purpose will not suffice. (*Id.* at 38.) It must be shown that an

[4] Defendant claims Plaintiffs acknowledged that SB 826 does not take away opportunities for men, citing two of Plaintiffs' answers to Defendant's contention interrogatories. (Def's Mem. at 15.) The two interrogatories asked different questions, and Plaintiffs gave different answers to each. (OSOF at ¶¶ 84-87.) Defendant ignores Plaintiff's answer to the second interrogatory, which quite clearly addressed the harm to men caused by SB 826. Defendant's assertion is plainly incorrect.

alleged purpose was the Legislature's actual purpose, and evidence of that purpose must have been gathered and considered by the Legislature before it used the suspect classification. (*Id.* at 37-38.)

It is a prime rule of construction that legislative intent underlying a statute must be ascertained from its language; if the language is clear, there can be no room for interpretation, and effect must be given to its plain meaning. (*City and Cnty. of San Francisco v. Superior Court* (1982) 130 Cal.App.3d 481, 485.) Extrinsic aids such as legislative history should only be consulted where a statute is reasonably susceptible to more than one interpretation (*Stirling v. Brown* (2018) 18 Cal.App.5th 1144, 1155), and the intentions, motives, understandings, or opinions of individual legislators are inadmissible. (*City and Cnty. of San Francisco*, *supra*, at 485-86.) SB 826's text is not ambiguous. Its legislative findings expressly identify the purposes for its gender-based quota: (1) boosting California's economy; (2) improving opportunities for women in the workplace; and (3) protecting California taxpayers, shareholders, and retirees. (2018 Cal. Stats. ch. 954, § 1(a).) Defendant largely ignores all three.[5]

Defendant appears to have given up on demonstrating that any of SB 826's three stated purposes are compelling governmental interests. Defendant ignores the Legislature's assertion that more women on corporate boards will boost California's economy. Defendant pays only scant attention to the assertions that more women on corporate boards will improve work opportunities for women and protect taxpayers, shareholders, and retirees. The reason is obvious. If such generalized assertions of compelling governmental interests sufficed, this entire prong of a strict scrutiny analysis would be rendered meaningless. Defendant instead invents two other purported purposes not referenced in the findings – remedying societal discrimination and implicit bias and promoting diversity.

1. Remedying Societal Discrimination and Implicit Bias Is Not A Compelling Governmental Interest.

SB 826's legislative findings do not identify remedying societal discrimination and implicit bias against women as a purpose of the statute. Based upon the amount of attention Defendant devotes to the subject, however, Defendant must believe it is the statute's most significant, if not only, purpose. Defendant offers no reason why, if remedying discrimination and bias against women were SB 826's penultimate purpose, the Legislature would make no mention of it in its findings but would identify

[5] As Plaintiffs demonstrated in their own summary judgment motion, none of the purposes described in SB 826's findings is a compelling governmental interest. (Plfs' Mem. at 5-8.)

other purposes. Defendant instead argues it is "self-evident" that SB 826's purpose is remedial. (Def's Mem. at 18-19.) It is not self-evident at all. SB 826's silence about a remedial purpose when it expressly mentions other purposes shows that remedying societal discrimination and implicit bias was not an actual purpose of the statute. Because remedying societal discrimination and implicit bias was not the Legislature's actual purpose, it cannot be a compelling governmental interest for purposes of strict scrutiny analysis. (*Connerly*, 92 Cal.App.4th at 37-38.)

Defendant nonetheless cherry-picks from SB 826's legislative history to argue that remedying societal discrimination and implicit bias was the law's actual purpose. Defendant cites a Senate Judiciary Committee report as evidence. (Def's Mem at 17 (citing Haddad Decl. ¶ 3, Ex. B)) If anything, the report undermines Defendant's claim. The report makes clear that SB 826's "findings and declarations do not explicitly draw" a link between the number of women on corporate boards relative to men and discrimination. (Haddad Decl., Ex. B at p. 12 (third paragraph)) The report notes that SB 826's author was considering additional findings to try to bolster any such claim:

> Given the high bar set for meeting strict scrutiny, and court commentary on what sort of evidence of past discrimination will be required to meet it, the author is considering adding findings that point to specific forms of past or present gender discrimination that further justify, from a judicial point of view, enacting a remedial approach like the one proposed by the bill.

(*Ibid*.) The report continues:

> Still, given that courts applying strict scrutiny have indicated a desire to see a nexus between specific past discrimination and the remedial action proposed, the author may wish to set forth specific information about past discrimination against women in the findings and declarations.

(*Id*. at p. 13 (first paragraph). No findings about specific discrimination or a remedial purpose were included in SB 826's findings. The obvious conclusion is that either SB 826 was not intended to be remedial or there is no specific evidence that publicly held corporations headquartered in California have discriminated against women who have sought seats on their boards of directors. Either way, Defendant cannot now claim that SB 826 has a remedial purpose.

Defendant's citation to a handful of generic comments by SB 826's author and a single comment by another senator[6] at a Senate Judiciary Committee hearing does not change this conclusion. The

[6] The comment was merely a gratuitous remark thanking the author for her efforts. (OSOF at ¶ 88.)

comments, none of which identify a single instance in which a publicly held corporation headquartered in California discriminated against a woman seeking a seat on its board of directors, do not come close to demonstrating that the Legislature's purpose in enacting SB 826 was to remedy discrimination. Defendant cannot show that any member of the Legislature other than those at the hearing were even aware of the comments, much more that they agreed with the comments and adopted them as their own when voting on SB 826. There also were at least six other committee hearings on SB 826. (OSOF at ¶ 89.) Defendant makes no claim that other legislators made comments at any of these other hearings indicating that they believed SB 826 to be remedial. The generic comments Defendant cites provide no reason to disregard SB 826's stated purposes, none of which includes remedying discrimination.

Even if SB 826 had a remedial purpose, the evidence Defendant presents would be insufficient to constitute a compelling governmental interest. The law in this regard is clear. As the Senate Judiciary Committee report stated, where the government interest asserted is to remedy the effects of past or present discrimination, the discrimination must be identified with specificity. (*Connerly*, 92 Cal.App. 4th at 38; *see also Hiatt v. City of Berkeley* (1982) 130 Cal.App.3d 298, 311-13.) A generalized assertion that discrimination exists or has existed in the past is insufficient, and statistical differences alone cannot meet the government's burden. (*Connerly*, *supra*, at 38.) The Legislature must have strong evidence on which it concluded that the remedial action was necessary. (*Ibid.*; *see also Bakke*, 438 U.S. at 307 ("We have never approved a classification that aids persons perceived as members of relatively victimized groups at the expense of other innocent individuals in the absence of judicial, legislative, or administrative findings of constitutional or statutory violations.").)

Far from presenting specific evidence that publicly held corporations headquartered in California have discriminated against women seeking seats on their boards of directors, Defendant only argues that women experience societal discrimination and inherent bias and that the statistical disparity in the numbers of women and men serving on corporate boards flow from this discrimination and bias. (Def's Mem. at 12 and 17; Konrad Decl., ¶¶ 16-25, 27, 29, 57, and 60; Schipani Decl., ¶¶ 35-45 and 89-95.) Defendant cites no case in which such claims of generalized discrimination or implicit bias alone was found to justify use of a suspect classification. (Def's Mem. at 16-17.) Both *Johnson v. Transportation Agency of Santa Clara County* (1987) 480 U.S. 616 and *United Steelworkers of America v. Weber*

(1979) 443 U.S. 193 were cases arising under Title VII of the Civil Rights Act of 1964, 42 U.S.C. §§ 2000e *et seq*., not equal protection cases, and both arose in the context of voluntary employer action, not in the context of a state imposing a gender-based quota to purportedly remedy generalized discrimination and implicit bias. They are inapposite. In *Hiatt*, the Court rejected the City of Berkeley's claim that its affirmative action program, which required the makeup of the city's work force approximately equal the percentage of each race and sex in the city's population, on the precise grounds that there was no evidence of discrimination by the city and therefore no compelling governmental interest in using race and sex in hiring decisions: "The record contains no legislative or administrative declaration as to past discrimination with the City of Berkeley and denotes that the [affirmative action program] was enacted in response to a history of discriminatory practices in the American society as a whole." (*Hiatt*, 130 Cal.App.3d at 318.)

Richmond v. J.A. Croson Co. (1989) 488 U.S. 469, which was decided after both *Johnson* and *Weber*, is fatal to Defendant's argument. The *Richmond* Court held, "[A] generalized assertion that there has been past discrimination in an entire industry provides no guidance for a legislative body to determine the precise scope of the injury it seeks to remedy." (*Id*., 488 U.S. at 498.) It continued, "[A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota." (*Id*. at 499.) Defendant does not even limit its discrimination and implicit bias claims to a particular industry. *Richmond* says,

> In sum, none of the evidence presented by the city points to any identified discrimination in the Richmond construction industry. We, therefore, hold that the city has failed to demonstrate a compelling interest in apportioning public contracting opportunities on the basis of race. To accept Richmond's claim that past societal discrimination alone can serve as a basis for rigid racial preferences would be to open the door to competing claims for "remedial relief" for every disadvantaged group. . . . We think such a result would be contrary to both the letter and spirit of a constitutional provision whose central command is equality.

(*Id*. at 505-06; *see also Shaw v. Hunt* (1996) 517 U.S. 899, 909-10 ("An effort to alleviate the effects of societal discrimination is not a compelling interest."); *Hiatt*, 130 Cal.App.3d at 313 and 318; *see also Coral Constr. v. City and County of San Francisco* (2010) 50 Cal.4th 315, 337 ("The only possibly compelling governmental interest implicated by the facts of this case is the interest in providing a remedy for purposeful discrimination.") (applying Cal. Const., art. 1, § 31).)

2. Promoting Diversity/Improving Corporate Performance Is Not A Compelling Governmental Interest.

Defendant also argues that increasing gender diversity on corporate boards, another purported purpose not contained in SB 826's legislative findings, is a compelling governmental interest. Defendant cites no case in which any court has ever held that, by itself, gender diversity on corporate boards is a compelling governmental interest. It is not. (*Bakke*, 438 U.S. at 307; *Connerly*, 92 Cal.App.4th at 34 and 59 (diversity for diversity's sake is not a compelling governmental interest.).) Instead, Defendant relies on *Grutter v. Bollinger* (2003) 539 U.S. 306, which arose in the very different context of higher education and involved using race as a "plus factor" – not a quota – in admissions. Defendant ignores the analysis that led to *Grutter*'s holding that the law school had a compelling state interest in attaining a racially diverse student body. *Grutter* looked at a number of factors in reaching this conclusion, including the law school's educational judgment that racial diversity was essential to its educational mission, a judicial tradition of deferring to academic decisions within a university's expertise, and the unique First Amendment aspects – the "expansive freedoms of speech and thought associated with the university environment" – of a university's selection of its student body. (*Id*. at 328-29.) None of these factors are present in the corporate board context. And of course, the overarching governmental interest in public university admissions – preparing students for work and citizenship in an "increasingly diverse workforce and society" – also has no counterpart in the corporate board context. (*Id.* at 330-31.) *Grutter* has no applicability to corporate boards.[7]

Defendant's reliance on *Larsen v. U.S. Navy* (D.D.C. 2007) 486 F.Supp.2d 11 also is misplaced. *Larsen* concerned a legal challenge to a U.S. Navy Chaplin Corps hiring program. The case did not "uphold[] [an] affirmative action program for [the] Navy chaplin corps," as Defendant asserts. (Def's Mem. at 21.) Rather, the Court rejected claims by three disappointed applicants who alleged that the program discriminated against them unlawfully because of their religious beliefs. In no way does the case support the proposition that a state has a compelling interest in diversity on corporate boards.[8]

Because diversity for diversity's sake can never be a compelling governmental interest,

[7] *Grutter* also is contrary to the California constitution's express prohibition on the use of race and ethnicity in public university admissions. (Cal. Const., art. 1, § 31(a).)

[8] Defendant also fails to tell the Court that the case was deemed moot on appeal, after the U.S. Navy ended the challenged policy. (*Larsen v. U.S. Navy* (D.C. Cir. 2008) 525 F.3d 1.)

Defendant argues that diversity improves corporate performance.[9] (Def's Mem. at 21-22.) While Plaintiffs dispute as a factual matter that adding women to corporate boards improves corporate performance – or that Defendant has proven it does – Defendant's argument about corporate performance is anything but clear and compelling. (OSOF at ¶¶ 45-53.) Defendant asserts, apparently with respect to corporations, that "[t]he State has a compelling interest in ensuring that entities with so visible a role in society reap the benefits of that diverse society." (Defs' Mem. at 21.) Defendant also weaves into the argument the concept of "critical mass." (Def's Mem. at 22.) Unexplained is how a "critical mass," whether arising from a strict percentage or a minimum number of women on corporate boards, bears on or is itself a compelling governmental interest. Defendant's vague, ambiguous, diversity-improves-corporate-performance argument is exactly the type of generalized claim that cannot constitute a compelling government interest. (*Connerly*, 92 Cal.App.4th at 36.)

3. Protecting Taxpayers and Retirees Is Not A Compelling Governmental Interest.

Finally, Defendant claims that SB 826's gender-based quota serves the compelling governmental interest of protecting taxpayers and retirees who receive public pensions. Unlike Defendant's remedying discrimination and diversity arguments, this claim is referenced in the legislative findings.[10] It is still far too generalized, if not entirely speculative, to satisfy strict scrutiny.

Defendant never says what protection SB 826 provides to taxpayers and retirees but asserts that the "benefits" to taxpayers and retirees are "obvious." (Def's Mem. at 22.) They are anything but obvious. They also are quite tenuous if they exist at all. As Plaintiffs understand Defendant's argument, the mere fact of having women on corporate boards – no claim is made about the qualifications, skills, or experience of the women so long as they are female – improves corporate performance, and if corporations perform better, then the state's tax revenues will increase, benefitting taxpayers. Defendant also claims that this same improved corporate performance that results from having women on boards will benefit CalPERS's financial performance. Retirees will benefit because CalPERS's financial performance benefits. Defendant also adds improved "public confidence" as an alleged benefit, but

[9] Unlike promoting diversity, improving corporate performance is referenced in SB 826 as one of the law's purposes. (2018 Stats. ch. 954 § 1(c).)

[10] Defendant does not assert that adding more women to corporate boards will protect shareholders, although that claim was specifically included in SB 826's legislative findings.

nowhere explains what this means or how it results from SB 826's gender-based quota.

Defendant provides no evidence that quantifies any of these alleged benefits, nor does SB 826's legislative findings quantify them. Again, Plaintiffs dispute Defendant's "corporate performance" argument. (OSOF at ¶¶ 45-53.) Defendant also fails to provide, and SB 826's findings do not identify, any evidence about the degree to which California corporations with the required number of females on their boards outperform California corporations with fewer or no females on their boards or even if that is the case. There also is no evidence demonstrating that, even if there were a benefit, the benefit is material. California Department of Finance chief revenue forecaster Jay Chamberlain testified that only ten percent of the state's general fund revenue comes from corporate income taxes and that this percentage includes not just corporations headquartered in California, but also corporations doing business in the state. (Chamberlain Decl. ¶ 5.) No claim is made that this ten percent figure is limited to tax revenue derived from corporations subject to SB 826's gender-based quota only. (*Ibid*.) The ten percent figure necessarily includes both publicly traded and privately held corporations headquartered or doing business in California. Obviously, the tax revenue derived from corporations subject to the quota must be something less than this ten percent amount. And, of course, improved corporate performance does not translate directly into higher tax revenues. (*Ibid*.) Tax credits and other factors affect the amount of taxes a corporation ultimately pays. (*Ibid.*)

Plainly, any number of economic and other factors influence both corporate performance and tax revenue. Not only is the alleged tax benefit of SB 826's gender-based quota unquantified, but it is based on any number of unstated or unconsidered assumptions about the interactions of a complex set of unknown and unidentified, if not unknowable and unidentifiable, variables. (OSOF at ¶¶ 45-53.) Defendant provides the Court with no meaningful way to assess this alleged tax benefit. It is speculative at best and does not come close to rising to the level of a compelling governmental interest that justifies SB 826's use of a constitutionally suspect classification.

The same is true for the alleged benefit to retirees on public pensions. Again, neither Defendant nor SB 826's findings offer any evidence that quantifies any alleged benefit to retirees. While CalPERS official Simiso Nzima testified that CalPERS invests in publicly held corporations, including publicly held corporations headquartered in California, no information is provided about whether CalPERs

invests in corporations that have or do not have the minimum number of women on their boards to satisfy the quota. (Nzima Decl. ¶¶ 5 *et seq*.) Obviously, if CalPERS does not invest in corporations that have no or fewer women on their boards then the quota requires, then there can be no corresponding uptick in CalPERS's performance based on the addition of women to those corporations' boards.

Nor is any information provided about whether CalPERS's investments in publicly held corporations headquartered in California are substantial or even material. According to CalPERS, only about five percent of its $392.5 billion in investments is invested in California "Public Equity," which includes "listed public equities corporate bonds." (OSOF at ¶ 90.) As with the alleged benefit to taxpayers, assessing the alleged benefit to retirees on public pensions from the quota is based on unstated or unconsidered assumptions about the interactions of a complex set of unknown and unidentified, if not unknowable and unidentifiable, variables. Defendant completely fails to address this incredibly complex interaction. Like the alleged benefit to taxpayers, the alleged benefit to retirees is speculative at best and does not come close to rising to the level of a compelling governmental interest that justifies SB 826's use of a constitutionally suspect classification.

The two cases Defendant cites in support of her argument, *McGlynn v. State of California* (2018) 21 Cal.App.4th 548 and *Williams-Yulee v. Florida Bar* (2015) 575 U.S. 433, are easily distinguishable. At issue in *McGlynn* was a group of judges' equal protection challenge to changes in a pension system, the financial condition of which an independent government commission had described as "dangerously underfunded," "dire," "unmanageable," a "crisis" that "will take a generation to untangle," and "a harsh reality" that could no longer be ignored. (*McGlynn*, *supra*, at 564-65.) The judges had been elected to the bench when a more generous pension system was in place but did not take office until a new, less generous system became operative. The Court declined to apply strict scrutiny to the judges' challenge, but opined that, even if strict scrutiny were to be applied, the new system would not violate equal protection. (*Id.* at 564.) Regardless, the concrete, specific interest identified by the government in shoring up the failing pension system bears no resemblance to the generalized, conclusory interest Defendant asserts here. *Williams-Yulee* was a First Amendment challenge to a Florida Bar rule that prohibited candidates for judicial office from soliciting contributions to their own election campaigns, not an equal protection case. In undertaking a First Amendment analysis, the U.S. Supreme Court found

that Florida had a compelling state interest in maintaining the integrity of its judicial branch and that the challenged campaign finance rule was narrowly tailored to avoid unnecessarily curtailing protected speech. (*Williams-Yulee*, *supra*, at 444.) Defendant fails to explain what this First Amendment judicial election/campaign finance case has to do with taxpayers and retirees or corporate boards. The fact that both First Amendment and equal protection analyses include examinations of compelling state interests is of no moment. The case is entirely inapposite.

4. Summary.

Defendant's argument that SB 826 is supported by compelling government interests boils down to two purposes – remedying discrimination and promoting diversity – that the Legislature did not assert and a third – protecting taxpayers and retirees. All three are so lacking in specificity and precision and so generalized that they cannot satisfy strict scrutiny. And courts have repeatedly held there is no compelling governmental interest in remedying societal discrimination. (*Richmond*, 488 U.S. at 505-06; *Shaw*, 517 U.S at 909-10; *Hiatt*, 130 Cal.App.3d at 313 and 318.) The Court need not even continue its analysis to determine whether SB 826's gender-based quota is narrowly tailored to achieve these purposes because none of the purposes are compelling governmental interests.

B. "Narrow Tailoring."

Once a compelling governmental interest is shown, the inquiry turns to the means chosen to address that interest – whether a suspect classification's use is "narrowly tailored" to achieve the Legislature's goal. (*Connerly*, 92 Cal.App.4th at 36.) Only the most exacting connection between the suspect classification and the compelling governmental interest will suffice. (*Ibid*.) The use of the suspect classification must be necessary, rather than merely convenient, and supported by convincing evidence. (*Ibid.*) It also must be limited in scope and duration to that which is necessary to accomplish the Legislature's purpose. (*Id.* at 37.) The availability of gender-neutral alternatives – or the Legislature's failure to consider gender-neutral alternatives – is fatal. (*Ibid.*)

When a legislature asserts a compelling governmental interest in remedying specific discrimination, narrow tailoring requires the use of a suspect classification actually be remedial. (*Connerly*, 92 Cal.App.4th at 38.) The remedy must be designed as nearly as possible to restore victims of specific discriminatory conduct to the positions they would have occupied absent the discrimination.

(*Ibid.*) The lack of any effort to limit a remedial scheme to those persons who actually suffered from specific discrimination is fatal to the scheme. (*Ibid.*)

Defendant does not cite a single case in which the blunt instrument of a quota was found to be narrowly tailored to further a compelling governmental interest. The two quota cases Defendant cites, *Bakke* and *Hiatt*, squarely rejected them. (*Bakke*, 438 U.S. at 319-20; *Hiatt*, 130 Cal.App.3d at 319.) Defendant tries to avoid this conclusion by arguing that SB 826 is not a "strict" quota, but instead is merely a "floor" or a "flexible solution," whatever that might mean, and therefore is narrowly tailored. (Def's Mem. at 15, 22, and 25.) Defendant's argument is a distinction without a difference. *Grutter* explains:

> Properly understood, a quota is a program in which a certain fixed number or proportion of opportunities are reserved exclusively for certain minority groups. Quotas impose a fixed number or percentage which must be attained, or which cannot be exceeded and insulate the individual from comparison with all other candidates for the available seats.

(539 U.S. at 335 (cleaned up); *see also Bakke*, 438 U.S. at 289 (dismissing the semantic distinction between a "quota" and "goal" and concluding that the school's special admission program was "a line drawn on the basis of race and ethnic status.").) SB 826 does exactly what *Grutter* describes a quota as being – it reserves a fixed number of board seats for women and precludes men from being considered for those seats, even if the seats are newly added.

1. SB 826's Gender-Based Quota Is Not Narrowly Tailored To Remedy Societal Discrimination and Implicit Bias.

Even if the Court were to find that remedying societal discrimination and implicit bias against women is a compelling governmental interest, Defendant has not demonstrated by convincing evidence that the Legislature's use of a gender-based quota is narrowly tailored to achieve this goal. Defendant does not even try to demonstrate why, in order to remedy societal discrimination and implicit bias against women, it is necessary to discriminate against men who sit on corporate boards or seek positions on corporate boards. SB 826 does precisely that. It requires board seats that only women can occupy. It is not a "floor" or a "flexible solution," as Defendant euphemistically maintains. (Def's Mem. at 11, 15, 22, and 25.) The law excludes men from these seats for no other reason than that they are male. Defendant provides no convincing evidence why doing so is necessary to remedy societal discrimination and implicit bias against women, if such a goal is even achievable.

There also is a complete disconnect between Defendant's allegations about societal discrimination and implicit bias against women and SB 826's gender-based quota. The quota simply does not remedy discrimination or bias suffered by any specific, identifiable women. (*Connerly*, 92 Cal.App.4th at 38 (remedial scheme not limited to persons who actually suffered specific discrimination are not narrowly tailored.).) SB 826 does not require that any of the women occupying these women-only seats have suffered discrimination or bias. Nor has any effort been made to determine whether corporations subject to the quota discriminated or exhibited bias against women seeking seats on corporate boards in the past. Instead of an individualized procedure for identifying and remedying actual discrimination, SB 826's quota is an administrative convenience, not a necessity. (*Richmond*, 488 U.S. at 508; *Connerly*, 92 Cal.App.4th at 37.)

Also completely disconnected from SB 826's purportedly remedial purpose is the number of board seats reserved for women under SB 826's quota. Mandating three females for boards of six or more directors, two for boards of five directors, and one for four or fewer directors "cannot in any realistic sense be tied to any injury suffered by anyone." (*Richmond*, 488 U.S. at 499.) The same is true for "critical mass." Likewise, requiring enough board seats to constitute a "critical mass" of women has no bearing on providing a remedy for women who have suffered discrimination. These apparently randomly selected numbers "cannot be said to be narrowly tailored to any goal, except perhaps outright [gender] balancing." (*Richmond*, 488 U.S. at 507.)

Significantly, California law already provides remedies for employment discrimination without resorting to quotas. These include the Fair Employment and Housing Act, Cal. Gov't Code § 12940 *et seq.*, among others. The Department of Fair Employment and Housing and the Civil Rights Section of the California Department of Justice are charged with enforcing existing employment discrimination laws. Yet there is no evidence that the Legislature reviewed existing anti-discrimination laws to determine how they were being enforced, whether they could be made more effective, whether they needed to be updated or enhanced, or whether it was necessary to enact completely new laws to address alleged discrimination on corporate boards. Similarly, the Legislature does not appear to have considered, and Defendant presents no evidence that the Legislature reviewed, existing law enforcement agencies' efforts to enforce anti-discrimination laws against publicly held corporations headquartered in

California. Certainly, if these agencies' efforts were deemed deficient, the Legislature could have considered ways to make them more effective. The Legislature's failure to consider any of these or any other gender-neutral alternatives is fatal to any claim that SB 826 is narrowly tailored.

2. SB 826's Gender-Based Quota Is Not Narrowly Tailored To Promote Diversity/Improve Corporate Performance and Protect Taxpayers and Retirees.

Defendant only argues that SB 826's gender-based quota is necessary to achieve a compelling governmental interest in remedying societal discrimination and implicit bias against women. (Def's Mem. at 23.) Defendant makes no argument that the quota is necessary to promote diversity/improve corporate performance or protect taxpayers and retirees. Although Defendant appears to have abandoned the latter arguments, Plaintiff will address them briefly.

Defendant's arguments about promoting diversity and protecting taxpayers and retirees is based on a complex, attenuated chain of variables. According to Defendant, SB 826's gender-based quota increases diversity on corporate boards, which improves corporate performance. Improved corporate performance boosts the economy, which in turn benefits and protects taxpayers and retirees. The leap from SB 826's gender-based quota to protecting taxpayers and retirees is a large one. Even larger is the claim that the quota is necessary and limited in scope and duration to achieve these goals.

Plaintiffs dispute Defendant's underlying assertion that adding women to corporate boards increases corporate performance. The studies cited in SB 826's findings disclaim any causal relationship between more women on corporate boards and increased corporate performance. (Plfs' SOF at ¶¶ 15-16.) Even as recently as August 6, 2021, the U.S. Securities and Exchange Commission found that studies on the effect of board diversity on corporate performance were inconclusive. (OSOF at ¶ 91.) It cannot be said that SB 826's gender-based quota will accomplish the goal of improving corporate performance, much more that it is "necessary" to accomplish that goal.

Finally, and as Plaintiffs demonstrated in their own summary judgment motion, there are any number of gender-neutral ways to improve corporate performance and boost the economy without imposing a gender-based quota. Reducing taxes, streamlining regulations, and creating a more business friendly environment are obvious ways to improve corporate performance. Defendant fails to demonstrate that SB 826's gender-based quota is necessary to improve corporate performance and

achieve the asserted follow-on goal of protecting taxpayers and retirees.

3. Earlier Legislative Efforts Fail To Show SB 826's Gender-Based Quota Is Necessary.

Defendant makes another giant leap in arguing that SB 826's gender-based quota is necessary because of alleged alternatives undertaken by the Legislature before enacting SB 826. (Def's Mem. at 23-24.) Defendant does not demonstrate that all of these earlier measures had the same goals as SB 826 or that they even make for fair comparisons for purposes of the compelling governmental interests being alleged. Among the provisions Defendant identifies is a 2002 measure that extended disability insurance benefits to individuals who are unable to work due to the sickness or injury of a family member. (SB 1661, 2002 Stats. ch. 901.) The measure plainly has no bearing on corporate boards, corporate performance, gender discrimination, or even gender. It does not prove that SB 826's quota was necessary. Another is a 2018 measure strengthening workplace harassment laws. (SB 1300, 2018 Stats. ch. 955.) It was approved by the Governor on the same day SB 826 was approved by the Governor. (Plfs' SOF at ¶ 2; OSOF at ¶ 92) It proves nothing about the quota's necessity. Another appears to be a page on the California Department of Industrial Relations' website. (Def's Mem. at 24 (citing Haddad Decl., ¶ 5.)[11] It is not even legislative action and, like the other two measures, has no bearing on the necessity of SB 826's quota. Defendant also fails to demonstrate that the Legislature took any of these measures into account when it was considering SB 826.

Defendant also points to two other measures. The first is a 2013 concurrent resolution that urged publicly traded corporations in California to have a minimum number of women on their boards by the end of 2016. Defendant does not show that the resolution was ineffective other than to assert that the number of women on corporate boards did not increase as fast as the Legislature desired. (Def's Mem. at 24.) Defendant also does not show that, in enacting SB 826, the Legislature made any effort to examine the measure's effectiveness and why it may or may not have met expectations. Absent from Defendant's analysis is any showing that the Legislature looked at the individual corporations over time to understand why women may or may not have joined boards or why they may have left boards of publicly traded corporations because of or despite the resolution, whether corporations were even aware

[11] Plaintiffs believe the correct citation should be to Haddad Decl., ¶ 6.

of the resolution or, if they were aware of it, why they may or may not have added more women to their boards in response to the resolution. Also absent is any demonstration that the statistics Defendant cites reflect the same set of corporations over time. Obviously, the corporations urged to have a minimum number of women on their boards in 2013 may not be the same corporations looked at in 2018. Defendant acknowledges that many large technology startups went public between 2014 and 2016. *Id.* Any number of factors may explain or have influenced what transpired after passage of the resolution. Defendant fails to demonstrate that the Legislature analyzed or considered any of them. It is a substantial leap to claim that events following the 2013 concurrent resolution necessitated SB 826's gender-based quota. The resolution is not convincing evidence that a quota is necessary to achieve any compelling governmental interests Defendant alleges.

The same is true of the registry that the Legislature required Defendant to maintain beginning in 1995 (not 2013), which includes both "distinguished women and minorities who are available to serve on corporate boards." (Corp. Code § 318.) SB 826's legislative history also demonstrates that Defendant has failed to carry out a key aspect of the law: "While that statute mandates that a report should be issued every three years that the registry is in existence to document the extent to which the registry has led to greater representation of women and minorities on boards, no such report appears to have been issued since the statute was enacted in 1995." (Plfs' RJN, Ex. 5 at pg. 4.) The registry is not compelling evidence of the need for a quota either.

4. SB 826's Gender-Based Quota Is Not Limited In Scope or Duration.

Finally, Defendant asserts that, even if SB 826's gender-based quota is not limited by time, it is limited by scope.[12] Defendant's argument that the quota is limited to publicly held corporations is no limitation at all. Publicly held corporations are the target of the law, not a limitation. It also is of little comfort to men denied board seats because of their gender that Defendant is required to publish annual reports about the law's impact and that the quotas do not increase over time. Neither is any real limitation. The question is whether the law is designed to achieve its goals while imposing the least limitation on individuals in the class of persons burdened by the law. (*Hiatt*, 130 Cal.App.3d at 310.)

[12] The quota's permanence alone makes it not limited. (*Grutter*, 539 U.S. at 342 ("Enshrining a permanent justification for racial preferences would offend this fundamental equal protection principle.").)

Despite Defendant's disingenuous claims, the quota plainly disadvantages men. It excludes highly qualified, experienced men from any seat reserved for a woman simply for being male, while benefitting women simply for being female. Absent is any "synthesis of factors such as . . . sex with several other factors, *all* of which are to be considered in arriving at the classification." (*Hiatt*, 130 Cal.App.3d at 319.) SB 826 imposes no requirement that a woman who satisfies a corporation's gender quota has experienced discrimination such that her occupying the seat is remedial. Nor does it impose any requirements about qualification, education, or experience that would assist in improving corporate performance and advance SB 826's follow-on goals. Gender is not a "plus factor" to be taken into account along with other individualized factors in considering board candidates, as *Grutter* affirmed. (539 U.S. at 334.) It is the only factor. "To be narrowly tailored, a race-conscious admissions program cannot use a quota system – it cannot 'insulate each category of applicants with certain desired qualifications from competition with all other applicants.'" (*Id.* at 334 (quoting *Bakke*, 438 U.S. at 315.)) The same is true for SB 826's gender-based quota. It can never be narrowly tailored.

III. SB 826 VIOLATES CAL. CONST., ART. I, SECTION 31.

"Unlike the equal protection clause, section 31 categorically prohibits discrimination and preferential treatment. Its literal language admits no 'compelling state interest' exception[.]" (*Hi-Voltage Wire Works, Inc. v. City of San Jose* (2000) 24 Cal. 4th 537, 567.) Granite Construction appears on Defendant's July 2019 and March 2020 reports of firms subject to SB 826. (OSOF ¶¶ 94.) Granite was awarded a $22 million public contract by the California DOT in February 2019. (*Id*. ¶ 95.) Not unlike the City of San Jose's program, which required prime contractors to grant preferential treatment to women/minority-owned subcontractors, SB 826 violates section 31 because it requires California-based publicly traded public contractors like Granite to grant preferential treatment to women on their boards.

IV. CONCLUSION.

For the foregoing reasons, Defendant's motion should be denied.

Dated: September 7, 2021

JUDICIAL WATCH, INC.

By: */s/ Robert Patrick Sticht.*
ROBERT PATRICK STICHT

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California.

Defendant.

Case No. 19STCV27561

PLAINTIFFS' STATEMENT OF MATERIAL FACTS IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation No. 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

Plaintiffs Robin Crest, Earl De Vries, and Judy De Vries, pursuant to Cal. Code Civ. P. § 437c and Cal. R. Ct., Rules 3.1350-3.1354, respectfully submit the following material facts, supporting evidence, and references to objections in opposition to Defendant's motion for summary judgment.

Dated: September 7, 2021

JUDICIAL WATCH, INC.

By: */s/ Robert Patrick Sticht.*
ROBERT PATRICK STICHT

Attorneys for Plaintiffs
Robin Crest, Earl De Vries, and Judy De Vries

[1] Dr. Shirley N. Weber is the current Secretary of State.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
	ISSUE NO. 1 ***PLAINTIFFS HAVE FAILED TO STATE A CLAIM UNDER ARTICLE I, § 31***	
1.	The California Constitution prohibits discrimination on the basis of sex in the operation of public employment, public education, or public contracting. Cal. Const., art. I, § 31.	Undisputed.
2.	Senate Bill No. 826 (SB 826) requires that publicly held corporations with headquarters in California have 1 female director on their corporate boards by the end of 2019, and, by the end of 2021, corporations must have 2 female directors if the board has 5 seats, and 3 female directors if the board has 6 or more seats. Corp. Code, § 301.3, subd. (a); (b).	Undisputed.
3.	SB 826 does not impose any requirements on corporations relating to their involvement in public employment, public education, or public contracting. Corp. Code, § 301.3.	Disputed. SB 826 requires all publicly traded corporations headquartered in California, domestic and foreign, including corporations involved in public contracting, to have at least one female director on their boards by the end of 2019 and, depending on the size of the board, up to three female directors on their boards by the end of 2021. Plfs' Evid ISO MSJ, Ex. A (Chaptered Bill).
4.	The Secretary of State's office administers SB 826. Corp. Code, § 301.3.	Undisputed.
5.	The Secretary of State's office does not consider the industry or business of a corporation subject to SB 826's requirements when it determines whether a corporation is in compliance with SB 826. Bogart Decl., ¶ 9.	Undisputed.
6.	The Secretary of State's office served requests for interrogatories	Undisputed.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
	on Plaintiffs, and in those requests, asked in Special Interrogatory No. 24, "If it is YOUR contention that SB 826 violates California Constitution, Article I, § 31, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5 Ex. C, p. 11.	
7.	On June 7, 2021, Plaintiffs' counsel objected and responded to Special Interrogatory No. 24, "Without waiving this objection, Plaintiffs state that they have not yet determined whether they intend to pursue the contention that SB 826 violates article I, section 31 of the California Constitution." Haddad Decl., ¶ 5, Ex. C, p. 11.	Disputed. On August 19, 2021, Plaintiffs supplemented their response to Special Interrogatory No. 24 as follows: "Plaintiffs object that this question is impermissibly compound as it asks at least three questions concerning Cal. Const. Art. I, § 31. Without waiving this objection, Plaintiffs answer as follows: Plaintiffs contend that SB 826 discriminates against persons who do not identify as "female" as that term is defined in SB 826 and are current or prospective members of corporate boards of publicly held corporations headquartered in California and engaged in public contracting with the State by imposing sex- and/or gender-based quotas for self-identified "female" persons thereby granting preferential treatment to self-identified "female" persons in the operation of public contracting. For example, Granite Construction was awarded a $22 million contract by the California Department of Transportation in February 2019 according to a company news release, available at https://www.graniteconstruction.com/newsroom/granite-awarded-22-million-highway-contract-california. Granite Construction appears on Defendant Secretary of State's July 2019 and March 2020 reports, available at https://www.sos.ca.gov/business-programs/women-boards. Section 31 categorically prohibits discrimination and preferential treatment and bars the State from requiring private, publicly held corporations to discriminate or grant preferential treatment in the operation of public contracting." Plfs' Evid. IOT Def's MSJ, Ex. AM at 3-4.
8.	The Secretary of State's office also asked in Special Interrogatories Nos. 25, 26, and 27, whether it was Plaintiffs' contention that SB 826 discriminates against any individual in the operation of public employment, public education, or public contracting. Haddad Decl., ¶ 5, Ex. C, pp. 11-12.	Undisputed.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
9.	On June 7, 2021, in response to the Secretary of State's office's Special Interrogatories Nos. 25, 26, and 27, Plaintiffs' counsel objected and responded to each: "Without waiving this objection, Plaintiffs state that they have not yet determined whether they intend to pursue the contention that SB 826 violates Article I, section 31 of the California Constitution." Haddad Decl., ¶ 5, Ex. C, p. 11-12.	Disputed. On August 19, 2021, Plaintiffs supplemented their response to Special Interrogatory No. 25 as follows: "Plaintiffs object that this question is impermissibly compound. Without waiving this objection, Plaintiffs state that they have not yet determined whether they will contend that SB 826 discriminates against any individual in the operation of public employment." Plaintiffs supplemented their response to Special Interrogatory No. 26 as follows: "Plaintiffs object that this question is impermissibly compound. Without waiving this objection, Plaintiffs state that they have not yet determined whether they will contend that SB 826 discriminates against any individual in the operation of public education." Plaintiffs supplemented their response to Special Interrogatory No. 27 as follows: "Plaintiffs object that this question is impermissibly compound. Without waiving this objection, Plaintiffs answer as follows: Plaintiffs contend that SB 826 discriminates against persons who do not identify as "female" as that term is defined in SB 826 and are current or prospective members of corporate boards of publicly held corporations headquartered in California and engaged in public contracting with the State by imposing sex- and/or gender-based quotas for self-identified "female" persons thereby granting preferential treatment to self-identified "female" persons in the operation of public contracting. For example, Granite Construction was awarded a $22 million contract by the California Department of Transportation in February 2019 according to a company news release, available at https://www.graniteconstruction.com/newsroom/granite-awarded-22-million-highway-contract-california. Granite Construction appears on Defendant Secretary of State's July 2019 and March 2020 reports, available at https://www.sos.ca.gov/business-programs/women-boards. Section 31 categorically prohibits discrimination and preferential treatment and bars the State from requiring private, publicly held corporations to discriminate or grant preferential treatment in the operation of public contracting." Plfs' Evid. IOT Def's MSJ, Ex. AM at 4-5.
	ISSUE NO. 2 PLAINTIFFS CANNOT MEET THE THRESHOLD REQUIREMENT OF AN EQUAL PROTECTION CLAIM BECAUSE SB 826 DOES NOT DISTINGUISH BETWEEN TWO SIMILARLY SITUATED GROUPS	
10.	California case law holds, "A prerequisite to a meritorious equal protection claim is a showing that	Disputed. Plaintiffs object because the assertion is a legal conclusion, not a statement of fact. Plaintiffs also note that the purported quote from *Cooley v. Superior*

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
	the state has adopted a classification that affects two or more *similarly situated* groups in an unequal manner" for the purposes of the law challenged. *Cooley v. Superior Court* (2002) 29 Cal.4th 228, 253 (emphasis in original).	*Court* (2002) 29 Cal.4th 228, 253 does not appear in that case but would appear to be counsel's paraphrase of the case represented as a quote. Plfs' Objs To Def's Evid., Obj. No. 1
11.	In 2018, more than a quarter of public companies headquartered in California did not have a single woman on their boards of directors. SB 826, § 1, subd. (e); Grounds Decl., ¶ 30.	Disputed. The evidence cited does not support the assertion because (a) SB 826, § 1(e) refers to companies in the Russell 3000 Index, a stock index that tracks the performance of the 3000 largest U.S.-traded stocks. Large-cap stocks direct a majority of the index's performance, while the returns of mid-cap and small-cap stocks are overlooked;and (b), in particular, the study cited in the Grounds declaration does not demonstrate that it relies on 2018 data but instead relies on data from an unidentified time period submitted to the SEC in June 2018. Plaintiffs also object because the Grounds declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Plfs' Evid ISO Plfs' MSJ, Ex. A at 2 (SB 826 §1(e); Plfs' Evid IOT Def's MSJ, Ex. AJ (Russell 3000 Index Definition-Investopedia); Grounds Decl., ¶ 30; Id. at 15 n.33; Plfs' Evid IOT Def's MSJ, Ex. AK at 12 (Women on Boards of Public Companies Headquartered in California, 2018 Report); Plfs' Objs To Def's Evid., Obj. No. 2
12.	In 2018, 53% of smaller public companies headquartered in California, known as microcap companies, had no women on their corporate boards. Grounds Decl., ¶ 31.	Disputed. The evidence cited does not support the assertion and, in particular, the study cited in the Grounds declaration does not purport to rely on 2018 data but instead relies on data from an unidentified time period submitted to the SEC in June 2018. Plaintiffs also object because the Grounds declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Grounds Decl., ¶ 31; Id. at 15 n.34; Plfs' Evid IOT Def's MSJ, Ex. AK at 12 (Women on Boards of Public Companies Headquartered in California, 2018 Report); Plfs' Objs To Def's Evid., Obj. No. 2.
13.	In 2018, only 15.5% of corporate board seats at public companies headquartered in California were	Disputed. The evidence cited does not support the assertion and, in particular, the Grounds declaration references only those publicly traded companies

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
	held by women. Grounds Decl., ¶ 29.	headquartered in California that are traded on the NYSE or NASDAQ. In addition, the study cited in the Grounds declaration does not purport to rely on 2018 data but instead relies on data from an unidentified time period submitted to the SEC in June 2018. Plaintiffs also object because the Grounds declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Grounds Decl., ¶ 29; Id. at 14 n.30; Plfs' Evid IOT Def's MSJ, Ex. AK at 12 (Women on Boards of Public Companies Headquartered in California, 2018 Report); Plfs' Objs To Def's Evid., Obj. No. 2.
14.	As of 2020, in the United States, only 22.6% of board seats on the largest 3,000 publicly traded companies in the United States were held by women. Schipani Decl., ¶ 21.	Disputed. Plaintiffs object to the assertion as neither relevant nor material because 2020 data cannot have had any bearing on the Legislature's enactment of SB 826 in 2018. Plaintiffs also object because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Plfs' Objs To Def's Evid., Obj. Nos. 2, 3
15.	As of 2020, in the United States, only 18.2% of board seats on the 1,000 smallest companies listed in the Russell 3000 index had women on their corporate boards. Schipani Decl., ¶ 27.	Disputed. Plaintiffs object to the assertion as neither relevant nor material because 2020 data cannot have had any bearing on the Legislature's enactment of SB 826 in 2018. Plaintiffs also object because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Plfs' Objs To Def's Evid., Obj. Nos. 2
16.	The U.S. Government Accountability Office estimated in 2015 that it would take four decades before women's representation on boards of U.S. publicly traded companies is equal to men's if trends continue. Schipani Decl., ¶ 32.	Disputed. The evidence cited does not support the assertion. The Schipani declaration only asserts that it "could" (not "would") take four decades for women's board participation to be "on par" with men's board participation. In addition, the GAO study on which the Schipani declaration relies was limited to the boards of S&P 1500 companies, not all publicly traded companies, and included assumptions and limitations not reflected in either the assertion or the Schipani declaration. Plaintiffs also object to the extent that the assertion is not limited to publicly traded corporations headquartered in California and is generalized and conclusory insofar as it does not take into account any number of variables that may bear on board composition, including but not limited to

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Schipani Decl. ¶ 32; Id. at 10 n.35; Plfs'Evid ISO MSJ, Ex. R at 9 & Appendix I thereto, at 28-29; Plfs' Objs To Def's Evid., Obj. No. 2.
17.	In terms of comparative numbers, women are underrepresented on corporate boards as compared to men. SB 826, § 1, subd. (e) Schipani Decl., ¶¶ 27, 32, 84, 87	Disputed. Plaintiffs object because the term "underrepresented" is a normative term and therefore the assertion is not a statement of fact. Plaintiffs also object because the assertion is indefinite as to time frame and therefore is irrelevant and immaterial. Plaintiffs object further because the assertion is not limited to publicly traded corporations headquartered in California and is generalized and conclusory insofar as it does not take into account any number of variables that may bear on board composition, including but not limited to corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Plaintiffs do not dispute that, at the time of SB 826's enactment, more men than women serve on the boards of publicly traded corporations headquartered in California. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4
18.	Women are underrepresented on boards in part because individuals tend to nominate individuals who are similar to them, often resulting in men nominating men. Schipani Decl., ¶¶ 36-37, 89.	Disputed. The evidence cited does not support the assertion. Plaintiffs also object because the term "underrepresented" is a normative term and therefore the assertion is not a statement of fact. Plaintiffs object further because the assertion is indefinite as to time frame, there is no evidence that the Legislature considered any such alleged assertion in enacting SB 826, and at least one of the studies on which the Schipani declaration relies, the 2020 National Association of Corporate Directors report, post-dates SB 826's enactment and therefore cannot have had any bearing on SB 826's enactment. Plaintiffs object further because the assertion is generalized and conclusory and does not purport to address any particular decision by a publicly traded corporation headquartered in California regard nominating an individual to serve on its board or even

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		publicly traded corporations headquartered in California generally. It also is generalized and conclusory insofar as it does not take into account any number of variables that may bear on board composition, including but not limited to corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4
19.	Women are underrepresented on boards in part because corporate boards fail to prioritize recruiting women, there are few women who have CEO or board experience, and there is low turnover on boards that entrenches current underrepresentation. Schipani Decl., ¶ 35.	Disputed. Plaintiffs object because the term "underrepresented" is a normative term and therefore the assertion is not a statement of fact. Plaintiffs also object because the assertion is indefinite as to time frame and there is no evidence that the Legislature considered any such alleged assertion in enacting SB 826. Plaintiffs object further that the assertion is generalized and conclusory and does not purport to address or concern any particular decision by a publicly traded corporation headquartered in California regard nominating an individual to serve on its board or even publicly traded corporations headquartered in California generally. It also is generalized and conclusory insofar as it does not take into account any number of variables that may bear on board composition, including but not limited to corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4
20.	Women on corporate boards are less likely to chair board committees, which affects their ability to serve on other boards. Konrad Decl., ¶ 27.	Disputed. The evidence cited does not support the assertion. Konrad states, "while sitting on multiple boards is a positive predictor for men of chairing key board committees, women directors do not get the same advantages." Plaintiffs also object because the assertion is indefinite as to time frame and there is no evidence that the Legislature considered any such alleged assertion in enacting SB 826. Plaintiffs object further that the evidence cited does not purport to address publicly traded corporations headquartered in California but instead merely references "corporations" generally and those U.S. corporations included on the S&P 1500 index.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		Plaintiffs object further because the assertion is generalized and conclusory insofar as it does not take into account any number of factors that may bear on board composition, including but not limited to corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Konrad Decl., ¶ 27; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3
21.	Gender pay gaps favoring men that are not explained by performance differences exist in the workplace. Konrad Decl., ¶ 22.	Disputed. Plaintiffs object on relevance grounds because the assertion neither concerns nor relates to board composition or women on corporate boards. Plaintiffs also object because the evidence cited does not reference board positions but only "highly qualified professionals," including engineers, technicians, scientists, inventors, and MBAs, and as such is neither relevant nor material to board positions. Plaintiffs object further because there is no evidence that the Legislature considered any such purported assertion in enacting SB 826, and none of the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses employers generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect employee compensation, including but not limited to education and experience, occupation, geographic location, employer size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶ 22
22.	Women experience gender bias in the workplace. Konrad Decl., ¶¶ 17, 19, 20, 21, 29	Disputed. Plaintiffs object because the assertion is indefinite as to time frame and neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses employers and workplaces generally. Plaintiffs also object because the assertion is generalized and conclusory and makes no effort to

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		account or otherwise control for any number of variables that may affect the workplace experience, including but not limited to education and experience, occupation, geographic location, employer size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 17, 19, 20, 21, 29
23.	In general, women are promoted less often than men because of gender bias. Konrad Decl., ¶ 23-24	Disputed. Plaintiffs object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California and the evidence cited concerns addresses "women in management and the professions" generally and not board members specifically. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect employee promotion, including but not limited to education and experience, occupation, geographic location, employer size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 23-24
24.	Gender bias is a major factor that inhibits women in the workplace, including from getting promotions and board seat nominations. Schipani Decl., ¶¶ 38, 40-41, 44-45, 90-93; Konrad Decl., ¶ 23, 29, 57.	Disputed. Plaintiffs object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead purportedly address employers and workplaces anywhere and everywhere generally. Plaintiffs also object because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect the workplace experience, employee promotions, and board nominations, including but not limited to education and experience, occupation, geographic location, employer size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani and Konrad declarations

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		were not before the Legislature when it considered SB 826 and therefore factual assertions based on them are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Schipani Decl. ¶¶ 38, 40-41, 44-45, 90-93; Konrad Decl. ¶ 23, 29, 57
25.	Women are underrepresented on corporate boards because of gender discrimination. Konrad Decl. ¶¶ 18, 57, 60; Schipani Decl. ¶¶ 35, 88-89, 95	Disputed. Plaintiffs object because the term "underrepresented" is a normative term and therefore the assertion is not a statement of fact. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani and Konrad declarations were not before the Legislature when it considered SB 826 and therefore factual assertions based on them are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4; Konrad Decl. ¶¶ 18, 57, 60; Schipani Decl. ¶¶ 35, 88-89, 95
26.	Women are not underrepresented on corporate boards because of being unqualified or unwilling to serve as directors. Grounds Decl., ¶¶ 41-45, 48; Schipani Decl., ¶ 20, 86.	Disputed. Plaintiffs object because the term "underrepresented" is a normative term and therefore the assertion is not a statement of fact. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporate boards generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Grounds and Schipani declarations were not before the Legislature when it considered SB 826 and therefore factual assertions based on them are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
27.	SB 826 permits corporations to add director seats to their boards [to] comply with the bill. Code, § 301.3, subd. (a).	Undisputed.
28.	SB 826 does not require that any man be removed from a director seat in order for a corporation to comply with SB 826's requirements. Corp. Code, § 301.3.	Disputed. Where adding director seats to corporate boards is not feasible SB 826 compliance requires replacing a male director with a female candidate. Corp. Code § 301.3
29.	SB 826 does not require that any man be denied a position for a director seat in order for a corporation to comply with SB 826's requirements. Corp. Code, § 301.3.	Disputed. On its face, SB 826 requires men be denied or not even considered for board positions reserved or set aside for women. Corp. Code, § 301.3.
30.	At a senate committee hearing on SB 826, Senator Jackson stated, "[The bill] does not say we are going to kick any men off." Haddad Decl., ¶ 4 [hearing timestamp 1:02].	Disputed. Plaintiffs do not dispute that Senator Jackson made the statement: "It doesn't say we're going to kick any men off; it doesn't say that at all." Plaintiffs dispute the inference drawn therefrom that SB 826 does not discriminate against men because, on its face, the statute requires men be denied board positions reserved or set aside for women solely on the basis of their sex and/or gender. Corp. Code, § 301.3.
31.	At a senate committee hearing on SB 826, Senator Jackson stated, "[W]e are not trying to replace men on the board . . . "We are just adding a position, that will be filled by a woman." Haddad Decl., ¶ 4 [hearing timestamp 1:21].	Disputed. Plaintiffs do not dispute that Senator Jackson made the statement: "we are not trying to replace men on a board . . . We are simply adding a position that will be filled by a woman." Plaintiffs dispute the inference drawn therefrom that SB 826 does not discriminate against men because, on its face, the statute requires men be denied board positions reserved or set aside for women solely on the basis of their sex and/or gender. Corp. Code, § 301.3.
32.	The Secretary of State's office served special interrogatory requests on Plaintiffs and asked in Special Interrogatories Nos. 14 and 15 if it is Plaintiffs' contention that SB 826 discriminates against any individual or group, to state all facts for the basis of the contention.	Plaintiffs do not dispute that Special Interrogatory No. 14 asked, "If it is YOUR contention that SB 826 discriminates against any individual, state all facts upon which YOU base this contention," or that Special Interrogatory No. 15 asked, "If it is YOUR contention that SB 826 discriminates against any group, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5, Ex. C, pp. 7-8.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
	Haddad Decl., ¶ 5, Ex. C, pp. 7-8.	
33.	On June 7, 2021, in response to the Secretary of State's office's Special Interrogatories Nos. 14 and 15, Plaintiffs' counsel objected, and responded to each: "Without waiving these objections, Plaintiffs state that the question does not accurately describe their contentions." Haddad Decl., ¶ 5, Ex. C, pp. 7-8.	Disputed in part. Plaintiffs do not dispute that, after objecting to Special Interrogatory No. 14, they responded as indicated. Plaintiffs dispute that they responded as indicated to Special Interrogatory No. 15. Rather, after objecting to Special Interrogatory No. 15, Plaintiffs responded: "Without waiving this objection, Plaintiffs state that SB 826 discriminates against all persons who do not identify as 'female,' as that term is defined in SB 826, by imposing sex- and/or gender-based quotas for self-identified 'female' persons." Haddad Decl., ¶ 5, Ex. C, pp. 7-8.
34.	The Secretary of State asked in Special Interrogatory No. 16, "If it is YOUR contention that men are similarly situated to women for purposes of a claim under California Constitution, Article I, § 7, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5, Ex. C, p. 8.	Undisputed.
35.	On June 7, 2021, in response to the Secretary of State's office's Special Interrogatory No. 16, Plaintiffs' counsel objected and responded: "Without waiving these objections, Plaintiffs state that the question does not accurately describe their contentions." Haddad Decl., ¶ 5, Ex. C, p. 8.	Undisputed. Plaintiffs stand by their proper objections, which, among other grounds, demonstrated that the interrogatory did not reference or was not otherwise limited to SB 826 and therefore was not relevant or reasonably calculated to lead to the discovery of admissible evidence. Haddad Decl., ¶ C, p. 8.
ISSUE NO. 3 PLAINTIFFS' CLAIM FAILS BECAUSE SB 826 PASSES STRICT SCRUTINY REVIEW		
36.	A legislative committee report described SB 826's purpose as "to remedy a long and well-documented history of discrimination depriving women of the equal opportunity (or, in many cases, any opportunity at all) to serve on corporate boards." Haddad Decl., ¶ 3, Ex. B, p. 12.	Disputed. Plaintiffs object to the assertion because the quoted language is taken out of context, and, in particular, omits the remainder of the sentence, which asserts that the author of SB 826 "proposes to elaborate on this more explicitly within the findings and declarations," something she never did. The same paragraph from which the quotation is taken also states that the "findings and declarations" of SB 826 "do not explicitly draw" a link between the number of women serving on corporate boards and discrimination. It continues: "Given the high bar set for meeting strict

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		scrutiny, and court commentary on what sort of evidence of past discrimination will be required to meet it, the author is considering adding findings that point to specific forms of past or present gender discrimination that further justify, from a judicial point of view, enacting a remedial approach like the one proposed by the bill." Twice in the same report it is recommended that the author obtain "specific information" regarding gender discrimination. At no point in any of the future readings of the bill or analyses does anyone provide the asserted purpose or specific evidence of it. Haddad Decl., Ex. B at 12-13
37.	A legislative committee report noted that the disparity between men and women on corporate boards "raises important questions and concerns related to structural discrimination and gender equity." Haddad Decl., ¶ 2, Ex. A, p. 2.	Disputed. The evidence cited does not support the assertion. The disparity referenced in the report was not between men and women, but between women's participation in the labor force and their participation on corporate boards. Plaintiffs also object because the quoted language is not itself a factual assertion but is an assertion about "questions and concerns" being raised. Haddad Decl., Ex. A at 2.
38.	At a senate committee meeting on SB 826, Senator Jackson stated, "We as policy makers, I think, have a responsibility to try to break open those impenetrable walls of discrimination." Haddad Decl., ¶ 4 [hearing testimony timestamp 1:03].	Disputed. Plaintiffs do not dispute that Sen. Jackson said, "So, we as policy makers I think have a responsibility to try to break open those – those impenetrable walls of discrimination. We did that with my equal pay bill back three years ago." Plaintiffs dispute its admissibility and the inference drawn therefrom that remedying societal discrimination and inherent bias is the Legislature's purpose for SB 826 as it is not in the Legislature's findings and declarations. Plaintiffs also object that Sen. Jackson's statement is irrelevant because the Legislature's findings and declarations, which omit any reference to discrimination, speak for the entire Legislature and are the best evidence of its purpose. Plfs' Evid IOT Def's MSJ, Ex. AL at 36; SB 826, 2018 Stats. ch. 954, § 1; Plfs' Obs To Def's Evid, Obj. No. 5
39.	At a senate committee meeting on SB 826, Senator Jackson stated, "When they're discriminating on the basis of gender, that is an unlawful discrimination. We simply said 'you've got to treat us equally.'" Haddad Decl., ¶ 4, [hearing testimony timestamp 1:03].	Disputed. Plaintiffs do not dispute that Sen. Jackson said, "How is it we can tell companies what to do well when they're discriminating on the basis of gender? That is an unlawful discrimination. And so, what we simply said is you've got to treat us equally and we are here on this situation when it comes to adding a board seat." Plaintiffs dispute its admissibility and the inference drawn therefrom that remedying societal discrimination and inherent bias is the Legislature's purpose for SB 826 as it is not in the Legislature's findings and declarations.

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		Plaintiffs also object that Sen. Jackson's statement is irrelevant because the Legislature's findings and declarations, which omit any reference to discrimination, speak for the entire Legislature and are the best evidence of its purpose. Plfs' Evid IOT Def's MSJ, Ex. AL at 36;SB 826, 2018 Stats. ch. 954, § 1; Plfs' Obs To Def's Evid, Obj. No. 5
40.	At a senate committee meeting on SB 826, Senator Monning thanked Senator Jackson for her continued efforts in trying to address "well-documented discrimination in our system." Haddad Decl., ¶ 4, [hearing testimony timestamp 1:15].	Disputed. Plaintiffs do not dispute that Sen. Monning said, "I just wanted to first thank the author for bringing this forward. And for her continued advocacy in terms of trying to bridge the gaps that are well-documented discrimination in – in – in our system." Plaintiffs object because in the same breath he continued: "I just want to align myself though, also, with Senator Hertzberg because the spirit of his questions and I don't know that you're hearing it that way is how to protect this from constitutional attack?" Plaintiffs dispute the its admissibility and the inference drawn therefrom that remedying societal discrimination and inherent bias is the Legislature's purpose for SB 826 as it is not in the Legislature's findings and declarations. Plaintiffs also object that Sen. Monning's statement is irrelevant because the Legislature's findings and declarations, which omit any reference to discrimination, speak for the entire Legislature and are the best evidence of its purpose. Plfs' Evid IOT Def's MSJ, Ex. AL at 48-49; SB 826, 2018 Stats. ch. 954, § 1; Plfs' Obs To Def's Evid, Obj. No. 5
41.	The Legislature said in its findings that SB 826 would improve opportunities for women in the workplace, but if no steps were taken, it would take "40 or 50 years to achieve gender parity." SB 826, § 1, subd. (a).	Disputed. The quoted language refers to achieving gender parity on corporate boards, not improving opportunities for women in the workplace: "Yet studies predict that it will take 40 or 50 years to achieve gender parity, if something is not done proactively." SB 826, 2018 Stats. ch. 954, § 1(a).
42.	Women are underrepresented on corporate boards because of gender discrimination. Konrad Decl. ¶¶ 18, 57, 60; Schipani Decl. ¶¶ 35, 88-89, 95; See Separate Statement of Material Facts, *supra*, ¶¶ 17-26.	Disputed. Plaintiffs object because the term "underrepresented is a normative term and therefore the assertion is not a statement of fact. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations and corporate boards generally. Plaintiffs further object because the assertion is indefinite as to time frame, generalized and conclusory, and makes

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		no effort to account or otherwise control for the enormous number of variables that may affect board composition, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani and Konrad declarations were not before the Legislature when it considered SB 826 and therefore factual assertions based on them are irrelevant and immaterial. Klick Decl., ¶¶ 9-22, 108-116, 124-130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3, 4; Konrad Decl. ¶¶ 18, 57, 60; Schipani Decl. ¶¶ 35, 88-89, 95; Plaintiffs' Response and Evidence, *supra*, ¶¶ 17-26.
43.	SB 826 fulfills the compelling state interest of increased gender diversity. *Grutter v. Bollinger* (2003) 539 U.S. 306, 328.	Disputed. Plaintiffs object because the statement is a legal conclusion, not an assertion of fact. The cited case also is not the proper subject of judicial notice. Plaintiffs also object that the statement is an incorrect reading of *Grutter*, which addresses the unique needs and circumstances of higher education (law school admissions, specifically) not corporate boards of publicly traded corporations. Plfs' Objs To Def's Evid., Obj. Nos. 1; *Grutter v. Bollinger* (2003) 539 U.S. 306, 328 (deferring to the law school's educational judgment that a diverse student body is essential to its educational mission).
44.	The Legislature discussed in its findings the benefits of gender diversity for corporations and corporate performance. SB 826, § 1, subd. (c).	Disputed. The cited provision of SB 826 purported to summarize the findings of four studies, all of which disclaimed a causal relationship between the number of women on corporate boards and corporate performance, as did at least two other studies cited elsewhere in SB 826. SB 826, 2018 Stats ch. 954, §§ 1(c), (f)(1), and (g)(2)(A); Plfs' Evid ISO Plfs' MSJ, Ex. M at 3; Ex. N at 4, Ex. O at 3, Ex. P at 15, Ex. Q at 4, Ex. R at 5; *see also* Plfs' Statement of Undisputed Material Facts In Support of Plfs' Motion for Summary Judgment ("Plfs' Stmt of Facts") at ¶¶ 15-16 and 20-21.
45.	Gender diversity on corporate boards correlates to better corporate performance. Schipani Decl., ¶¶ 96, 100, 105 Konrad Decl., ¶¶ 36, 63.	Disputed. Plaintiffs object because a correlation does not establish a causal relationship and therefore the assertion is irrelevant, immaterial, and misleading. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only

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		addresses corporations and corporate boards generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition or corporate performance, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani and Konrad declarations were not before the Legislature when it considered SB 826 and therefore factual assertions based on them are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Schipani Decl. ¶¶ 96, 100, 105; Konrad Decl. ¶¶ 36, 63.
46.	Gender diversity on corporate boards has been linked to improved monitoring by boards of directors and team productivity. Schipani Decl., ¶¶ 97, 98.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object because the terms "improved monitoring" and "team productivity" are vague and ambiguous. Plaintiffs object further because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses employers and workplaces generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition, board activity, or team or corporate productivity, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Schipani Decl., ¶¶ 97, 98.
47.	Gender diversity on corporate boards is linked to improved corporation ethical behavior. Konrad Decl., ¶ 37.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object because neither the assertion nor the evidence

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses employers and workplaces generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition or corporate ethics, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶ 37.
48.	Gender diversity on corporate boards is linked to lower incidents of corporations overstating the firm's value. Konrad Decl., ¶¶ 38-40.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses employers and workplaces generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and statements about corporate valuation, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 38-40.
49.	Gender diversity on corporate boards is linked to lowering excess CEO compensation. Konrad Decl., ¶¶ 41-43.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only

	DEFENDANT'S MATERIAL FACTS AND ALLEGED SUPPORTING EVIDENCE	PLAINTIFFS' RESPONSE AND EVIDENCE
		addresses employers and workplaces generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and CEO compenstion, including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos.2, 3; Konrad Decl. ¶¶ 41-43.
50.	Gender diversity on corporate boards is linked to improved corporate social responsibility. Konrad Decl., ¶¶ 44-45.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object that the term "corporate social responsibility" is vague and undefined. Plaintiffs object further because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations and corporate boards generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and "corporate social responsibility", including but not limited to corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 44-45.
51.	Gender diversity on corporate boards is linked to better gender equity, including reducing the gender earnings gap. Konrad Decl., ¶¶ 46-47.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiff also objects because the term "gender equity" is vague and ambiguous. Plaintiffs object further because neither the assertion nor the evidence cited in support of the

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		assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations and corporate boards generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and individual pay decisions, including but not limited to education and experience, occupation, geographic location, corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 46-47.
52.	Gender diversity on corporate boards is linked to better calculated risk-taking by corporations. Konrad Decl., ¶¶ 48-50.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, a mere correlation, or something else. Plaintiffs also object because neither the assertion nor the evidence cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations and corporate boards. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and corporate risk-taking, including but not limited to education and experience, geographic location, competition, corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 48-50.
53.	Gender diversity on corporate boards is linked to more positive firm performance in terms of stock market share.	Disputed. Plaintiffs object that the term "linked" is imprecise and undefined and does not identify whether Defendant asserts the existence of a causal relationship, merely a correlation, or something else. Plaintiffs also object because neither the assertion nor the evidence

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	Konrad Decl., ¶¶ 51-55.	cited in support of the assertion addresses publicly traded corporations headquartered in California but instead only addresses corporations and corporate boards generally. Plaintiffs object further because the assertion is indefinite as to time frame, generalized and conclusory, and makes no effort to account or otherwise control for the enormous number of variables that may affect board composition and market share, including but not limited to education and experience, occupation, geographic location, corporate size and history, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Konrad declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Klick Decl., ¶¶ 10, 11, 16 at n.6, 23-24, 39, 44, 51, 66, 70, 88, 98, 108-110, 117-120, 122-124, 130; Plfs' Objs To Def's Evid., Obj. Nos. 2, 3; Konrad Decl. ¶¶ 51-55.
54.	SB 826 serves the compelling state interest of preserving public pension plans. *McGlynn v. State of California* (2018) 21 Cal.App.5th 548, 564-565.	Disputed. The assertion is a legal conclusion, not a factual statement. The cited case also is not the proper subject of judicial notice. In addition, *McGlynn v. State of California* (2018) 21 Cal.App.5th 548, 564-65 does not hold that there is a compelling state interest in preserving public pension plans generally or in non-crisis, non-urgent circumstances, and its compelling state interest discussion is *dicta*. *Ibid*. (finding appellants had no vested rights in benefits at issue, but stating, "even if we were to apply strict scrutiny" there is a compelling state interest in "resurrecting the actuarial viability of public retirement systems and avoiding the draconian consequences that will occur if public pension liabilities remain underfunded.") Plfs' Objs To Def's Evid., Obj. No. 1; *McGlynn v. State of California* (208) 21 Cal.App.5th 548, 564-565.
55.	SB 826 serves the compelling state interest of preserving public confidence in the state. *Williams-Yulee v. Florida Bar* (2015) 575 U.S. 433, 446-48.	Disputed. The assertion is a legal conclusion, not a factual statement. The cited case also is not the proper subject of judicial notice. In addition, *Williams-Yulee v. Florida Bar* (2015) 575 U.S. 433, 446-48 does not stand for the proposition that there is a compelling state interest in preserving public confidence in the state generally, but only in the limited context of preserving public confidence in the state's judiciary by restricting, under the First Amendment, candidates for judicial office from personally soliciting campaign contributions in an election.

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		Plfs' Objs To Def's Evid., Obj. No. 1; *Williams-Yulee v. Florida Bar* (2015) 575 U.S. 433, 446-48.
56.	The Legislature found that more women serving on corporate boards would "protect California taxpayers, shareholders, and retirees, including retired California state employees and teachers whose pensions are managed by CalPERS and CalSTRS." SB 826, §1, subd. (a).	Undisputed.
57.	When corporations' profitability improves, corporate tax revenues likely increase, which benefits the State's budget. Chamberlain Decl., ¶¶ 5-6.	Disputed. The evidence cited does not support the assertion, which appears to be an incomplete and inaccurate summary or paraphrase of the evidence as it references "increases" not "improvements" in net income of corporations headquartered in or doing business in the State: "When the net income of corporations that are headquartered in or do business in the State increases, this is likely to cause corporate tax revenues to increase as well. This, in turn, benefits the State's budget." Other factors influencing tax revenues include "its income (or profits)," "how much of its income is apportioned to California," and its "use of tax credits." Chamberlain Decl., ¶¶ 5-6.
58.	The largest source of retirement funding for CalPERS is CalPERS' investments in corporations. Nzima Decl., ¶ 4.	Disputed. The evidence cited does not support the assertion, which appears to be an incomplete and inaccurate summary or paraphrase of the evidence. The evidence states, "CalPERS' investments constitute the largest source of retirement funding." It continues, "CalPERS' investments in publicly-traded corporations are a large portion of CalPERS' total investments." And it states, "CalPERS' investments in publicly-traded companies include publicly-traded corporations that are headquartered in California." Plaintiffs also object because the assertion is vague and ambiguous insofar as whether "retirement funding" refers to member and employer contributions received by CalPERS or benefits paid out to members. Nzima Decl., ¶¶ 4-5.
59.	A large portion of those investments are in publicly traded corporations, including companies headquartered in California.	Disputed. The evidence cited does not support the assertion, which appears to be an incomplete and inaccurate summary or paraphrase of the evidence. The evidence states, "CalPERS' investments constitute the largest source of retirement funding." It continues,

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	Nzima Decl., ¶ 4.	"CalPERS' investments in publicly-traded corporations are a large portion of CalPERS' total investments." And it states, "CalPERS' investments in publicly-traded companies include publicly-traded corporations that are headquartered in California." Nzima Decl., ¶¶ 4-5
60.	When corporations that CalPERS has invested in perform well, there is "a positive impact on CalPERS' total fund market valuation." Nzima Decl., ¶ 5.	Undisputed as to the assertion. Disputed as to the citation. Nzima Decl., ¶ 4.
61.	CalPERS' funded status is also affected by corporate performance. Nzima Decl., ¶ 4-5.	Disputed. The evidence does not support the assertion. The evidence merely states, "Increases to CalPERS' total market valuation positively impact CalPERS' funded status and is a factor used to determine the amount of employer contributions needed from the State of California and contracting agencies." Plaintiffs also object because the term "funded status" is vague and ambiguous and has not been defined. Nzima Decl. ¶ 4.
62.	The U.S. Government Accountability Office estimated in 2015 that it would take four decades before women's representation on boards of U.S. publicly traded companies is equal to men's if trends continue. SB 826, § 1, subd. (f)(1) Schipani Decl., ¶ 32.	Disputed. The evidence cited does not support the assertion. The Schipani declaration only asserts that it "could" (not "would") take four decades for women's board participation to be "on par" with men's board participation. In addition, the GAO study on which the Schipani declaration relies was limited to the boards of S&P 1500 companies, not all publicly traded companies, and included assumptions and limitations not reflected in either the assertion or the Schipani declaration. Plaintiffs also object to the extent that the assertion is not limited to publicly traded corporations headquartered in California and is generalized and conclusory insofar as it does not take into account any number of variables that may bear on board composition, including but not limited to corporate size and history, board size and turnover rates, economic sector or industry, market capitalization, and economic conditions. Plaintiffs object further because the Schipani declaration was not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. SB 826, 2018 Stats ch. 954, § 1(f)(1); Schipani Decl. ¶ 32; Plfs'Evid ISO Plfs' MSJ, Ex. R at 9 & Appendix I thereto, at 28-29.
63.	Since SB 826's passage, the	Disputed. Plaintiffs object that the assertion is neither

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	percentage of women serving on corporate boards of publicly held California corporations has increased from 15.5% to 26.5%. Grounds Decl., ¶¶ 37-38, 47.	relevant nor material to whether SB 826 violates article I, section 7 of the California Constitution. Plaintiffs also object that the assertion is vague and ambiguous as it fails to identify what the purported percentages are meant to reflect, *i.e.*, percentage of total number of board positions occupied by women, percentage of board positions of individual impacted corporations occupied by women, or something else. Plaintiffs do not dispute that, since SB 826's gender-based quota took effect, some publicly traded corporations headquartered in California have sought to comply with the quota by adding one or more women to their boards. Plfs' Objs To Def's Evid., Obj. No. 3
64.	As of March 2021, only 1.3% of publicly held corporations headquartered in California have zero women on their boards. Grounds Decl., ¶¶ 35, 47.	Disputed. Def's March 1, 2021 Report shows a significant number of impacted corporations do not have at least one woman on their board. Plfs'Evid ISO Plfs' MSJ, Ex. AF.
65.	As of March 3, 2021, Equilar, a consulting group, estimates that gender parity on corporate boards can now be achieved by 2032. Cindy Schipani Decl., ¶ 34.	Disputed. Plaintiffs object on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. The evidence cited references statistics for Russell 3000 companies, which includes publicly traded companies based throughout the U.S. Plaintiffs also object because the Schipani declaration and the 2021 study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on it are irrelevant and immaterial. Schipani Decl., ¶ 34; Plfs' Evid IOT Def's MSJ, Ex. AJ (Russell 3000 Definition-Investopedia)
66.	A critical mass on corporate boards means there is a sufficient number of women for them to have a significant impact on board deliberations, choices, and actions. Konrad Decl., ¶¶ 30, 61.	Disputed. Even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis is unwarranted. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Konrad declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial. Klick Decl., ¶¶ 10, 39, 42, 43, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.

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67.	Critical mass is usually considered to be 3 women or 30% of women on a corporate board. Konrad Decl., ¶ 61.	Disputed. Even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis is unwarranted. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Konrad declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial. Klick Decl., ¶¶ 10, 39, 42, 43, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
68.	For smaller boards, critical mass is attained when the proportion of women is roughly 30%. Konrad Decl., ¶ 61.	Disputed. Even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis is unwarranted. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Konrad declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial. Klick Decl., ¶¶10, 39, 42, 43, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
69.	Companies with a critical mass of women on their executive teams are more likely to outperform companies without a critical mass. Schipani Decl., ¶ 61.	Disputed. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Schipani declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial. Klick Decl., ¶ 10, 39, 42, 43, 121, 130???; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
70.	Having a critical mass of women on corporate boards is important for women to influence decision making rather than be perceived as mere tokens. Schipani Decl., ¶ 60.	Disputed. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Schipani declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial.

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		Klick Decl., ¶¶ 10, 39, 42, 43, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
71.	Three women on an average-sized corporate board improves women's experiences on corporate boards and improves board decision-making and financial performance. Konrad Decl., ¶¶ 34, 62. Schipani Decl., ¶¶ 101, 102.	Disputed. Even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis is unwarranted. Plaintiff also objects on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Konrad and Schipani declarations and the studies they cite were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declarations and studies are irrelevant and immaterial. Klick Decl., ¶¶ 10, 39, 42, 43, 109-110, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
72.	On average-sized boards, studies tend to show that one woman director or two women directors do not change the corporate culture, but three women are able to do so. Konrad Decl., ¶ 35.	Disputed. The evidence cited does not support the assertion. Even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis is unwarranted. Plaintiffs also object on relevance and materiality grounds, as the assertion is not limited to publicly traded corporations headquartered in California. Plaintiffs also object because the Konrad declaration and the study it cites were not before the Legislature when it considered SB 826 and therefore factual assertions based on the declaration and study are irrelevant and immaterial. Klick Decl., ¶¶ 10, 39, 42, 43, 109-110, 121, 130; Plfs' Objs To Def's Evid., Obj. No. 2, 3.
73.	The 2013 Senate Concurrent Resolution 62 encouraged every publicly traded company in California to have a minimum number of women on their boards by 2016. Sen. Conc. Res. No. 62, stat. 2013 (2013-2014 Reg. Sess.) res. ch. 127.	Disputed. The resolution urged publicly held corporations in California to have a minimum number of women on their board by December 2016, not "by 2016." Plfs' Evid ISO Plfs' MSJ, Ex. AA at 3.
74.	Beginning in 2013, the Secretary of State was required to begin maintaining a public list of qualified women candidates for corporate boards.	Disputed. No later than January 1, 1995, not "beginning in 2013," the Secretary of State was required to develop and maintain "a registry of distinguished women and minorities who are available to serve on corporate boards of directors." As the law strictly limits access to

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	Corp. Code, § 318.	information the registry contains, it is not a "public list." Corp. Code § 318(a), (m), (r).
75.	SB 826 only applies to publicly held corporations headquartered in California. Corp. Code, § 301.3, subd. (a)	Disputed. The assertion is an incomplete and potentially misleading summary of SB 826's applicability requirements. The law applies to all "publicly held domestic or foreign corporation[s] whose principal executive offices, according to the corporation's SEC 10-K form, are located in California." A "publicly held corporation" means "a corporation with outstanding shares listed on a major United States stock exchange." Corp. Code §§ 301.3(a), (f)(2).
76.	SB 826 does not require that a corporation's board have a set percentage of women. Corp. Code, § 301.3.	Disputed. The Defendant's other proposed statements of material fact state or imply that SB 826 requires a "critical mass" of female directors and define that term as "a sufficient number (usually 3) or proportion (usually 30%) of women on the board[.]" *Supra*, ¶¶ 66-72; *Infra* ¶ 77; Konrad Decl. ¶ 61.
77.	The Legislature found that many other countries addressed the lack of gender diversity on corporate boards by instituting quotas that require between 30 to 40 percent of seats to be held by woman directors. SB 826, § 1, subd. (d).	Disputed. The provision only identifies the following countries as having introduced gender-based quotas: Germany; Norway; France; Spain; Iceland; and the Netherlands. SB 826, 2018 Stats. ch 954, § 1(d).
78.	SB 826 provides, "A corporation may increase the number of directors on its board to comply" with its requirements. Corp. Code, § 301.3, subd. (a).	Disputed. The provision states, "A corporation may increase the number of directors on its board to comply with this section." Corp. Code, § 303.1(a)
79.	At a senate committee hearing on SB 826, Senator Jackson stated, "On the basis that these are discriminatory situations that exist, we are not trying to replace men on the board, and I think that's a critical aspect of the constitutional issue. We are just adding a position, that will be filled by a woman." (1:21.).	Disputed. Plaintiffs do not dispute that Sen. Jackson said, "We started with a registry just for availability. We then went to a resolution to urge corporate boards to do this. And the answer has been go pound sand. And so, on the basis that these are discriminatory situations that exist, we are not trying to replace men on a board. I think that's a critical component in the constitutional issue. We are simply adding a position that will be filled by a woman. So, even these boards, if we add a position, one-sixth is simply the majority." Plaintiffs dispute its admissibility and the inference drawn therefrom that remedying societal discrimination and inherent bias was the Legislature's purpose for the law. Plaintiffs also object

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		because Defendant denies the law discriminates against men on the basis of gender for every position added even in the face of the author's public statements to the contrary like this one. Plaintiffs further object because here the author of the bill refers to the impact of the bill on the majority of affected corporations as a percentage "one-sixth" (~ 17%). Plfs' Evid IOT Def's MSJ, Ex. AL at 53; Plfs Objs To Def's Evid., Obj. No. 5
80.	SB 826 requires that the Secretary of State publish an annual report tracking compliance with SB 826 and the number of corporations that have moved their headquarters in and out of the state or were previously publicly held and are now privately held. Corp. Code, § 301.3, subd. (d).	Disputed. The assertion is an incomplete and potentially misleading summary of the provision cited, calls for a legal conclusion not a statement of fact, and Plaintiffs respectfully refer the Court to the language of the statute. Corp. Code § 301.3(d).

PLAINTIFFS' ADDITIONAL MATERIAL FACTS

	PLAINTIFFS' ADDITIONAL UNDISPUTED MATERIAL FACTS AND SUPPORTING EVIDENCE	
81.	SB 826's author never added findings to the bill pointing to specific forms of past or present gender discrimination justifying its gender-based quota after the Senate Judiciary Committee analysis recommended that she do so. *Compare* Plfs'Evid ISO Plfs' MSJ, Ex. A *with id.*, Ex. L, pg. 12.	
82.	In an interrogatory served on April 8, 2021, Defendant asked Plaintiffs, "If it is YOUR contention that men are similarly situated to women for purposes of a claim under California's constitution, Article I, § 7, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5 & Ex. C, pg. 8 (Special Interrogatory No. 16).	
83.	In response to Interrogatory No. 16 served by Defendant on April 8, 2021, Plaintiffs answered, "Plaintiffs object that this question is impermissibly compound and unintelligible. Plaintiffs also object on the grounds that the question is overly broad as is does not reference or is not otherwise limited to SB 826 and therefore is not relevant to the subject matter involved in the pending action or reasonably calculated to lead to the discovery of admissible evidence. Without waiving these	

	PLAINTIFFS' ADDITIONAL UNDISPUTED MATERIAL FACTS AND SUPPORTING EVIDENCE	
	objections, Plaintiffs state that the question does not accurately describe their contentions." Haddad Decl., ¶ 5 & Ex. C, pg. 8 (Response to Special Interrogatory No. 16).	
84.	In an interrogatory served on April 8, 2021, Defendant asked Plaintiffs, "If it is YOUR contention that SB 826 discriminates against any individual, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5 & Ex. C, pg. 7 (Special Interrogatory No. 14).	
85.	In response to Interrogatory No. 14 served by Defendant on April 8, 2021, Plaintiffs answered, "Plaintiffs object that this question is impermissibly compound. Plaintiffs also object on the grounds that the question is ambiguous, unclear, and uncertain about whether it asks Plaintiffs about discrimination against particular, identifiable persons or only classes of persons. Without waiving these objections, Plaintiffs state that the question does not accurately describe their contentions." Haddad Decl., ¶ 5 & Ex. C, pgs. 7-8 (Response to Special Interrogatory No. 14).	
86.	In an interrogatory served on April 8, 2021, Defendant asked Plaintiffs, "If it is YOUR contention that SB 826 discriminates against any group, state all facts upon which YOU base this contention." Haddad Decl., ¶ 5 & Ex. C, pg. 8 (Special Interrogatory No. 15).	
87.	In response to Interrogatory No. 15 served by Defendant on April 8, 2021, Plaintiffs answered, "Plaintiffs object that this question is impermissibly compound. Without waiving this objection, Plaintiffs state that SB 826 discriminates against all persons who do not identify as 'female,' as that term is defined in SB 826, by imposing sex- and /or gender-based quotas for self-identified 'female' persons." Haddad Decl., ¶ 5 & Ex. C, pg. 8 (Response to Special Interrogatory No. 15).	
88.	Sen. Monning's comment at the August 24, 2018 Senate Judicial Committee hearing on SB 826 was the following: "[I] want to thank the author for bringing this forward and for her continued advocacy in terms of trying to bridge these gaps that are well-documented discrimination in our system." Haddad Decl., ¶ 4.	
89.	At least seven hearings were held on SB 826 by the Legislature.	

	PLAINTIFFS' ADDITIONAL UNDISPUTED MATERIAL FACTS AND SUPPORTING EVIDENCE	
	Plfs'Evid ISO Plfs' MSJ, Exs. C (Assembly Appropriations - August 8, 2018); D (Assembly Banking and Finance - June 25, 2018); F (Assembly Judiciary - June 26, 2018); G (Senate Appropriations - May 7, 2018); H (Senate Appropriations - May 25, 2018); and L (Senate Judiciary – April 24, 2018).	
90.	Only about five percent of CalPERS $392.5 billion under investment is invested in California "Public Equity," which includes "listed public equities corporate bonds." Plfs'Evid IOT Def's MSJ, Ex. AG, at 1-2.	
91.	August 6, 2021, the U.S. Securities and Exchange Commission issued an order in which it found that studies on the effect of board diversity on corporate performance were inconclusive. Plfs'Evid IOT Def's MSJ, Ex. AH, at 33-34 ("Taken together, studies on the effects of board diversity are generally inconclusive.").	
92.	Sen. Bill No. 1330 (2017-2018 Reg. Sess.) was approved by the Governor on September 30, 2018. Plfs'Evid IOT Def's MSJ, Ex. AI at 1.	
93.	The California Secretary of State's office is tasked to review and issue reports regarding the compliance of publicly traded corporations headquartered in California with SB 826. https://www.sos.ca.gov/business-programs/women-boards (accessed Sept. 7, 2021); SB 826, 2018 Stats. ch. 954.	
94.	Granite Construction (NYSE:GVA) appears on Defendant Secretary of State's July 2019 and March 2020 reports issued pursuant to SB 826. https://www.sos.ca.gov/business-programs/women-boards (accessed Sept. 7, 2021)	
95.	Granite Construction was awarded a $22 million contract by the California Department of Transportation in February 2019 according to the company's news release. https://www.graniteconstruction.com/newsroom/granite-awarded-22-million-highway-contract-california (accessed Sept. 7, 2021)	
96.	Granite Construction was involved in public contracting with the State of California after SB 826's enactment and is subject to the provisions of that law.	

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California.

Defendant.

Case No. 19STCV27561

PLAINTIFFS' OBJECTIONS TO EVIDENCE SUBMITTED BY DEFENDANT IN SUPPORT OF DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation No. 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

[1] Dr. Shirley N. Weber is the current Secretary of State.

I. Legal Conclusions Not Statements of Fact.

OBJECTION NO. 1

Objection To: Def's SMF,[2] ¶¶ 10, 43, 54, and 55.

Grounds: Motions for summary judgment must be decided upon admissible evidence in the form of affidavits, declarations, admissions, answers to interrogatories, depositions and matters of which judicial notice shall or may be taken. (Code Civ. Proc. § 437c(d).) The statement of facts "must cite evidentiary facts, not legal conclusions or 'ultimate' facts." (*Hayman v. Block* (1986) 176 Cal. App. 3d 629, 639.) "Matters which would be excluded under the rules of evidence if proffered by a witness in a trial as hearsay, conclusions or impermissible opinions, must be disregarded[.]" (*Ibid*.) These paragraphs contain legal conclusions, not statements of fact. In addition, the cases cited by Defendant in these paragraphs are not subject to judicial notice for purposes of establishing the proposed "facts." "A court may take judicial notice of a court's action, but may not use it to prove the truth of the facts found and recited." (*O'Neill v. Novartis Consumer Health, Inc.* (2007) 147 Cal. App. 4th 1388, 1405; *see also Oh v. Teachers Ins. & Annuity Ass'n of America* (2020) 53 Cal. App. 5th 71; Evid. Code § 452(d).)

Court's Ruling on Objection No. 1: Sustained: _____

Overruled: _____

II. Declarations Not Before The Legislature.

OBJECTION NO. 2

Objection To: Def's SMF, ¶¶ 11-26, 42, 45-53, 66-72

Grounds: The Grounds, Schipani, and Konrad declarations were not before the Legislature when it considered SB 826, and, therefore, factual assertions based on these declarations and studies therein are irrelevant and immaterial, and, consequently, inadmissible. (Evid. Code §§ 210, 350.) While a trial court may take judicial notice of the existence of these declarations in the court's file, the truth of matters asserted therein is not subject to judicial notice. (Evid. Code §§ 450, 452; *Oh v. Teachers Ins. & Annuity Ass'n of America* (2020) 53 Cal. App. 5th 71.) In addition, expert testimony is limited to opinions that are "[r]elated to a subject that is sufficiently beyond common experience that the opinion

[2] "Def's SMF" refers to Secretary of State's Separate Statement of Material Facts In Support of Motion for Summary Judgment.

of an expert would assist the trier of fact." (Evid. Code § 801(a).) As the proposed "facts" provided in these paragraphs are mostly irrelevant and immaterial (*see infra*, Objection No. 3) the opinion of an expert would not assist the trier of fact. Furthermore, insofar as these declarations rely on interviews conducted either by the declarants or other experts on whose studies the declarants rely, the data is being offered for the truth of the interviews and, therefore, the data is inadmissible hearsay. (Evid. Code §§ 801(b), 1200.)

Court's Ruling on Objection No. 2: Sustained: _____

Overruled: _____

III. "Facts" Neither Relevant Nor Material.

OBJECTION NO. 3

Objection To: Def's SMF, ¶¶ 14, 17-26, 42, 45-53, 63, 66-72

Grounds: For a variety of reasons stated in each of Plaintiffs' responses to these paragraphs, the Defendant's proposed facts are irrelevant and immaterial, and, consequently, inadmissible. (Evid. Code §§ 210, 350.)

Court's Ruling on Objection No. 3: Sustained: _____

Overruled: _____

IV. Assertions That Are Not Statements of Fact.

OBJECTION NO. 4

Objection To: Def's SMF, ¶¶ 17-19, 25-26, 42

Grounds: In each of these paragraphs, Plaintiffs object because the term "underrepresented" is a normative term, and, therefore, the assertion is not a statement of fact.

Court's Ruling on Objection No. 4: Sustained: _____

Overruled: _____

V. Statements of Individual Legislators.

OBJECTION NO. 5

Objection To: Def's SMF, ¶¶ 38-40, 79

Grounds: The statement of an individual legislator as to her intention, motive or opinion regarding a particular piece of legislation is inadmissible. (*In re Application of Lavine* (1935) 2 Cal. 2d 324, 327

("In construing a statute we are to be governed solely by the language employed, and are not bound by the opinions of individual members of the legislative body."); *accord Bragg v. Auburn* (1967) 253 Cal. App. 2d 50, 54.) The statements are also inadmissible hearsay. (Evid. Code § 1200.)

Court's Ruling on Objection No. 5: Sustained: _____

Overruled: _____

Dated: September 7, 2021

JUDICIAL WATCH, INC.

By: */s/ Robert Patrick Sticht.*
ROBERT PATRICK STICHT

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California

Defendant.

Case No. 19STCV27561

PLAINTIFFS' SUPPLEMENTAL REQUEST FOR JUDICIAL NOTICE IN IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation ID: 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

[1] Dr. Shirley N. Weber is the current Secretary of State.

Plaintiffs Robin Crest, Earl De Vries, and Judy De Vries, in opposition to Defendant's Motion for Summary Judgment, request that the Court take judicial notice of each of the following documents pursuant to sections 451, 452, and 453 of the Evidence Code:

1. Exhibit AG is a true and correct copy of a CalPERS report entitled "Investment & Pension Funding; Facts at a Glance for Fiscal Years 2019-20. This document also is available on CalPERS's website, https://www.calpers.ca.gov/docs/forms-publications/facts-investment-pension-funding.pdf., (visited Sept. 5, 2021).

2. Exhibit AH is a true and correct copy of an August 6, 2021 order issued by the U.S. Securities and Exchange Commission (Release No. 34-92590; File Nos. SR-NASDAQ-2020-081; SR-NASDAQ-2020-082) .

3. Exhibit AI is a true and correct copy of Senate Bill 1330, Chapter 955, Statutes of 2018 ("SB 1330"), as approved by the Governor and filed with the Secretary of State on September 30, 2018.

4. Exhibit AJ is a true and correct copy of Investopedia's definition of the Russell 3000 Index. This document also is available at Investopedia's website, https://www.investopedia.com/terms/r/russell_3000.asp (visited Sept. 6, 2021).

5. Exhibit AK is a true and correct copy of Women on Boards of Public Companies Headquartered in California, 2018 Report.

Exhibit AG is the proper subject of judicial notice under sections 452(c) and 453 as it is an official act of CalPERS, a California state agency. Judicial Notice of Exhibit AG also is proper under sections 451(f) and 452(g) and 452(h) of the Evidence Code.

Exhibits AH is the proper subject of judicial notice under sections 452(c) and 453 as it is an official act of the U.S. Securities and Exchange Commission, a federal agency. Judicial Notice of Exhibit AH is proper under sections 451(f) and 452(g) and 452(h) of the Evidence Code.

Exhibit AI is the proper subject of judicial notice under sections 451(a) and 453 of the Evidence Code because Exhibit AI is the statutory law of the State of California. Judicial notice of Exhibit AI also is proper under sections 451(f) and 452(a), 452(g), and 452(h) of the Evidence Code.

Exhibit AJ is the proper subject of judicial notice under sections 451(e) and (f), 452(g) and (h), and 453 of the Evidence Code because the Russell 3000 Index is an English word or phrase; it's

definition is a fact of generalized knowledge that is so universally known that it cannot reasonably be the subject of dispute; it's definition is a fact of such common knowledge within the territorial jurisdiction of the court that it cannot reasonably be the subject of dispute; and it's definition is a fact that is not reasonably subject to dispute and capable of immediate and accurate determination by resort to sources of reasonably indisputable accuracy.

Exhibit AK is the proper subject of judicial notice under sections 452(d) and 453 of the Evidence Code because it is a report cited in a declaration in the record of this action.

Dated: September 7, 2021

JUDICIAL WATCH, INC.

By: */s/ Robert Patrick Sticht.*
ROBERT PATRICK STICHT

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries and Judy De Vries

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

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COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California.

Defendants.

Case No. 19STCV27561

DECLARATION OF ROBERT PATRICK STICHT IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation No. 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

[1] Dr. Shirley N. Weber is the current Secretary of State.

DECLARATION OF ROBERT PATRICK STICHT

I, ROBERT PATRICK STICHT, declare:

1. I am an attorney of record for Plaintiffs Robin Crest, Earl De Vries, and Judy De Vries in the matter of *Robin Crest, et al. v. Alex Padilla*, Los Angeles Superior Court Case Number 19STCV27561. I am making this declaration in support of Plaintiffs' opposition to Defendant's motion for summary judgment. I have personal knowledge of the facts contained in this declaration and, if called as a witness, could, and would, competently testify to those facts.

2. Accompanying this declaration and filed concurrently herewith is "Plaintiffs' Evidence in Opposition to Defendant's Motion for Summary Judgment; Exhibits AG-AM."

3. Exhibits AG through AK are proper subjects of judicial notice as explained in "Plaintiffs' Supplemental Request for Judicial Notice in Opposition to Defendant's Motion for Summary Judgment" filed concurrently herewith.

4. Exhibit AL is a true and correct copy of a certified transcript of the California State Senate Judiciary Committee hearing on Gender Disparity in Corporate Board Rooms, SB 826, April 24, 2018, prepared by Chris Naaden of Planet Depos on July 16, 2021 at the request of Plaintiffs' counsel for use in this action.

5. Exhibit AM is a true and correct copy of Plaintiffs' Supplemental Responses to Defendant's Special Interrogatories Set One, dated August 19, 2021.

6. Exhibit AN is a true and correct copy of the Declaration of Jonathan Klick, Ph.D., J.D., dated September 7, 2021.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on September 7, 2021, at Los Angeles, California.

ROBERT PATRICK STICHT

ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street, S.W., Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

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ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA,[1] in his official capacity as Secretary of State of the State of California.

Defendant.

Case No. 19STCV27561

DECLARATION OF JONATHAN KLICK IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

Reservation No. 667418313333

Hearing:	September 21, 2021
Time:	9:30 a.m.
Place:	Dept. 38
Judge:	Hon. Maureen Duffy-Lewis
Action Filed:	August 6, 2019
FAC Filed:	September 20, 2019
Trial Date:	October 25, 2021

[1] Dr. Shirley N. Weber is the current Secretary of State.

DECLARATION OF JONATHAN KLICK, Ph.D., J.D.

I, JONATHAN KLICK, declare:

1. I am over the age of 18 years and a U.S. citizen. I know the following facts based on my own personal knowledge, and, if called as a witness, I could and would testify to these facts.

Background and Experience

2. I earned a Ph.D. in economics from George Mason University in 2002 and a J.D. from the George Mason University School of Law in 2003. I was hired as an assistant professor of law in 2004 and was named the Jeffrey A. Stoops Professor of Law and Economics in 2005. I was hired as a full professor of law at the University of Pennsylvania in 2008 and continue in that role to the present. I have also held the Erasmus Chair of Empirical Legal Studies at Erasmus University Rotterdam since 2009, where I teach courses in empirical research design and causal inference to masters and doctoral students in law and economics.

3. I was appointed the Maurice R. Greenberg Visiting Professor at the Yale Law School for the Fall 2013 semester, and I have held other visiting professor positions at the following law schools in the U.S.: Columbia University, Northwestern University, and the University of Southern California. I was appointed the inaugural Dean's Distinguished Fellow at the Villanova University Charles Widger School of Law in 2017.

4. I have been a visiting professor of economics at the University of Canterbury in Christchurch New Zealand, where I taught graduate-level econometrics. I have taught as a visiting professor in the economics departments or law schools at the following foreign universities: Waseda University (Tokyo, Japan), University of Ljubljana (Ljubljana, Slovenia), Bar-Ilan University (Ramat Gan, Israel), Goethe-Universität Frankfurt(Frankfurt, Germany), and the University of Hamburg (Hamburg, Germany). I have taught courses on empirical methods and causal inference at the Max Planck Institute (Hamburg and Jena, Germany) and at the Swiss National Bank's Study Center (Gerzensee, Switzerland).

5. In addition to classes on econometrics, statistics, and causal inference, of relevance to this declaration, I have taught corporate law at Florida State University, the University of Pennsylvania, and Waseda University. I have also taught expert and scientific evidence law at the University of

Pennsylvania, as well as to federal and state judges through workshops sponsored by centers at George Mason University.

6. I previously served as a senior economist for the Rand Corporation (Santa Monica, CA), and I have been the co-editor of the International Review of Law and Economics since 2012. I have taught empirical methods and causal inference to international, federal, and state judges, as well as federal and state regulators and law professors at least annually for the Law and Economics Center of George Mason University since 2009. I have also taught empirical methods and causal inference regularly to international regulators for the Global Antitrust Institute.

7. My research includes work in applied econometrics and focuses on using statistical tools to identify the causal effects of laws and regulations on individual behavior. My work has been published in numerous peer-reviewed journals in economics, law, psychology, and a host of other fields. I was chosen to write the chapter on empirical law and economics for the Oxford Handbook of Law and Economics (2017).[2] Also of relevance to this declaration, I have published methodological papers on using statistical methods to draw causal inferences in the event study framework used extensively in corporate finance. I have also published articles[3] on the reliability of work using the implicit association test (used to identify unconscious bias) in one of the American Psychological Association's journals.

8. Additional details about my background are provided in my CV which is attached as Exhibit 1.

Introduction

9. Declarations offered in support of Secretary Padilla's motion for summary judgment assert that women are underrepresented on the boards of directors of firms headquartered in California, and this underrepresentation is due to discrimination.[4] These declarations also claim that research

[2] "Empirical Law and Economics," (with Jonah Gelbach) Oxford Handbook of Law and Economics (Oxford University Press, 2017).

[3] Hart Blanton, James Jaccard, Jonathan Klick, Barbara Mellers, Gregory Mitchell, and Philip Tetlock (2009), "Strong Claims and Weak Evidence: Reassessing the Predictive Ability of the IAT," Journal of Applied Psychology, 94(3): 567-582. Hart Blanton, James Jaccard, Jonathan Klick, Barbara Mellers, Gregory Mitchell, and Philip Tetlock (2009), "Transparency Should Trump Trust," Journal of Applied Psychology, 94(3): 598-603.

[4] See, for example, DECLARATION OF ALISON KONRAD, PH.D., IN SUPPORT OF SECRETARY OF STATE'S MOTION FOR SUMMARY JUDGMENT, at paragraphs 10 and 11.

demonstrates that women have a positive effect on many different aspects of corporate performance.[5]

10. In my opinion, the evidence offered in these declarations supporting Secretary Padilla's motion for each of these points (underrepresentation of women on boards, discrimination as the cause of this underrepresentation, and that research shows a differential benefit of appointing women, as opposed to men, in terms of firm performance) is deficient and unreliable.

11. In the sections that follow, I analyze the arguments and the evidence provided in three of the declarations provided in support of Secretary Padilla's motion (Alison Konrad, Cindy Schipani, and Jessica Grounds) in detail. Before I separately address those declarations, I provide a general overview of my analysis of the underrepresentation claim, the discrimination claim, and the beneficial effects claim. I also provide a basic primer in statistics and causal inference to aid in understanding the evidence provided in the declarations. After analyzing the declarations, I then provide a general conclusion. After my report, I provide my CV and I include a review I wrote regarding a similar proposal by the Nasdaq stock exchange to require firms to increase the number of women on the boards of firms traded on the exchange.

The Claim that Women are Underrepresented on Boards

12. All three of the declarations, Konrad, Schipani, and Grounds, share the assertion that there are too few women on corporate boards. However, they never explicitly answer the question of how appropriate representation would be determined. Implicitly, it appears as though their shared assumption is 50-50 parity. This comes through most clearly in Schipani who uses Bureau of Labor Statistics data (from the Current Population Survey) to note that women make up more than 50 percent of management, professional, and related occupations and represent similar proportions of people entering law and medical schools and more than half of those receiving doctoral degrees and nearly half of all master's degrees in business. However, contrasted with this, she notes sources indicating that board seats are not distributed equally between men and women.

13. As I detail below in my section on Schipani's declaration, the 50 percent numbers she cites for the education metrics are very recent. For example, it is only this year that the University of

[5] See, for example, DECLARATION OF ALISON KONRAD, PH.D., IN SUPPORT OF SECRETARY OF STATE'S MOTION FOR SUMMARY JUDGMENT, at paragraph 12.

Pennsylvania's Wharton School became the first of the elite business schools to enroll an MBA cohort with more women than men. These elite business schools are the kind of places that train future board members. If they are only now achieving parity, it will be a number of years until the available pool of elite MBAs with the requisite job experience generally necessary to be considered for a board position will reach anything close to parity. The same is true for some of the other common educational pathways (lawyers and medical doctors) and is very far from parity even at the graduation stage for science and health PhD's, which is one of the other common routes to a corporate board.

14. Other than asserting that the male/female split should be closer to 50/50, the declarations in support of Secretary Padilla's motion do not provide a compelling determination of what appropriate representation would be. Instead, they merely assert that women are underrepresented.

Discrimination as Cause of "Underrepresentation" of Women on Corporate Boards

15. As mentioned earlier, one of the two key assertions made in the Konrad declaration is that the supposed underrepresentation of women on boards is due to discrimination. As noted earlier, whether the current number of women represents underrepresentation is far from given, but even if it is assumed, Konrad's evidence of discrimination is not compelling. First, most of the studies she cites regarding discrimination or bias toward women, even if they demonstrate exactly what she claims, have nothing to do with estimating discrimination or bias in the context of choosing corporate directors. The majority of the studies she cites examine bias in the general population or, at best, bias in the workplace by her own description. While I do not generally find these studies compelling for methodological reasons, they are not relevant to demonstrating discrimination in the choice of corporate directors. Konrad's discussion of these studies is irrelevant at best and possibly misleading.

16. Of the handful of studies that examine anything related to board members, Arjun Mitra, Corinne Post, Steve Sauerwald (2021) most directly examines potential bias in director appointments. The authors look at the fraction of voters who vote against or abstain from voting for board supported candidates. To identify causality, they implement an instrumental variables model. This method is described more in depth below, but essentially this method requires the researcher to find some variables that predict the variable of interest (in this paper: whether the candidate is a woman or not) but is otherwise unrelated to the outcome studied (votes against the candidate). This article uses for its

instruments the number of female directors serving on other corporate boards in the geographic area around a given firm's headquarters and the number of connections between male board members and females on other boards those men sit on. As discussed below, a number of papers use these instruments, and they are likely invalid instruments.[6]

17. However, even if one takes the paper's results as given, it appears that Konrad does not tell the whole story about whether this paper supports the notion that women face discrimination in board elections. Konrad focuses on the result that women in certain circumstances appear to be treated worse than men (e.g., when the director attends fewer board meetings). While it is true this interaction (female candidate interacted with attendance issues) generates more negative votes (no votes or abstentions), this paper also shows that being a woman board member actually leads to fewer negative votes in general. That is, the primary effect identified in this paper is that female directors actually are treated more positively than male directors, and the effect is statistically significant in every specification estimated (Table 3). This is not supportive of the idea that women face discrimination when board personnel decisions are made; it actually shows the opposite.

18. The interaction effect Konrad focuses on is problematic. Even if one accepts the authors' identification strategy, they only instrument for (that is, account for omitted variable bias) the female variable. They do not instrument for the variables that are interacted with the female variable. Even if one believes the primary effect of the female variable (i.e., treated more favorably) because the instrumental variables approach is accepted, there is no reason to believe that the interaction effects represent credible causal estimates.

19. The Benton (in press) article examines the number of boards female board members serve on, which could be a metric of discrimination, if access to additional boards is blocked due to the

[6] Briefly, both of these instruments likely affect firm performance directly and therefore are not valid instruments. If it is true that firms with female directors are better performing companies (as Konrad asserts), firms located in areas where most neighbor firms have many women directors would benefit from general agglomeration effects from being near well-performing firms. The other instrument can be problematic since multiple board seats held by men will often be in similar firms. If, as Konrad asserts, women on boards improve firm performance, this means that a firm's competitors will be better performing leading to fiercer competition in the industry which would affect firm behavior and performance.

board member's sex. While this paper's statistical approach is not credible,[7] even if the results are taken as given, the paper shows a number of results showing that women are treated more favorably in terms of board appointments. For example, of the four specifications shown in Table 3, two show that being a woman has a statistically significant positive effect on the number of boards the director sits on, and two show a statistically significant negative effect. In Table 4, one specification shows a statistically significant positive effect and two show a statistically significant negative effect, with the fourth estimate being positive but not statistically significant. Thus, this paper shows mixed results regarding the primary effect of being a woman on gaining additional board seats.

20. McDonald and Westphal (2013) is cited by Konrad for the proposition that women board members receive less mentoring which inhibits their ability to secure additional board seats. This paper does nothing to isolate causality and likely suffers from omitted variables bias, but even if its results are taken as given, the paper finds that being a woman has zero statistical effect on board appointments (Table 4). While the paper does attempt to estimate the joint effect of being a woman and not receiving mentoring, finding a jointly negative effect, at best, this paper provides mixed evidence on the claim that women are discriminated against in board appointment decisions.

21. Schipani likewise presents very little evidence of discrimination in the board appointment context, as opposed to assertions of general bias against women. The closest she comes to a directly relevant study is the Tinsley et al (2017) study discussed in more depth below, which purports to find that firms tend to replace departing male board members with males and departing female board members with females, which Schipani declares generates a bias against women.[8] However, as noted below, even if one takes the paper's results at face value, the estimates suggest that the tendency to match is stronger for a departing female candidate than it is for a departing male candidate, which leads to a net positive effect for women which will reduce the male-female differential over time.

22. In sum, the Konrad and Schipani declarations present very little evidence that is even relevant to the claim that women face discrimination in board appointments. Further, their presentation

[7] The models use random effects which only yield causal estimate if the effects of variables that are not accounted for in the model are unrelated to the variables that are included. This is a very strict and highly unlikely assumption. Further, the models include the lagged dependent variable as a control variable which is known to generate statistical bias.

[8] Schipani declaration at paragraph 37.

of the direct evidence on this issue is misleading since each of the papers they rely on has mixed evidence and some of the papers actually indicate that women are treated favorably in the board appointment context.

The Claim that Increased Female Board Participation Would Improve Firm Outcomes

23. I examine this claim extensively in Klick (2021),[9] finding that the empirical evidence is mixed at best, and a conservative evaluation would indicate that there are not statistically significant effects of female board participation on most firm outcomes. In my earlier analysis, I found that proponents of regulations requiring the appointment of more women tend to ignore papers finding no effects or even negative effects of female board members on firm outcomes. Further, I find that the proponents are willing to credit studies that are methodologically unreliable if they purport to find a positive effect of female board members on outcomes. Similar conclusions were reached by Harvard corporate law professor Jesse Fried.[10] These conclusions track with an earlier assessment by noted feminist scholar Deborah Rhode and Amanda K. Packel: "After exploring the strengths and limitations of various methodological approaches and survey findings, [we conclude] that the relationship between diversity and financial performance has not been convincingly established.[11]" More systematic meta-analyses of this literature likewise tend to find little evidence of a systematic effect of female board participation on corporate outcomes or behavior.[12]

24. The cherry-picking of studies by proponents of board diversity mandates and the declarations of Konrad and Schipani is exemplified by them ignoring the substantial literature examining the "natural experiment" provided by Norway's 2003 law which required boards to appoint women to 40 percent of their seats. A number of papers, using sophisticated methodologies find that

[9] Jonathan Klick (2021), Review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph (included as an appendix).

[10] Fried, Jesse M., Will Nasdaq's Diversity Rules Harm Investors? (March 31, 2021). European Corporate Governance Institute - Law Working Paper No. 579/2021, Available at SSRN: https://ssrn.com/abstract=3812642 or http://dx.doi.org/10.2139/ssrn.3812642, but see Painter, Richard W., Board Diversity: A Response to Professor Fried (April 11, 2021). Available at SSRN: https://ssrn.com/abstract=3824245 for a contrary take on Fried's evidence.

[11] Deborah L. Rhode and Amanda K. Packel, "Diversity on Corporate Boards: How Much Difference Does Difference Make?," Delaware Journal of Corporate Law 39, no. 2 (2014): 377–426.

[12] See Jonathan Klick (2021), Review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph, pp. 16-17.

appointing women led to a worsening of financial performance and value, and it led a number of firms to go private to avoid the law.[13] Even ignoring the selective citation practices, the papers cited by Konrad and Schipani fare poorly when subjected to methodological scrutiny. As detailed below, there is very little evidence offered to support the notion that female board participation improves firm performance. When the broader literature is examined, as suggested by the meta-studies or a more detailed paper-by-paper investigation, the correct evaluation of the literature is that appointing more women to corporate boards has no systematic effect on firm behavior, performance, or value, and the Norwegian experience suggests that bad outcomes are possible as well.

Empirical Primer

25. Before diving into the empirical studies cited by Konrad and Schipani, it is useful to provide a short guide to causal inference in policy and social science studies.[14] A similar treatment is available in the Klick (2021) monograph appended to this declaration.

26. Correlations measure the degree to which two random variables move together. Often measured as a correlation coefficient, a positive correlation indicates that the two variables tend to move in the same direction on average (if one goes up, the other tends to do so as well), while a negative correlation indicates that they tend to move in opposite directions on average (one goes up, the other tends to go down). A zero correlation indicates the two variables have no systematic relationship to each other. Correlations do not necessarily imply any causal relationship. Changes in A might cause the changes in B, while it might be the other way around, or both might be caused by other variables, or the observed tendency to move together might be mere coincidence.

27. The possibility of mere coincidence being the source of the correlation declines as more and more data are examined. All other things equal, the likelihood of a coincidental correlation declines as a sample size grows. However, the causality of the relationship cannot be deduced merely by looking at more data or by seeing the correlation arise many different times, since each time the correlation

[13] For details, see Jonathan Klick (2021), Review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph, pp. 14-15.

[14] For a textbook treatment, see Guido W. Imbens and Donald B. Rubin (2015), Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction. For a shorter treatment, see Jonah B. Gelbach and Jonathan Klick (2017) "Empirical Law and Economics," in Oxford Handbook of Law and Economics (Oxford University Press).

might actually be influenced by other variables that also happen to be present each of the times the correlation between A and B is observed.

28. To get closer to causation, it is important to account for the other influences on the correlation. Regression analysis is the common way to do this in non-experimental settings (i.e., setting where real world data are used, as opposed to researcher-generated laboratory data). Regression allows a researcher to adjust for the influence of the other variables to see what is left over in terms of the correlation between A and B. That is, regression adjustment allows the researcher to partial out the effects of other variables. In principle, if all of the variables that affected, say A, were included in the regression, whatever regression estimate of the correlation between A and B was left over (sometimes called the regression coefficient) would be the causal effect of B on A. That is, how much of a change in A is caused by a one-unit change in B.

29. Unfortunately, it is not generally possible to adjust for all of the variables that affect A since oftentimes those variables are not known or at least data on them are not available to the researcher. If the researcher omits some of these variables, the omitted variables are often referred to as unobservable or at least unmodeled.

30. If a regression is estimated with some relevant variables omitted, the estimated causal effect of B on A is likely to suffer from what is known as omitted variables bias (also referred to alternatively as endogeneity, simultaneity, selection effects, reverse causality, and a host of other names; for our purposes, we will treat them all as being equivalent). Formally, omitted variables bias occurs when a variable that influences A (or many such variables) is left out of the regression and that omitted variable (or variables) are correlated with B. Intuitively, in this situation, the estimated correlation between A and B will include some of the effects of the omitted variables. The effect of this bias could lead the estimate to be too big, too small, or correct by accident (e.g., the bias from leaving one variable out leads the estimate to be too big, while the bias from leaving another variable out leads the estimate to be too small, with the biases cancelling each other out).

31. Experimental studies (like a drug trial) sidestep this omitted variable bias problem by randomizing the variable of interest (say, giving a subject the drug to be studied vs giving them a placebo). When the outcome variable is examined via regression, while there are many omitted

variables, the variable of interest (getting the treatment) was assigned randomly so there can be no correlation between it and the omitted variables.

32. Experiments are not always feasible in social science or policy analysis because it is perhaps unethical to randomly assign people to various conditions or it is unconstitutional to randomly enforce a law against some people but not others. Even when they are feasible, while they would allow us to estimate an unbiased causal effect, the potentially artificial nature of the experimental setting may lead the experimental subjects to act differently than they would in a real-world setting. This is sometimes referred to as a problem of external validity (i.e., is it possible to extrapolate the findings of the experiment to the real-world setting).

33. Social scientists use a number of approaches to attempt to overcome the omitted variables bias problem when experiments are not possible. Perhaps the most credible are so-called quasi-experimental methods or "natural experiments." In these natural experiments, the researcher leverages some real world "shock" that changes a policy variable of interest for some people but not for others. In this setting, the researcher compares the behavior or outcomes for those affected by the shock before and after the shock takes place. This before/after differential is then compared to the contemporaneous before/after differential for a similar group that was not affected by the change. This comparison or control group provides the presumed counterfactual comparison (what would have happened if the shock had not occurred) against which the treatment group's changes can be compared. If the changes are similar between the two groups, the estimated causal effect of the shock is zero since the unaffected people acted similarly to the affected people. Any difference between the groups is presumptively attributed to the shock.

34. Such natural experiments are judged on two dimensions: 1) was the shock really as good as random or did it happen to the treated group for some reason that might be related to their attributes (even their unobservable attributes) and 2) were the treatment and control groups sufficiently similar (even in their unobservable attributes) such that the control group provides a good counterfactual for the treatment group. To the extent that the shock is potentially not really random or that the control group is not sufficiently similar, omitted variable bias potentially remains. While these questions are generally not formally testable (since doing so would require having access to data on unobservable attributes), the

assumptions are subjected to qualitative or intuitive scrutiny.

35. Since natural experiments are not always available, researchers have developed other approaches that attempt to approximate such a design. Especially in the literature relied on by Konrad, a common technique is the instrumental variables (IV) technique (sometimes called two stage least squares). In this approach, the researcher attempts to find an instrument that is like a shock to the variable of interest. That is, an instrument is something that shifts the variable of interest but is not otherwise related to the outcome being examined. If such an instrument can be found, the researcher examines only the variation in the endogenous variable of interest that is related to the shock caused by the movement of the instrument and sees how that part of the variation affects the outcome. If the instrument is a good one, it will not be related to the outcome except through its effect on the endogenous variable and, so, will not be affected by any correlations with the omitted variables. That is, the estimate from the instrumental variable approach will lead to a causal estimate as long as the instrument is valid. To be valid, the instrument must be correlated with the endogenous variable (otherwise the instrument won't generate any variation in the endogenous variable) and it must not be otherwise related to the outcome being studied. This latter so-called exclusion restriction is not generally formally testable[15] (since, again, doing so would require one to examine correlations between the instrument and all omitted variables), but it is subjected to intuitive scrutiny. If one can conceive of a plausible story about how the instrument can affect the outcome variable in some way other than through its effect on the endogenous variable, there is reason to be skeptical of causal interpretations of the resulting estimates.

36. One particular form of instrumental variables approach that is used in the literature cited by Konrad is a generalized method of moments estimator (GMM) which essentially uses lagged (i.e., past period) values of the endogenous variable or other control variables as instruments. The intuition is that since the variable value is from a past period it is hopefully unrelated to current omitted variables affecting the outcome. Unfortunately, this is often problematic if, for example, there are delayed effects or long-lasting effects of (for example) a firm's characteristics on future behavior, performance, or

[15] If one has multiple instruments for each endogenous variable, there is a diagnostic test called the test of overidentifying restrictions, but it is not a very powerful test and can easily lead one to think the exclusion restriction is satisfied when in fact it is not. This is discussed further down in this report.

value. In such a case, the exclusion restriction will not be satisfied. The GMM approach is sometimes used in studies examining stock price returns because, if one is willing to assume that asset returns are informationally efficient, past characteristics should be capitalized in past values and so should not show up in future returns. Even in this case though, the approach would be problematic if one does not assume that markets are efficient (e.g., if there are momentum effects in returns).

37. The last approach used in this literature that is worth explaining is the so-called fixed effects model. In this regression, if one has multiple observations for each entity (say, firm) over time, it is possible to pull out the effects of unobservable variables as long as those effects are constant over time without specifying all of the individual influences on these constant unobservable portions of the outcome variable. As long as the unobservable effects are indeed constant over time, the use of fixed effects models will adjust for these unobservable effects. However, if it is the case that these unobservable effects are changing over time, fixed effects models will still lead to estimates that suffer from omitted variables bias.

38. Before moving on to the studies themselves, it is worth defining the term statistical significance. Informally, if an estimate is referred to as statistically significant, it means that an estimate of the given size is unlikely to be observed by random chance alone (i.e., in reality even though the correlation between A and B is zero, random variation in the data makes it appear as though there is a correlation). A statement of statistical significance is often accompanied by a level, such as this result is statistically significant at the 5 percent level which means, if there really were no correlation between A and B, one would observe the estimated correlation (or larger in magnitude) in less than 5 percent of all random samples of the phenomenon. A conventional statistical significance level is 5 percent. Statistical significance does not mean causal, nor does it mean important. Instead, it merely gives a sense of how likely it is such a result arise by mere chance. A statistically insignificant estimate cannot be distinguished from mere random variation.

Konrad Declaration

39. In her declaration, Professor Alison Konrad argues that there is voluminous evidence that including women on corporate boards, especially a critical mass of women, improves firm performance in a host of ways. She often invokes the phrase "clear and convincing" when describing this evidence

and suggests that the studies she relies upon are methodologically rigorous. Additionally, she cites her own work and that of others that provide qualitative evidence (e.g., verbal responses in interviews) that women appear to value different things than men in terms of corporate goals and decision-making, and they perceive corporate leadership differently based on factors related to gender. Qualitative evidence such as that arising from interviews is of questionable reliability due to general problems having to do with the inability to control for correlated factors, sample compositions, and the like. For example, when Konrad suggests that her interview-based research found different perceived experiences of women board members when they were solo members vs, say, members of boards with three or more women, it is not possible to account for other differences across firms with different board compositions.

40. Additionally, Konrad invokes Harvard's Project Implicit as part of her argument that "there is clear and convincing evidence that SB 826 is needed in order to spur firms toward gender equity on their boards of directors," indicating that the research on implicit attitudes "has documented strong unconscious biases linking men to careers and women to families, and research shows consistent evidence of anti-female gender bias in the workplace." To the extent that research on implicit attitudes provides a more reliable basis given the ability of researchers to examine attitudes using randomized experiments, it might be the start of an evidentiary basis used to support real-world policy changes. Unfortunately, the implicit attitudes measure and body of research using it has not fared well when subjected to replication, methodological scrutiny, and extrapolation to real world settings.[16] Most of the critical literature, admittedly, focuses on race and the IAT and implicit bias reasoning, but that is because there are relatively few papers demonstrating the relationship between these implicit measures and sex bias.[17]

[16] For my own contribution to this literature, albeit on the use of the implicit association test in the context of race, see Hart Blanton, James Jaccard, Jonathan Klick, Barbara Mellers, Gregory Mitchell, and Philip E Tetlock (2009), "Strong claims and weak evidence: reassessing the predictive validity of the IAT," Journal of Applied Psychology, 94(3): 567-582, showing that a number of well-cited papers that assess the ability of the IAT to predict decisions are not robust to small modeling changes. For a meta-analysis of the IAT and race literature that shows the IAT literature reveals that "IATs were poor predictors of every criterion category other than brain activity" (categories examined: interpersonal behavior, person perception, policy preference, microbehavior, response time, and brain activity), see Frederick L Oswald, Gregory Mitchell, Hart Blanton, James Jaccard, Philip E. Tetlock (2013), "Predicting ethnic and racial discrimination: a meta-analysis of IAT criterion studies," Journal of Personality and Social Psychology, 105(2): 171-192.

[17] On this point, see Greg Mitchell and Philip E. Tetlock (2017), "Popularity as a poor proxy for

41. For these reasons, it is more useful to consider quantitative studies of actual firm experiences and how they differ across various degrees of board gender diversity. There do exist a number of quantitative studies using real-world data that attempt to isolate the causal effects of appointing more women to corporate boards on important business and social outcomes. The degree to which these studies are successful in isolating causality varies considerably. Proponents of laws and regulations that mandate increased sex diversity on corporate boards often choose selectively from the existing literature and overlook methodological flaws of the papers whose results support their favored outcomes.[18]

42. Konrad's analysis exhibits a similar tendency to pick and choose selectively based on supportive conclusions, while ignoring the methodological failures. Konrad's conclusion that "The evidence clearly shows that women directors, and particularly a critical mass of women benefits companies, communities and society by reducing unethical behavior by firms, such as environmental damage, the sale of dangerous products, and bank misconduct," is belied by the failure of these studies to use compelling and rigorous identification strategies, as well as other methodological flaws as documented extensively below. Konrad also ignores a number of studies, many of which are methodologically better, that point in other directions.[19]

43. I examine each of the studies cited in Konrad's exhibits B-H individually that she notes as having examined the critical mass hypothesis. As for the other cited studies in these exhibits, I specifically address a sampling of them below, but the main points apply virtually without exception to

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utility: The case of implicit prejudice," in S. O. Lilienfeld & I. D. Waldman, eds., Psychological science under scrutiny: Recent challenges and proposed solutions (pp. 164–195) at pp. 182-184.

[18] For an extensive documentation of this in one particular policy setting, see Jonathan Klick (2021), review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph.

[19] As just one example, Kenneth R. Ahern and Amy K. Dittmar (2012), "The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation," Quarterly Journal of Economics, 127: 137–97 shows that when firms were required to increase the gender diversity of their boards in Norway, there was a statistically significant reduction in firm value. This paper examines a natural experiment with sophisticated econometric tools, was published in one of the top five economics journals, has been cited more than 1,500 times, and was clearly available to Konrad. This cannot be explained by Konrad finding the Norwegian experience not to be relevant since she extensively cites studies of non-U.S. firms in her declaration. More examples of contrary studies can be found in Jonathan Klick (2021), review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph, none of which apparently merited attention from Konrad.

the papers that form Konrad's "clear and convincing" evidentiary base. Despite Konrad claiming that all of these studies "tested/adjusted for endogeneity," it is not even nominally true for many of the studies, and for virtually all of the rest, the attempt to account for omitted variable bias is not credible. In some instances, noted below, a paper's findings do not even match Konrad's description. In all, even ignoring the large number of papers Konrad ignores that undercut her conclusions, Konrad's reliance on this literature is unwarranted.

Konrad-cited studies

Exhibit B: Impact on Ethical Behavior

44. Professor Konrad states "I examined six panel studies examining the impact of women directors on firm ethical behavior, and they are described in Exhibit B. Several of these studies looked at corporations located both in the U.S. and in other countries. All six studies showed statistically significant beneficial effects . . .[20]". As detailed below, none of these studies is credible from a causal inference standpoint and most also had other technical problems yielding them to be unreliable. In the note to her exhibit B, she states "All listed studies analyzed panel data and tested/adjusted for endogeneity." While the note is nominally true, as detailed below, none of the studies correctly tested/adjusted for endogeneity (a synonym for the omitted variable bias problem described above). In all cases, the instrumental variable approaches used rely on invalid instruments that do not satisfy the necessary exclusion restriction (i.e., the instrument itself likely has effects on the outcomes studied through channels other than the endogenous variable to which the instrument is applied).

Studies

Arnaboldi, F., Casu, B., Gallo, A., Kalotychou, E., & Srkisyan, A. (in press). Gender diversity and bank misconduct. Journal of Corporate Finance.

45. This paper, which purports to show a negative relationship between WOCB, and fines levied by U.S. regulators against publicly listed banks in 28 EU countries, uses panel data methods to attempt to isolate a causal relationship between female board participation and fines. There are a number of problems with this paper methodologically. First, the regressions generally include lagged dependent variables in the empirical specification. It is well-known that the inclusion of lagged

[20] Konrad declaration, p. 19.

dependent variables in panel data models leads to statistical bias.[21] For this reason alone, the estimates in the paper are not reliable. The estimation approach has a host of other reliability problems. For example, the paper only includes country fixed effects, as opposed to bank fixed effects. The latter would be a more credible approach to address omitted variable bias problems. The authors' instrumental variables approach is not very credible either, as they use as an instrument the education levels of females (relative to males) in a bank's country as the predictor of female presence on the board. Because female education levels do not vary substantially year to year in a country, this instrument is essentially duplicative of the country fixed effects that are already in the model. Notably, the authors do not present any evidence that this instrument is strong conditional on all of the other controls in the model. Beyond this problem, if female education level is correlated with any other cultural or sociological variables absent from the model that might affect bank behavior, the instrument will not satisfy the exogeneity requirement for valid instruments. The authors' exogeneity test does not demonstrate that the exclusion restriction is satisfied.[22]

Capezio, A., & Mavisakalyan, A. (2016). Women in the boardroom and fraud: Evidence from Australia. Australian Journal of Management, 41(4), 719-734.

46. Despite recognizing the endogeneity problems involved in simply regressing an outcome variable (in this case a fraud metric from KPMG survey data) on a variable capturing female board presence,[23] the article uses a wholly unreliable instrumenting approach that relies on the assumption that firms with CEOs with more feminine names will tend to have more female board members. First, there is no evidence that this is true generally. Second, the paper provides no evidence that it was true in their sample (e.g., not even t statistics). Thirdly, there is evidence that men with more feminine names tend to

[21] See, for example, Paul D. Allison, Richard Williams, and Enrique Moral-Benito (2017), "Maximum Likelihood for Cross-lagged Panel Models with Fixed Effects," Socius, 3: 1-17 or any textbook treatment such as Manuel Arellano (2003), Panel Data Econometrics.

[22] See, for example, Jeffrey M. Wooldridge (2009), Introductory Econometrics: A Modern Approach, 4th ed., p. 529 ("In the context of the simple IV estimator, we noted that the exogeneity requirement cannot be tested.")

[23] The article notes that female presence may be incidentally correlated with other uncontrolled for firm governance characteristics, and it notes that firms may choose female directors to look good when they know fraud has occurred.

act more recklessly in school in U.S. data.[24] While this relationship might not extend to adulthood and might not exist in the Australian context studied in Capezio and Mavisakalyan, it should cast doubt on what was already a dubious identification strategy. Lastly, after the authors quickly skim over their unreliable estimation approach, they suggest that any bias would have to be quite large to overturn their results. This is total speculation. Specifically, they write (p. 729) "the correlations between %FEMALE and FRAUD with the unobserved confounding variables each need to exceed 0.5428 (in absolute terms) to turn the estimated effect of %FEMALE insignificant. This is rather large effect in the social sciences." By definition, unobserved confounding variables are not observed, which means it is not possible to reliably say anything about their correlation with anything else.

Liu, C. (2018). Are women greener? Corporate gender diversity and environmental violations. Journal of Corporate Finance, 52, 118-142.

47. While this paper purports to find that firms with a higher fraction of women on their boards face fewer environmental lawsuits, the claimed attempts to overcome endogeneity are unreliable. First, the author claims that using lagged values of the board composition effect overcomes endogeneity when this is obviously not true. The implicit claim is that past characteristics of the firm cannot be correlated with current unobservable characteristics. This is silly for at least two reasons. First, while the paper examines lawsuits faced in a given year, the conduct generating the litigation could easily have occurred during the past three years, in which case the board composition in the prior years would be contemporaneous with the actual actions of the firm. Second, lagging the composition metric does nothing to handle issues involving firms with certain characteristics that are also coincidentally related to firm behavior being more likely to choose female directors. The author's second attempt to handle endogeneity is to use propensity score matching. As is well known in social science and statistics, "propensity score matching does not solve the problem of omitted variable bias.[25]" Propensity score matching allows one to make comparisons among entities that are similar on observable characteristics (that are used to do the matching) but do nothing to ensure the comparisons are similar on other

[24] Figlio, David N. "Boys Named Sue: Disruptive Children and Their Peers." Education Finance and Policy 2, 4 (Fall 2007): 376-94.

[25] Ben Grunwald and John MacDonald (2014), "Propensity Score Matching," in Encyclopedia of Criminology and Criminal Justice, edited by Gerben Bruinsma and David Weisburd, p. 4060 available at https://doi.org/10.1007/978-1-4614-5690-2_46.

dimensions. This paper is not reliable.

Owen, A. L., & Temesvary, J. (2018). The performance effects of gender diversity on bank boards. Journal of Banking & Finance, 90, 50-63.

48. This paper uses lagged endogenous variables among its instruments, and the other instrument is the share of independent directors. There are at least two problems with these instruments. First, many commentators have argued that independent directors will affect firm behavior and performance.[26] Second, if the lagged variable is itself correlated with unobservable firm characteristics, it too is unsuitable as an instrument. Thus, neither of the authors' instruments are valid which, in turn, makes the authors' "Sargan Test" invalid as a test of the necessary exclusion restriction for the instrumental variables approach to address omitted variable bias concerns.[27] Beyond these fatal concerns, the paper also overstates the precision of its results since it uses only heteroskedasticity robust standard errors rather than the appropriate clustered standard errors. Therefore, any claims of statistical significance in this paper are questionable.[28]

[26] For a high-quality study that uses a credible natural experiment to identify the effect of independent directors on firm value, see Bang Dang Nguyen and Kasper Meisner Nielsen (2010), "The value of independent directors: Evidence from sudden deaths," Journal of Financial Economics, 98(3): 550-567 which finds that an unexpected death of an independent director leads to an 85 basis point decline in the firm's stock return on average (in a 1994-2007 sample of U.S. firms) and the degree of this effect is also a function of how independent the board is overall.

[27] The Sargan Test is a test of overidentifying restrictions which, essentially, tests whether the regression leads to statistically comparable results regardless of which subset of instruments is used in the IV procedure. The intuition is that if all of the instruments are valid (i.e., sufficiently predictive of the endogenous regressor and otherwise unrelated to the outcome variable), they should all generate the same regression coefficients, whereas if they are not valid, they likely will generate different coefficients. Of course, another possibility remains – the various instruments can be invalid in similar ways. So, for example, if independent directors are associated with more female directors and, independently, better firm performance and better performing firms are also more likely to have had more female directors in past years, it is very likely that the same omitted variable bias works through both channels. In such a case, the Sargan Test will be "passed" because all of the instruments suffer from similar biases. For a more formal treatment of this issue, see Jeffrey M. Wooldridge (2009), Introductory Econometrics: A Modern Approach, 4th ed., p. 529-531 "Therefore, the two IV estimates may be similar even though each is inconsistent. In effect, because the IVs in this example are chosen using similar reasoning, their separate use in IV procedures may very well lead to similar estimates that are nevertheless both inconsistent."

[28] There is a large literature on this. See, for example, A. Colin Cameron and Douglas L. Miller (2015), "A Practitioner's Guide to Cluster-Robust Inference," Journal of Human Resources, 50(2): 317-372. Intuitively, this issue arises from having repeat observations for the same entity (firm, in this case). While this aspect of the data is helpful to allow one to isolate causal effects (since one can see what happens to a given firm when a particular aspect changes, assuming that all other unmodeled characteristics remain fixed), it does mean that observations are not statistically independent from one another. That is, a firm in time t is not independent from the same firm in time t-1 which means it is

Kaitlin D. Wowak , George P. Ball , Corinne Post , David J. Ketchen Jr. (2021) The Influence of Female Directors on Product Recall Decisions. Manufacturing & Service Operations Management 23(4):895-913.

49. This paper has a faulty instrumental variables approach in that it instruments its female board metric using a measure of the fraction of male board members who sit on other firms' boards where there are female directors. The idea is that if male board members are exposed to other settings where females are on boards, they are more likely to invite or advocate for females on their other boards. The authors present evidence that the instrument is strong, but they admit that there is no way to test whether the exclusion restriction is satisfied (p. 903). They instead simply note that this approach has been used in other work and assert that this measure will not be related to firm performance except through the choice to appoint female board members. As noted in my previous work (Klick 2021), this approach is questionable by the very logic used by those advocating for greater female board participation. That is, it is claimed that women directors improve firm performance. Given that firms compete with each other for customers, capital, and labor, a better performing competitor can directly lead to worse performance for a firm. Thus, the instrument fails the exclusion restriction in that setting. As I noted previously, this concern might be dampened if the various firms are not related to each other (as competitors, in labor markets, etc.),[29] but the Wowak et al paper focuses exclusively on firms in the medical product space, which is a fairly narrow market and almost ensures that the firms with common directors compete.[30] Beyond this failure to reliably account for the omitted variable bias problem, this paper is not credible in many technical respects. For example, in their time to recall regressions, they use basic OLS regressions when duration/hazard models should have been used given the censoring problem in the dataset (i.e., some firms might eventually recall a product after the end of their sample period, but such recalls will not be observed by the researchers), and they use standard errors that do not

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inappropriate to treat these two observations as independent data points. Clustering represents the standard way to handle this issue and often (though not always) leads standard error estimates to increase in size which, in turn, affects statistical significance determinations.

[29] Jonathan Klick (2021), Review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph.

[30] For example, Ye Cai and Merih Sevilir (2012), "Board connections and M&A transactions," Journal of Financial Economics, 103: 327-349 notes that interlocking boards often lead to or result from M&A activity, and they find that healthcare-related industries are very active in M&A terms.

account for the clustering issue described above, or even other basic issues such as heteroskedasticity. This suggests that they likely overstate the precision of their estimates and therefore the effects they declare to be statistically significant are unlikely to survive when proper standard error estimates are used.

Christopher Godfrey, Andreas G. F. Hoepner, Ming-Tsung Lin, and Ser-Huang Poon (2020), "Women on boards and corporate social irresponsibility: evidence from a Granger style reverse causality minimisation procedure," The European Journal of Finance.

50. This paper uses "Granger causality" methods to purportedly identify the causal effect of female board representation on the number of negative news items about a firm related to corporate social responsibility (Corporate Social Irresponsibility, they call it) and subsequent stock market effects, claiming to find that firms with more women on their boards have fewer negative corporate social responsibility incidents. First, it should be noted that before they apply their Granger-based approach, they find that female representation adversely affects (i.e., reduces) annual stock returns of their firms to a statistically significant degree and appears to increase the negative stock market impact of corporate social irresponsibility (Table 4, models 2 and 3) and to increase return volatility (Table 4, models 5 and 6), albeit not in a statistically significant way. Thus, making any positive claim about female participation in their data hinges on the validity of their Granger-based approach. Unfortunately, it is well known that Granger type approaches do not actually isolate causality.[31] Essentially what Godfrey et al do is regress their endogenous variable on their controls and use the left-over variation in their female board metric to create what they claim to be an unconfounded version of the female board metric and use that as the explanatory variable in their regression. That is, they are basically using an instrumental variables approach with no instrument. Such an approach does nothing to solve the omitted variable bias problem (if it did, literally everyone would use this approach since it is obviously easier than using instrumental variables where one must identify a valid instrument), leaving all of the results in this paper unreliable and non-credible.

[31] See any textbook treatment (e.g., Jeffrey M. Wooldridge (2009), Introductory Econometrics: A Modern Approach, 4th ed., p. 650).

Exhibit C: Impact on Earnings Management

51. Konrad declares that the 23 studies she examined that looked at the relationship between female directors and earnings management provide "clear and convincing evidence that women directors benefit boards by reducing nefarious earnings management activities intended to mislead investors.[32]" Unfortunately, as was the case above, none of the studies she cites provide reliable evidence of a causal effect of female directors on earnings management indicators. While once again in the footnote to the exhibit she writes "All listed studies analyzed panel data and tested/adjusted for endogeneity," this time it is not even nominally true in that a number of the studies she invokes do not even pretend to address endogeneity, as detailed below.

Ahmed & Ali (2017) does not appear in Konrad's reference list, but it appears to be:

Ammad Ahmed and Searat Ali (2017), "Boardroom gender diversity and stock liquidity: Evidence from Australia," Journal of Contemporary Accounting and Economics, 13(2): 148-165.

52. This article proposes both an instrumental variables approach and a propensity score matching approach to overcome the omitted variables bias issue. Unfortunately, their instrument is not really an instrument. Namely, they use the passage of gender diversity laws that effect all of the firms in their sample since the reforms were nationwide and, therefore (as they note), they can no longer include their year fixed effects in the IV model. Because of this, there is no way to account for general background trends that affect all firms independent from any effect of increased board diversity. This is another IV paper that essentially has no instrument (since the IV model actually accounts for less than the original year fixed effects model accounts for) and, therefore, is unreliable. Also, as discussed above, propensity score matching does nothing to account for omitted variables since the matching only uses included variables (implicitly assuming that any effect of omitted variables is fully captured by the included variables).

Evgeniou & Vermaelen (2017) also does not appear in the reference list, but it appears to be:

Theodoros Evgeniou and Theo Vermaelen (2017), "Share buybacks and gender diversity," Journal of Corporate Finance, 45(C): 669-686.

[32] Konrad declaration, p. 20.

53. This paper uses the instrument of the fraction of male board members who are on other companies' boards with female representatives, as covered above in some of the other papers.[33] As discussed before, this approach requires that there is no competition between the interconnected firms; otherwise, there are other channels through which this instrument can affect firm performance which would render the instrument invalid. Beyond that, this paper does not actually use its instrument approach in examining the main outcome of the paper (i.e., the relationship between female representation and stock buybacks); instead, it only examines the instrumented effect of females on the ultimate stock market reaction to the buybacks. Given that, even if we ignore the concerns about the instrument used here, the authors provide no evidence that having more women affects buybacks in any way. We are only left with the results that in some time frames, having women on the board doesn't affect stock market reactions to buybacks in a statistically significant way over the 1- and 2-year time horizons, but it might over the 3- and 4-year time horizons.

Fan et al (2019) does not appear in the reference list, but it appears to be:

Yaoyao Fan, Yuxiang Jiang, Xuezhi Zhang, and Yue Zhou (2019), "Women on boards and bank earnings management: From zero to hero," Journal of Banking & Finance, 107(C): 105607.

54. Purporting to find a non-linear effect of female board membership on earnings manipulation (indicating, according to the authors, that once a critical mass of woman is present on a board, a bank is less likely to engage in manipulation), this paper, similar to many others already covered, uses the degree to which male board members are involved with boards in other companies populated by women as an instrument. This paper makes the point I have made above that if firms compete, this instrument is invalid, but they note that the bank setting may be helpful in this regard since banks are largely prohibited from having interlocking boards, so any experience male directors have on boards of other companies will be with firms outside of the banking industry. This does make this instrument more plausible than in the other papers that use it. However, the instrument is still not beyond criticism. If certain kinds of companies are more likely to appoint female directors (younger

[33] Note, the paper describes the approach as a Heckman selection model which is, in effect, an instrumental variables model.

firms, firms with better governance, firms from particular industries, etc.) which is well-recognized in the literature, the male board members of those firms may be better directors as well on a whole host of dimensions (e.g., better governed firms not only appoint more women, but the men they appoint are also better in various ways); those higher quality male directors may also affect the performance of the banks whose boards with which they are involved. Note that this concern applies to the other papers using this instrument too, but at least Fan et al are able to be confident that direct competitive effects will not invalidate their instrument.

55. While this paper is certainly one of the better papers methodologically speaking, there are some other concerns beyond the one raised above about the instrument. First, Fan et al's results are primarily about non-linear effects of female participation (i.e., sort of testing the critical mass idea) so the endogenous regressor is the female representation metric and its square. The Fan results suggest at low levels of female participation, the effect of adding women to the board is to actually increase earnings management but at higher levels this effect turns into one where additional women reduce earnings management (e.g., the Table 4 regression shows that when female representation is included linearly, increasing the percentage of women increases the earnings management metric [DLLP] by a statistically significant 0.0042, whereas when it is included as a quadratic, a U shape is estimated with additional women increasing earnings management at low levels and decreasing it after about 25 percent of the board is female). However, the authors appear to just use their instrument to correct for endogeneity in the linear metric of female representation and assume it is straightforward to square the corrected linear metric when estimating the quadratic relationship. This approach is humorously referred to as the **forbidden regression** in a standard graduate econometrics textbook, and it is noted that since both the endogenous variable and its square are both endogenous, one at least needs two separate instruments for any IV approach to be valid.[34] Thus, even if one puts aside the concerns raised above about the instrument, at best, only the specifications that include female board participation as a linear term are valid, and those specifications show that adding additional women to a board actually increases earnings management by banks.

[34] See Jeffrey M. Wooldridge (2001), Econometric Analysis of Cross Section and Panel Data, 1st ed., pp. 235-237.

Gul, Srinidhi, and Ng (2011) does not appear in the reference list, but it appears to be:

Ferdinand Gul, Bin Srinidhi, and and Anthony C. Ng (2011), "Does board gender diversity improve the informativeness of stock prices?" Journal of Accounting and Economics, 51(3): 314-338

56. This paper, after claiming that women on boards led to more informative stock prices, notes the common omitted variables bias problem that is ubiquitous (in this literature and all non-experimental literatures) and claims to solve it by 1) examining the natural experiment provided by Norway's requirement that firms achieve 40 percent female representation on their boards by the end of 2008; and 2) by collapsing the female board data into categories that represent increases or decreases in female representativeness on boards. As for the first approach, the authors do not show their work, instead merely asserting that when they examine the Norwegian experiment increasing female representation led to more informative stock prices. It suffices to say that the quick presentation elides numerous potential concerns with their approach.[35] Perhaps more important, they do not note that many papers examining the Norway example have shown that a large number of firms went private to avoid the regulation[36] (thus creating a sample selection problem) and for the firms that were induced to appoint more female directors, performance in general deteriorated.[37] The second approach, simply collapsing the female participation variable into those firms which added females versus those that did not, does nothing to address omitted variable bias (since the same potentially omitted factors that change the level of female participation also affect its change).

Kyaw, Olugbode, and Petracci (2015) does not appear in the references, but it appears to be:

Khine Kyaw, Mojisola Olugbode and Barbara Petracci (2015), "Does gender diverse board mean less earnings management?" Finance Research Letters, 14(C): 135-141.

57. This short paper does nothing to address endogeneity in its regressions relating gender

[35] For example, they do not discuss how they calculate standard errors, nor do they discuss what happens if firm fixed effects and other controls are included. They also do not present any attempt to make a comparison with firms outside of Norway that were unaffected by the law but doing so would be useful to account for general background trends in stock price informativeness.

[36] Øyvind Bøhren and Siv Staubo (2014), "Does Mandatory Gender Balance Work? Changing Organizational Form to Avoid Board Upheaval," Journal of Corporate Finance, 28: 152–68

[37] See, for example, David A. Matsa and Amalia R. Miller (2013), "A Female Style in Corporate Leadership? Evidence from Quotas," American Economic Journal: Applied Economics, 5(3): 136–69.

metrics and earnings management beyond including firm fixed effects. While such an approach will account for omitted variables that are constant over the sample period, it does not address time varying omitted variable effects. As most of the covered literature admits, firms might appoint women to boards in particular times as a kind of window dressing trying to deflect attention from other problems, leading to a time-varying omitted variable bias. This paper does not purport to address endogeneity, despite Konrad's exhibit C note that "All listed studies analyzed panel data and tested/adjusted for endogeneity."

Lakhal et al (2015) is not included in the reference list, but it appears to be:

Faten Lakhal, Aguir Amel, Nadia Lakhal, and Adnane Malek (2015), "Do Women On Boards And In Top Management Reduce Earnings Management? Evidence In France," Journal of Applied Business Research, 31(3): 1107-1118.

58. This paper does not purport to address endogeneity, despite Konrad's exhibit C note that "All listed studies analyzed panel data and tested/adjusted for endogeneity." It merely regresses measures of discretionary accruals on female board metrics. It does not even include firm fixed effects. This paper is totally unsophisticated and completely non-credible.

Radu and Smaili (in press) is not included in the reference list, but it appears to be:

Camélia Radu and Nadia Smaili (2021), "Board Gender Diversity and Corporate Response to Cyber Risk: Evidence from Cybersecurity Related Disclosure," Journal of Business Ethics.

59. This paper does not purport to address endogeneity, despite Konrad's exhibit C note that "All listed studies analyzed panel data and tested/adjusted for endogeneity." It merely regresses measures of discretionary accruals on female board metrics, although it does include firm fixed effects which, as above, will not account for time-varying omitted variable bias effects. Beyond the methodological unreliability of this study, it is interesting that the presence of a cybersecurity disclosure (or the number of words or paragraphs in the disclosures) is taken as a positive outcome, whereas it could also be interpreted that firms with more women on the board have more things to disclose. I have no evidence that this is the case, but neither do the authors that it is not the case. Also, this paper, as do many of the others cited by Konrad that attempt to isolate the critical mass effect includes variables for one woman, two women, and three or more women and finds (as do many of the papers) that the first

two variables generate a negative effect, while the third generates a positive effect, but none of the papers goes further and examines four women, five women, and so on. It is as if the authors find some evidence of what they were looking for and then stop examining the data. For all we know, just as the effect of one or two women differs from the effect of three women, there may be more non-linearities that go in all sorts of ways, casting doubt on whether there really is a generalized critical mass effect.

Seebeck and Vetter (in press) is not included in the reference list, but it appears to be:

Andreas Seebeck and Julia Vetter (2021), "Not Just a Gender Numbers Game: How Board Gender Diversity Affects Corporate Risk Disclosure," Journal of Business Ethics.

60. This paper purports to examine an exogenous shock, namely the UK's decision to leave the EU, to examine the effect of female board members on risk disclosure. The implicit idea is that since Brexit was a surprise, firms did not somehow change their boards or behavior in reaction to the shock, keeping unobservables fixed, mitigating omitted variables bias concerns. This is misleading, however, since the firms that have more women, as repeatedly noted in this literature, might be different in all sorts of unmodeled ways (better governance, different strategies, etc.) and the necessary "shock" in a natural experiment is to the policy variable of interest. In this case, the variable of interest is the presence/fraction of women on boards which is unaffected by the Brexit shock. The authors argue that Brexit created new risks, and so the choice to disclose them is unrelated to having more women because a firm knew it was risky. This argument only addresses the endogeneity concern that somehow women are appointed in firms that have underlying risks they are worried about (it does nothing with the endogeneity concern that better/different firms are more likely to appoint women) and only then if it is truly the case that Brexit was wholly unanticipated by firms. The authors do use an instrumental variables approach, but their instruments are totally non-credible. They use a firm's size and the presence of a mandatory retirement policy for a firm's board as their instruments. Firm size could be related to all kinds of unobservable characteristics of a firm and, therefore is an invalid instrument. Likewise, firm policies are likely correlated in many ways, so any relationship that exists between the firm's retirement policies and other unmodeled firm policies that are related to firm behavior will invalidate the retirement policy instrument.

Srinidhi, Gul, and Tsui (2011) is not in the reference list, but it appears to be:

Bin Srinidhi, Ferdinand A. Gul, and Judy Tsui (2011), "Female Directors and Earnings Quality," Contemporary Accounting Research, 28(5): 1610-1644.

61. This paper uses an instrumental variables approach (via a Heckman correction) to account for the potential endogeneity of the female board participation metrics, but the authors' instruments are not credible in the least. They use variables that measure sales, growth, stock volatility, and diversification, as well as a host of other firm characteristics. The closest they get to an exogenous instrument is the percentage of women employed in an industry, but this instrument clearly can have direct effects on firms if women affect firm performance both directly by influencing their own employer's performance and indirectly by affecting competition in the industry. This approach is not reliable.

Strydom, Yong, and Rankin (2017) is not in the reference list, but it appears to be:

Maria Strydom, Hue Hwa Au Yong, and Michaela Rankin (2017), "A few good (wo)men? Gender diversity on Australian boards," Australian Journal of Management, 42(3): 404-427.

62. This paper too uses a number of firm characteristics and the percentage of women employed in the industry. For the reasons given above, these are not valid instruments and so do not address the endogeneity concern the authors themselves note.

Wahid (2019) is not in the reference list, but it appears to be:

Aida Sijamic Wahid(2019), "The Effects and the Mechanisms of Board Gender Diversity: Evidence from Financial Manipulation," Journal of Business Ethics, 159:705–725.

63. This paper uses an instrumental variables approach with the population of women in the area around the firm's headquarters as an instrument and the longitude of a firm's headquarters as another instrument. Because these instruments do not change for a given firm (or do not change much for the population variable), Wahid must drop the firm fixed effects in the IV specification, leaving any constant unobservable effects unaccounted for. If firms' headquarters location decisions have any relationship with firm behavior (e.g., politically savvy firms locating near Washington, D.C., or forward-looking technology firms locating on the West Coast, etc.) these instruments will be invalid. It seems unlikely that such decisions are wholly random with respect to firm behavior and quality.

Ye et al (2019) is missing from the reference list, but appears to be:

Dezhu Ye, Jie Deng, Yi Liu, Samuel H. Szewczyk, and Xiao Chen (2019), "Does board gender diversity increase dividend payouts? Analysis of global evidence," Journal of Corporate Finance, 58: 1-26.

64. To examine the effect of female directors on dividend policy, Ye et al implement an IV analysis where their instrument for a given firm's number of female board members is the average number of female board members in the firm's industry in the same country. As discussed above, if female directors purportedly affect firm decisions and performance, then being in a market where a firm's competitors have more female board members exerts competitive effects on the firm itself, implying that this instrument does not satisfy the exclusion restriction and, therefore, is invalid.

65. While I will not go into detail regarding the papers Konrad lists as "Did not Test Critical Mass" in Exhibit C, the same problems follow through to these papers. For example, Abad et al (2017)[38] uses a GMM approach to identify causal effects which is comparable to an instrumental variables approach but uses lagged control variables (or first differenced control variables) as the instruments. As Wooldridge points out, this kind of estimator requires "all equations in the system must be properly specified, which means their instruments must be exogenous.[39]" This means that if there are any lagged effects of the control variables (e.g., if institutional investors have long term effects on firm behavior, or the effect of outside directors is long-lived, or even if there is temporal dependence such as autoregressive components to firm outcomes, etc.) on the outcome variable, the GMM approach will not generate unbiased estimates. In cases where the outcome is a firm's return, this assumption might make sense if one were willing to assume that markets were informationally efficient. However, this article examines informational asymmetries, so the authors clearly do not believe informational efficiency holds. Again, these papers do not use reliable methods to estimate causal effects.

Exhibit D

66. Konrad suggests that the studies she reviewed provide support for the idea that having

[38] David Abad, María Encarnación Lucas-Pérez, Antonio Minguez-Vera, José Yagüe (2017), "Does Gender Diversity on Corporate Boards Reduce Information Asymmetry in Equity Markets?," BRQ Business Research Quarterly, 20(3): 192–205.

[39] See Jeffrey M. Wooldridge (2001), Econometric Analysis of Cross Section and Panel Data, 1st ed., p. 199.

more female board members constrains CEO pay or rebalances CEO pay in favor of more incentive compensation. Many of the studies she cites favorably are decidedly mixed in their actual conclusions, and none of the papers does a credible job of identifying causal relationships.

Owen & Temesvary (2019) is not included in the reference list, but it appears to be:

Ann Owen and Judit Temesvary (2019), "CEO compensation, pay inequality, and the gender diversity of bank board of directors," Finance Research Letters, 30(C): 276-279.

67. This paper uses only firm fixed effects to make any progress on the omitted variable bias issue. As noted before, this approach only works if one assumes that all effects arising from omitted variables bias are constant. Moreover, even if one were willing to make this assumption, four of the seven specifications indicate that firms with more females on their boards unambiguously pay CEOs more. Of the other three specifications, while there is one (the only one that allows for it) that nominally shows the critical mass effect espoused by Konrad, the quadratic component of the diversity metric (that shows the reduction in compensation at higher levels of female representation) is only statistically significant at the $p < 0.10$ level, while the other component (that shows that increasing female representation increases CEO compensation) is statistically significant at the $p < 0.01$ level. Further, because the authors do not account for the clustered standard errors issue raised above, their standard errors are likely understated, which means even the 10 percent statistical significance claim is likely overly optimistic. This paper does nothing more to account for endogeneity, so it would not be credible to infer from this paper that firms with greater female board representation pay CEOs more (even though that is what a majority of the specifications indicate), but neither does it provide reliable evidence that female board members somehow constrain CEO pay.

Usman et al (2019) is not included in the reference list, but it appears to be:

Muhammad Usman, Muhammad Umar Farooq, Junrui Zhang, Nanyan Dong, and Muhammad Abdul Majid Makki (2019), "Women on boards and CEO pay-performance link," International Journal of Manpower, 40(7): 1171-1200.

68. This paper uses two instrumental variables approaches (a Heckman approach and their 2SLS approach) but neither uses plausible instruments. In their Heckman selection model, they use a number of firm characteristics (firm size, board size, etc.) that surely affect CEO compensation

directly.[40] Given this, the instruments are not valid. In their 2SLS approach uses the number of female directors in a firm's industry. As I have repeated many times in this declaration, this only works as an instrument if it is the case that female directors have no effect on the performance of a firm's competitors, which presumably undercuts the entire claim made by the paper. They also provide a propensity score matching approach which does not account for omitted variable bias (since matching is done on the basis of observed/included variables).

69. Once again, I will not go into detail for the papers listed as "Did Not Test Critical Mass," but the papers in this grouping are no more reliable. The Adams and Ferreira paper noted by Konrad to have been highly cited merely relies on firm fixed effects in terms of attempting to isolate causality. As discussed, many times earlier, this only works if the effects of omitted variables are constant. Furthermore, Adams and Ferreira make the odd decision to not cluster their standard errors in their models that include firm fixed effects, making their determinations of statistical significance unreliable. In any event, at best, this paper provides very mixed evidence regarding the effect of women on boards on CEO compensation, sometimes finding that more women lead to more incentive pay and sometimes less. There is a similar lack of robustness with respect to overall compensation. To suggest that this paper shows that women on boards lead to beneficial effects on CEOs (as Konrad does in her exhibit D) is misleading at best.

Exhibit E

70. Konrad declares, on the basis of the articles detailed in exhibit E, "The findings from this set of studies indicate a clear and convincing picture of the beneficial effects of women directors on a corporation's social responsibility." However, as detailed below, virtually none of the studies she reviewed does a plausible job accounting for omitted variable bias, and many do not even attempt to account for this bias despite Konrad characterizing the studies as all testing/adjusting for endogeneity in the note to exhibit E. This failure to adequately address this bias leaves the literature far from being

[40] For a famous presentation of this with respect to firm size, see Xavier Gabaix and Augustin Landier (2018), "Why Has CEO Pay Increased So Much," Quarterly Journal of Economics, 123(1): 49–100 which concludes "the sixfold increase of U.S. CEO pay between 1980 and 2003 can be fully attributed to the sixfold increase in market capitalization of large companies during that period." They find similar results looking at a more recent period in Xavier Gabaix, Augustin Landier, and Julien Sauvagnat (2014), "CEO Pay and Firm Size: An Update After the Crisis," Economic Journal, 124(574): F40–F59.

clear and convincing about anything regarding the effect of female board participation and corporate social responsibility (CSR) metrics. I detail the problems with these papers below.

Muhammad Atif, Mohammed Hossain, Md Samsul Alam, and Marc Goergen (2021), "Does board gender diversity affect renewable energy consumption?" Journal of Corporate Finance, 66: 101665.

71. This paper's identification strategy involves using the ratio of females to males in the workforce of a firm's state as an instrument for female board members. This analysis does not use firm fixed effects when modeling the firm's use of renewable energy. As mentioned before, such an approach requires that nothing about a firm's location affects its performance, otherwise the instrument will have direct effects on firm behavior, leaving the instrument invalid. The paper also uses propensity score matching, which likewise only yields credible causal estimates under very strong assumptions (i.e., that all omitted variables are completely accounted for by the included variables). This paper does, however, offer a third approach that is potentially more plausible by focusing on the replacement of a male director with a female director, compared to matched firms that replace a departing male director with another male director around the same time. In a difference-in-difference framework, if the replacement decision is taken to be a shock (i.e., random with respect to unmodeled firm characteristics), such an approach would yield causal estimates. While this is admittedly a questionable assumption, it at least represents a somewhat novel approach in this literature and provides a more well-defined identification assumption. Unfortunately, the authors do not implement the difference-in-difference test appropriately since they do not include firm fixed effects (instead relying on industry fixed effects). The paper does not reveal what would occur if the correct, more rigorous approach were used, leaving no clue to what a sensible causal estimate would be.

Walid Ben-Amar, Millicent Chang, and Philip McIlkenny (2017), "Board Gender Diversity and Corporate Response to Sustainability Initiatives: Evidence from the Carbon Disclosure Project," Journal of Business Ethics, 142: 369-383.

72. This paper uses a firm's board size and whether it has a mandatory retirement policy for directors to instrument for female board participation. As noted with respect to other papers, if these firm policy decisions have any other effects on firm behavior or performance, these instruments will not

be valid. This concern is heightened in this case since the regressions do not include firm fixed effects (which would otherwise at least adjust for any constant effects arising from omitted variables). It is also interesting that these instruments are not actually statistically significant predictors of the authors' chosen female board metric, casting doubt on whether their instrumenting approach is valid even if exogeneity of the instruments is assumed. Another interesting aspect of this paper is that its evidence for the critical mass effect is weak at best since the paper estimates fairly constant effects of female board participation on carbon disclosure likelihood regardless of whether a firm has one, two, or three women board members, whereas the critical mass effect would require that the estimated effect grows in size as more women are appointed to boards. Despite this, Konrad declares that this paper supports the critical mass hypothesis (see "Critical Mass" column in Exhibit E). To be fair, however, these results are unreliable since they do not account for endogeneity through instruments or even through firm fixed effects, so we are actually left with no credible estimate of the critical mass effect one way or the other.

Boulouta (2013) is not included in the reference list, but it appears to be:

Ioanna Boulouta (2013), "Hidden Connections: The Link Between Board Gender Diversity and Corporate Social Performance," Journal of Business Ethics, 113(2): 185-197.

73. This paper uses a GMM approach to instrument its female board metric, which relies on using the lags of the predictor variables as instruments. As discussed before, this approach only works if one believes there are no lagged effects of firm characteristics on firm behavior. This paper also fails to account for firm fixed effects. Bizarrely, the author claims that fixed effects are not appropriate because simultaneity/reverse causality issues might be present (p. 191) and so she uses the instrumental variables approach. As indicated before, rigorous modeling would involve using both fixed effects and instrumental variables so as to better account for omitted variable bias (of which endogeneity, simultaneity, and reverse causality are all examples). In any event, even if all of these concerns are ignored, the effect of the author's female board metric on the various corporate social performance metrics is not generally statistically significant.

Charumathi and Rahman (2019) is not included in the reference list, but it appears to be:

B. Charumathi and Habeebu Rahman (2019), "Do Women on Boards Influence Climate Change Disclosures to CDP? – Evidence from Large Indian Companies," Australasian

Accounting, Business, and Finance Journal, 13(2)

74. This paper is not credible at all. Not only does it not account for omitted variable bias in any way, it does not event adjust for basic covariates, instead relying on comparisons of means. It is highly questionable as to why Konrad included this paper given that she asserts that all listed studies "tested/adjusted for endogeneity."

Cook and Glass (2018) is not listed in the references, but it appears to be:

Alison Cook and Christy Glass (2018), "Women on corporate boards: Do they advance corporate social responsibility?"

75. In addition to firm fixed effects, this paper attempts to use lagged variables, including its female board metrics, to address endogeneity. Unfortunately, this approach does nothing to address the problem since just as omitted variables can confound current relationships, they also can confound lagged relationships, especially if there is persistence in any of the effects. This paper also does nothing to adjust for dependence in its standard errors, which potentially significantly overstates the estimates' precision which is particularly worrisome here since so many of the estimated effects are only borderline statistically significant.

Claude Francoeur, Réal Labelle, Souha Balti, and Saloua EL Bouzaidi (2019), "To what extent do gender diverse boards enhance corporate social performance?" Journal of Business Ethics, 155(2): 343-357.

76. This article uses a GMM approach that uses lagged variables as the instruments for the female board metric in regressions explaining a firm's corporate social responsibility characteristics. As noted above, this approach only works if lagged effects of firm characteristics on firm behavior are ruled out. Especially given the paper's failure to even account for firm fixed effects, this assumption seems dubious.

Hussain, Rigoni, and Orij (2018) is not included in the reference list, but it appears to be:

Nazim Hussain & Ugo Rigoni, and René P. Orij (2018), "Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance," Journal of Business Ethics, 149(2): 411-432.

77. This paper moves back and forth between fixed and random effects models, only finding

any support for a positive relationship between women on a firm's board and its various corporate social responsibility metrics for one set of metrics (social sustainability) and only then when random effects models are used. Unfortunately, it is well known that random effects models generate biased estimates if there are omitted variables.[41]

Eunjung Hyun, Daegyu Yang, Hojin Jung, and Kihoon Hong (2016), "Women on boards and corporate social responsibility," Sustainability, 8(4): 300.

78. This paper uses fixed effects models. If omitted variable effects are constant, this approach will yield credible causal estimates. Unfortunately, this is a very strong and likely unwarranted assumption. This paper also included its lagged dependent variable as a predictor which generates bias problems as discussed above. Finally, the authors do nothing to account for dependence in their data, implying that their standard errors are incorrectly calculated.

Nooraisah Katmon, Zam Zuriyati Mohamad, Norlia Mat Norwani, and Omar Al Farooque (2019), "Comprehensive board diversity and quality of corporate social responsibility disclosure: Evidence from an emerging market," Journal of Business Ethics, 157: 447-481.

79. This paper uses lagged predictors as instruments for some of its control variables, which is inappropriate, but more important, it does not actually instrument for its board gender variable and therefore does not even attempt to account for endogeneity of the effect for which Konrad relies on the paper. Further, in the model where IV is used (inappropriately), the gender effect is not statistically significant. That Konrad includes this paper as having been one that tested/adjusted for endogeneity is misleading at best.

McGuinness, Vieito, and Wang (2017) is not included in the reference list, but appears to be:

Paul B. McGuinness, João Paulo Vieito and Mingzhu Wang(2017), "The role of board gender and foreign ownership in the CSR performance of Chinese listed firms," Journal of Corporate Finance, 42(C): 75-99.

80. This paper's attempt to account for omitted variable bias is quite odd. The paper uses a Heckman selection model (a variety of an instrumental variables analysis as described above), but it

[41] See Jeffrey M. Wooldridge (2001), Econometric Analysis of Cross Section and Panel Data, 1st ed., section 10.2.

does so without any instrument. That is, the paper merely models whether a firm has, for example, female directors as a function of the other control variables in the regression. This does nothing to account for omitted variables.[42] This paper's attempt to adjust for endogeneity is unreliable.

Elmagrhi, M. H., Ntim, C. G., Elamer, A. A., & Zhang, Q. (2019). A study of environmental policies and regulations, governance structures, and environmental performance: The role of female directors. Business Strategy & the Environment, 28(1), 206-220.

81. This paper uses GMM methods (effectively using lagged control variables as instruments) which is only appropriate if one assumes there are no delayed effects of firm characteristics on firm behavior. This approach is unreliable.

Hollindale et al (2019) is not included in the reference list, but it appears to be:

Janice Hollindale, Pamela Kent, James Routledge, and Larelle Chapple (2019), "Women on boards and greenhouse gas emission disclosures," Accounting and Finance, 59: 277-308.

82. This paper does not even claim to address endogeneity, despite Konrad's indication that it does.

Isidro and Sobral (2015) is not included in the reference list, but it appears to be:

Helena Oliveira Isidro and Márcia Sobral (2015), "The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance," Journal of Business Ethics, 132(1): 1-19.

83. This paper uses a simultaneous equations model. In principle, such a model works similarly to an instrumental variables model, but the authors do not use any instruments in their estimation. The results of such a modeling approach are not reliable.

Riadh Manita, Maria Giuseppina Bruna, Rey Dang, L'Hocine Houanti (2018), "Board gender diversity and ESG disclosure: Evidence from the USA," Journal of Applied Accounting Research, 19(2): 206-224.

84. This paper, which Konrad notes does not find evidence of a positive effect of female board participation on firm disclosure scores, uses only lagged control variables and firm fixed effects to

[42] For a technical discussion of how a Heckman type model works using only the inverse Mills ratio for identification, see Jeffrey M. Wooldridge (2001), Econometric Analysis of Cross Section and Panel Data, 1st ed., 564.

account for endogeneity. As discussed before, the use of firm fixed effects only accounts for omitted variables whose effects are constant throughout the sample period, and lagged variables do not account for omitted variable bias at all. This approach is not generally reliable.

María Consuelo Pucheta-Martínez, Inmaculada Bel-Oms, and Gustau Olcina-Sempere (2019), "Commitment of independent and institutional women directors to corporate social responsibility reporting," Business Ethics: A European Review, 28: 290-304.

85. This paper does nothing to account for endogeneity, despite Konrad's statement that all of the papers in her Exhibit E "tested/adjusted for endogeneity." Although this makes the paper unreliable, it is interesting that while Konrad includes it as supporting the critical mass idea because the paper estimates a non-linear effect of women board members on corporate social responsibility reporting, the nonlinear effect is actually the opposite of what the critical mass idea predicts. That is, in this paper, at low levels, additional women on the board improve reporting but after a point, additional women reduce reporting. Again, the paper is unreliable, so there is no reason that this paper should influence anyone's views on whether there is a critical mass effect or not, but, arguably, Konrad's use of this paper is misleading.

María del Carmen Valls Martínez, Pedro Antonio Martín Cervantes, and Salvador Cruz Rambaud (2020), "Women on corporate boards and sustainable development in the American and European markets: Is there a limit to gender policies?" Corporate Social Responsibility & Environmental Management, 27: 2642-2656.

86. This paper uses a fixed effects model, which accounts for constant effects of omitted variables at the firm level. Unfortunately, this paper includes the lagged dependent variable as an explanatory variable which, as discussed above, generates bias in the estimates. The paper does not provide the fixed effects estimates without including the lagged outcome variable as a control, leaving the reader unable to assess the reliability of the paper's estimates, even if one is willing to assume that any omitted variable effects are constant.

87. I omit discussion of the papers Konrad includes as not testing the critical mass idea, but they too universally share the identification problems discussed above. For example, Beji et al (2021)[43]

[43] Rania Beji, Ouidad Yousfi, Nadia Loukil, and Abdelwahed Omri (2021), "Board Diversity and

uses a GMM approach which, as discussed above, essentially requires that there be no lagged effects of firm characteristics on the firm's behavior since lagged control variables serve as the instruments in GMM. Likewise, Dang et al (2021)[44] use a "control function approach" which also requires an exogenous instrument. Their instrument is whether the firm is included in the S&P 100 index. If this instrument does indeed meet the exclusion restriction, their estimate of the effect of women on a firm's board on the firm's ESG disclosures is positive but only marginally statistically significant (i.e., significant at the 10 percent level but not the 5 percent level). While this paper provides slightly more technical justification for its approach than most papers in this literature, reliability boils down to whether one believes that inclusion in the S&P 100 is unrelated to a firm's behavior other than through its appointment of women to its corporate board. It has long been known that inclusion in the S&P 500 affects firms in various ways, including providing capital inflows and increased investor scrutiny.[45] I am unaware of any similar research on effects of inclusion in the S&P 100. Intuitively, one might assume that the S&P 500 inclusion is substantively different given the prominence of that marker in the public's perception, in which case maybe the instrument is legitimate. On the other hand, perhaps being included in the more elite group carries proportionately more attention. Further, S&P's choices themselves presumably involve a host of firm characteristics which may be directly related to firm behavior. While this uncertainty about the instrument's validity and the borderline statistical significance could reasonably lead one to be skeptical of the paper's results, this paper at least attempts to address the omitted variable bias problem more rigorously than does most of this literature.

Exhibit F

88. Konrad analyzes a set of studies that get to the heart of the notion that corporate sex diversity mandates will lead to more gender equity in Exhibit F. On the basis of what she describes as "9 rigorous panel studies that examined the impact of women directors on gender equity in firms," she

Corporate Social Responsibility: Empirical Evidence from France," Journal of Business Ethics, 173, pages133–155.

[44] Rey Dang, L'Hocine Houanti, Jean-Michel Sahut, and Michel Simioni (2021), "Do women on corporate boards influence corporate social performance? A control function approach," Finance Research Letters, 39: 101645.

[45] See, for example, William B. Elliott, Bonnie F. Van Ness, Mark D. Walker, and Richard S. Warr (2008), "What Drives the S&P 500 Inclusion Effect? An Analytical Survey," Financial Management, 35(4): 31-48.

concludes, "Overall, the set of results shown in Exhibit F provide clear and convincing evidence that WOCB enhance gender equity in firms." Unfortunately, as describes below in detail, none of these studies is actually rigorous, and despite Konrad again asserting that all of the exhibit studies "tested/adjusted for endogeneity," none does so adequately and a number of them do not even claim to do so. Because this literature sits so firmly in the core of what gender diversity mandates are meant to do, I examine all of the studies (not just those that examine the critical mass hypothesis, as I do in the rest of this report). This set of studies does not provide reliable evidence regarding the effect of female board participation on gender equity.

Philipp Geiler and Luc Renneboog (2015), "Are female top managers really paid less?" Journal of Corporate Finance, 35: 345-369.

89. This paper uses matching methods in its investigation of female pay disparities for executives and CEOs but uses Tobit regression (without any matching) to examine pay differentials between male and female executives and how they are affected by female board members. There is no attempt to control for endogeneity in any of these regressions beyond simply adding control variables. Despite Konrad indicating all of the papers listed in Appendix F have tested/adjusted for endogeneity, this is not the case, and these estimates are not reliable.

Christina Quintana-García and Marta Elvira (2017), "The effect of the external labor market on the gender pay gap among executives," Industrial & Labor Relations Review, 70(1): 132-159.

90. This paper does not even claim to account for endogeneity in any way, as it merely uses control variables in its wage regressions. Beyond this approach being entirely unreliable due to the standard issue of omitted variables bias, the results in the paper do not actually even nominally indicate that "% [women on corporate board] reduce the executive gender pay gap" as claimed in Konrad's Exhibit F entry for this paper (pointing to Tables 5 and 6). Table 6 does not include male pay at all in its analysis making it impossible to say anything about gender gaps. Table 5 does indicate that women executives earn less, though the effect is not statistically significant, and that firms with greater female representation on their boards pay executives more regardless of their sex. The Table 5 specifications do not involve the interaction between the female board metric and the female executive indicator that

would be necessary to examine any such differential effect of the female board metric by executive sex. The specification does include interactions between the female board metric and the female executive indicator only for those hired through the external labor market. Only including this interaction leaves unclear what the effect is on internally promoted executives, and what is the effect on males hired through the external market. Even if these issues are ignored, the included interaction effect, while positive is not statistically significant in any event. These results are unreliable, and they do not provide the support Konrad claims even if they were reliable.

Yoshio Yanadori, Jill A. Gould, and Carol T. Kulik (2018). "A fair go? The gender pay gap among corporate executives in Australian firms," International Journal of Human Resource Management, 29(9): 1636-1660.

91. This paper likewise does not even claim to account for endogeneity. Not only does the paper not include even firm fixed effects (which, as noted above, under certain assumption could yield some confidence regarding causality), it does not include even industry controls. This paper, however, does correctly include the female X female board representation interaction that is necessary to examine whether female board representation has any effect on the male-female executive pay gap. The results from this interaction are only marginally statistically significant for total pay ($0.10 > p > 0.05$) and are not statistically significant for financial incentives. In any event, the failure to account for omitted variables bias in any way leaves these results unreliable.

Bozhinov, Joecks, and Scharfenkamp (in press) is not included in the reference list, but it appears to be:

Viktor Bozhinov, Jasmin Joecks, and Katrin Scharfenkamp (2021), "Gender spillovers from supervisory boards to managementboards," Managerial and Decision Economics, 42(5): 1317-1331.

92. This paper's claimed methodological innovation (using correlated random effects) is somewhat odd in that correlated random error models are generally used in situations where a researcher wishes to estimate the effects of variables that do not vary within an individual entity in a panel (in this case within a firm), making firm fixed effects not feasible (since fixed effects absorb all non-time varying effects). The correlated random effects model weakens the assumptions for the standard

random effects model (which requires that the control variables are not correlated with constant unobservable effects) which is why it is preferable to the standard random effects model (though still imposing stronger assumptions than the fixed effects model).[46] In the Bozhinov et al paper, however, there is variation over time in their variable of interest (various versions of whether there were women on a firm's corporate board in a previous period), making it possible to estimate fixed effects models (which, again, rely on weaker identifying assumptions than the correlated random effects assumption). A possible explanation for using correlated random effects models in this setting where fixed effects models are possible could be on efficiency grounds (i.e., the correlated random effects estimator might provide lower standard errors because it allows the estimator to gain information even from those entities where the variable of interest does not vary at the firm level over the researchers 2009-2016 time period), but even in that case, it would be important to provide both the correlated random effects estimates and the fixed effects estimates to discern whether they differed substantially (which would be indicative of bias in the correlated random effects estimates). That the authors do not do this is perplexing and should limit confidence in the reliability of the paper's conclusions. Beyond this concern, as with fixed effects models, if any effects of omitted variables are changing over the 17-year period examined by the authors, the estimates would be biased and unreliable.

Cook and Glass (2016) does not appear in the reference list, but appears to be:

Alison Cook and Christy Glass (2016), "Do women advance equity? The effect of gender leadership composition on LGBT-friendly policies in American firms," Human Relations, 69(7): 1431-1456.

93. This paper has a number of problems and concerns. First, although the paper claims to control for firm fixed effects, it also indicates it controls for industry fixed effects, which would not be possible since a firm's industrial classification is generally fixed, leaving a reader to question whether the models actually include firm fixed effects. This concern is important since firm fixed effects is the paper's only attempt to address omitted variable bias. Secondly, the female board effect goes away (becomes statistically insignificant and the sign of the effect becomes inconsistent) in Table 5 which

[46] See, for example, Reinhard Schunck (2013), "Within and between estimates in random-effects models: Advantages and drawbacks of correlated random effects and hybrid models," Stata Journal, 13(1): 65–76.

limits the sample to firms with female CEOs. Since this is a small fraction of the sample, it might not be enough to totally extinguish the female board member effect, but it is driving at least some of the estimated effect; the authors never provide results controlling both for female CEO and the woman board member metric in the full sample to allow the reader to see how much of the general women board member effect is specific to firms with female CEOs. Along similar lines, Table 4 shows that firms with women board directors who are on other firms' boards ("interlinks") are drivers of the LGBT policies. However, the authors never present a regression that jointly includes the female board member metric, the female interlink measure, and a general interlink measure. It might be the case that it is interlinked boards in general that are driving the claimed female board and female interlink effects. It is standard practice when estimating interaction effects to include the main effects as well to avoid these biases. All that said, especially if the paper does not actually include firm fixed effects, this paper does not do much to account for endogeneity. Finally, this paper does nothing to account for the dependence issue that arises from using panel data, and therefore its standard errors are unreliably calculated, leading to reliability issues with its determination of statistical significance.

Corwin, Loncarich, and Ridge (in press) is not listed in the references, but it appears to be:

Emily Corwin, Holly Loncarich, and Jason W. Ridge (2021), "What's It Like Inside the Hive? Managerial Discretion Drives TMT Gender Diversity of Women-Led Firms, forthcoming.

94. This paper does nothing to account for endogeneity in female board representation, not even fixed effects. This paper does not provide reliable estimates of the effect of female board representation on the degree to which a firm appoints women to its top management team.

Furlotti et al (2019) does not appear in the reference list, but it appears to be:

Katia Furlotti, Tatiana Mazza, Veronica Tibiletti, and Silvia Triani (2019), "Women in top positions on boards of directors: Gender policies disclosed in Italian sustainability reporting," Corporate Social Responsibility and Environmental Management, 26(1): 57-70.

95. This paper does not examine female board members generally, only the effect of having a female chairperson, indicating it is not relevant to the general issue of the effect of appointing women to corporate boards. Beyond this relevance issue, the paper does nothing to account for endogeneity, despite Konrad's indication that "all listed studies analyzed panel data and tested/adjusted for

endogeneity."

Gould, Kulik, and Sardeshmukh (2018) is not listed in the references, but it appears to be:

Jill A. Gould, Carol T. Kulik, and Shruti R. Sardeshmukh (2018), "Trickle-down effect: The impact of female board members on executive gender diversity," Human Resource Management, 57(4): 931-945.

96. This paper undertakes an instrumental variables analysis to account for endogeneity. As with any instrumental variables analysis, the reliability of the approach depends on the quality of the instrument. The authors' instruments include a metric of how many of a firm's male directors are on other boards with female directors. This instrument has been criticized above since the presence of female directors on a competitor's boards may have competitive effects which would violate the exclusion restriction. That said, this paper does perform a test of over-identifying restrictions, so if its other instruments are good (or at least not directly related to the firm's behavior in the same way as the other instruments), it can validate the instrumental variable estimates. Unfortunately, one of the other instruments, the lagged outcome variable would, by construction, be endogenous in the same way since it is the same variable merely lagged (so any persistence in behavior would generate similar omitted variable bias). The authors purport to use a third instrument, the presence of ASX recommendations for disclosures, but since this instrument affects all firm in a given year, it is duplicative of a background year fixed effect (which the models do not include) and will therefore merely pick up background trends in female board representation which will obviously affect the first instrument, leaving all of the instruments to likely be endogenous in exactly the same way. Thus, the fact that the estimates pass the test of overidentifying restrictions is not a reliable guide to whether the estimates are indeed reliable themselves.

Matsa and Miller (2011) does not appear in the reference list, but it is likely:

David A. Matsa and Amalia R. Miller (2011), "Chipping away at the Glass Ceiling: Gender Spillovers in Corporate Leadership," American Economic Review: Papers and Proceedings, 101(3): 635-639.

97. This paper is included in the non-peer reviewed papers and proceedings issue of the American Economic Review, which publishes short versions of presentations made at the American

Economic Association's Annual Meeting. The short papers are often descriptive or preliminary papers that, after receiving commentary and engaging in subsequent revisions often are published elsewhere or never generate a future publication. The authors never published a follow up version of the paper. While this short 5-page paper presents interesting descriptive results indicating that firms with higher proportions of females on their boards are more likely to have females among their top five executives in the following year, it is hard to claim causality. Of the six specifications they present, two include lagged dependent variables which can generate biases as discussed above. Of the remaining four specifications, only one includes firm fixed effects, and that estimate is anywhere from 25 to 50 percent as large as the other estimates, strongly suggesting that there is substantial scope for omitted variable bias in the authors' estimates. While the authors do argue that their specification which includes leading (i.e., future) values of their female board metric and they generate statistically insignificant coefficients, leading them to suggest maybe there is a causal relationship between female board representation and the appointment of women among a firm's top five executives, they do not do this exercise with firm fixed effects (or even with industry fixed effects). This leaves open the strong possibility that their timing argument would not survive strong attempts to account for endogeneity. The concluding remarks of Matsa and Miller ("If these estimates capture the causal effects of changing board composition, what do they imply about the nature of the glass ceiling and its potential remedies?" p. 639) indicate the speculative nature of their analysis. Such speculation is completely appropriate in the context of a conference proceedings where the idea is to solicit commentary and criticism, as well as to spur future research, but it does not constitute reliable evidence. The fact that Matsa and Miller (or anyone else in the almost 400 articles citing Matsa and Miller) have not published even a working paper shoring up these conference results in the intervening 10 years is indicative that the preliminary results have not led to reliable subsequent estimates.

Exhibit G

98. Konrad states that the studies she examines in exhibit G "clearly show that firms with more women directors take fewer extreme risks that push the firm into crisis and failure." When the studies are examined closely, however, this is far from clear. The first two studies she lists (the only ones examining the critical mass effect) have mixed results. Even putting aside the methodological

problems with these studies, which are similar to those already reviewed, it is misleading to say that this literature clearly shows anything about the relationship between female board participation and risk. The more accurate assessment, even taking the studies' reliability as given (which would be a mistake), is that it depends on what firms one considers, which implies it is imprudent to force a one-size-fits-all mandate on all firms.

Birindelli, Chiappini, and Savioli (2020) does not appear in the reference list, but it is likely:

Giuliana Birindelli , Helen Chiappini , and Marco Savioli (2020), "When do women on board of directors reduce bank risk?" Corporate Governance, 20(7): 1307-1327.

99. This paper uses fixed effects models, which can reliably isolate causal effects under the assumption that the effects of unmodeled characteristics of the bank are constant over time. While this assumption can be questioned, this paper represents a bigger issue with respect to its conclusion in Konrad's report. First, when the authors break the sample into sound and unsound banks, the effects of female participation on the board are directly opposite each other (negative relationship with risk for sound banks; positive for unsound banks). This, even if one completely accepts the results of the paper, suggests that a one-size-fits-all mandate for board diversity is inappropriate. To put the issue more pointedly, presumably risk management efforts are even more important for unsound banks, in which case these results suggest a mandate to increase female board participation would be harmful to the banks most at risk. Second, although Konrad suggests that this paper supports the critical mass hypothesis, many of the specifications show a non-linear relationship that shows while low levels of women on boards can be helpful in mitigating risk for some banks, a higher level is detrimental. That is, the paper's mixed results hardly support the general conclusion that reaching a critical mass of women on bank boards reduces risk, even if the paper is taken as completely reliable.

Dowling and Aribi (2013) is absent from the reference list, but it is probably:

Michael Dowling and Zakaria Ali Aribi(2013), "Female directors and UK company acquisitiveness," International Review of Financial Analysis, 29(C): 79-86.

100. Putting aside concerns about endogeneity (of which there are many; the only attempt the paper makes to account for endogeneity is to include basic covariates), this paper, while finding a relationship between females on corporate boards and acquisition activity of the firm, provides no way

to assess whether these acquisitions improved or worsened risk. That is, there is no a priori effect of an acquisition on risk. An acquisition could worse risk if the acquired firm is risky itself or if the financial details of the acquisition generate financial risk. On the other hand, an acquisition could generate diversification opportunities across markets, as well as provide improvements to supply chains and the like. Nothing in this paper provides any insight into which acquisitions improved risk or made it worse. It would be wrong to suggest that this paper reliably supports the claim that greater female board participation improves a firm's risk.

Exhibit H

Niccolò Gordini and Elisa Rancati (2017), "Gender diversity in the Italian boardroom and firm financial Performance," Management Research Review, 40(1), 75-94.

101. This paper purports to run an instrumental variables regression (2SLS), but it literally has zero discussion of what instruments it used to account for the endogeneity of the female board metrics. Without any way to assess the validity of the instrument used, it is not prudent to rely on this study.

Isidro and Sobral (2015) is not included in the reference list, but it appears to be:

Helena Isidro and Márcia Sobral (2015), "The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance," Journal of Business Ethics, 132(1): 1-19.

102. Although this paper estimates a simultaneous equation model in an attempt to address endogeneity concerns, they do not claim to include any exogenous instruments in their system, which means the entire system is unidentified. Their approach is not reliable, and their estimates likely suffer from omitted variables bias.

Joecks, Pull, and Vetter (2013) is not included in the reference list, but it is likely:

Jasmin Joecks, Kerstin Pull and Karin Vetter (2013), "Gender Diversity in the Boardroom and Firm Performance: What Exactly Constitutes a "Critical Mass?"" Journal of Business Ethics, 118(1): 61-72.

103. The only attempt to address endogeneity in this paper is to implement random effects, which only addresses omitted variable bias if the unmodeled effects are uncorrelated with the modeled effects, which is a highly restrictive assumption. The results are therefore unreliable.

Owen, A. L., & Temesvary, J. (2018). The performance effects of gender diversity on bank boards. Journal of Banking & Finance, 90, 50-63.

104. See comments on Section B above.

Nguyen, Locke, and Reddy (2015) is not included in the reference list, but it is likely:

Tuan Nguyen, Stuart Locke, and Krishna Reddy (2015), "Does boardroom gender diversity matter? Evidence from a transitional economy," International Review of Economics & Finance, 37(C), pages 184-202.

105. This paper relies on a systems GMM approach. For this approach to be valid, it must be the case that the lagged control variables are indeed unrelated to the outcome variable. That is, one must believe that things like the presence of outside directors or the existence of block shareholders only have immediate but not longer run effects on firm value (Tobin's Q, which is used as the outcome variable in this study). If, instead, one believes that these variables can have enduring effects on firm value (or the choices and behavior that affect that value), the GMM approach will not provide reliable causal estimates.

Ramly et al (2017) is not contained in the reference list, but it appears to be:

Zulkufly Ramly, Sok-Gee Chan, Mohd Zulkhairi Mustapha, and Noor Sharoja Sapiei (2017), "Women on boards and bank efficiency in ASEAN-5: the moderating role of the independent directors," Review of Managerial Science, 11(1): 225-250.

106. This paper likewise uses GMM methods, so the preceding comment applies.

Jun Xie, Wataru Nozawa, and Shunsuke Managi, (2020), "The role of women on boards in corporate environmental strategy and financial performance: A global outlook," Corporate Social Responsibility & Environmental Management, 27: 2044-2059.

107. This paper does nothing to address endogeneity. Its regressions account for only sector and country fixed effects, not firm fixed effects, so any unobservable characteristics of the firm (even constant ones) that are correlated with the presence of female directors (and recall that Konrad's entire report is an argument that female directors are related to almost every important aspect of firm behavior and performance), will generate a bias in the estimation of the relationship between female board participation and financial performance. Interestingly enough, if one ignores this concern, some of the

results in this paper show a negative relationship between women on a firm's board and financial performance (e.g., return on assets in Table 7). However, there is no reason to believe the results from this paper.

Conclusion

108. As stated before, Konrad relies selectively on the literatures relevant to claims she makes. However, even if this is ignored, the papers she cites are generally not credible and their conclusions are unreliable. Perhaps anticipating this criticism, Konrad provided a supplemental declaration in which she attempts to claim that although it is hard to make causal inferences, "Such top-tier studies in this field show amazing consistency in replicating findings showing that board diversity has beneficial effects on firm outcomes, and such replication is a critically important piece of the evidence scientists use to build theoretical consensus regarding causal inferences. As such, these studies are as valid as they can possibly be, and the consistency of their findings is an extremely strong indicator supporting causality.[47]" One reason that the results Konrad cites exhibit "amazing consistency" is because she either ignores or is unaware of the large number of studies reaching different conclusions. Further, as argued here, many of the papers she cites duplicate each other's errors (e.g., using invalid instruments; not accounting for endogeneity at all, failure to appropriately account for dependence in the data, etc.), so their consistency of results is not generally a source of confidence. Konrad's conclusions are not reliable.

Schipani declaration

109. Professor Cindy Schipani offers a number of conclusions in her declaration that are not well-supported by reliable research. For many of her claims, Schipani cites to media reports or consulting reports, none of which is subjected to peer review or any other form of methodological evaluation. As I have indicated elsewhere (Klick 2021), consulting reports in general (including specific discussion of many of the reports cited by Schipani) use data from non-representative samples, engage in limited attempts to adjust or control for differences across firms when discussing gender representation and its effects on firm behavior, and rarely discuss their methods in a way that allows for

[47] SUPPLEMENTAL DECLARATION OF ALISON KONRAD, PH.D, IN SUPPORT OF SECRETARY OF STATE'S OPPOSITION TO PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT Reservation No. 978453166871, paragraph 16.

transparent assessment of the reliability of the claims made in such studies.[48] These sources are unreliable from a social scientific standpoint. Schipani also heavily relies on sources published in student-edited law reviews, which likewise are not subjected to any methodological scrutiny and should be viewed with caution in terms of reliability of the methods used to draw conclusions, at least when it comes to statistical analyses or any claims regarding the causality link between women in board positions and firm performance.

110. Luckily, Schipani also draws upon potentially more reliable quantitative research published in peer-reviewed journals. Unfortunately, peer review alone is no guarantee of methodological rigor, as detailed below. As a general matter, the work Schipani invokes does not provide a reliable evidentiary basis for most of her claims. In the sections that follow, I walk through the claims and offered evidence.

Underrepresentation of Women on Boards of Directors

111. In this section, where Schipani claims that women are underrepresented on corporate boards as compared to men, Schipani invokes mostly consulting, media, and law review sources to make her argument. Beyond these sources, Schipani uses Bureau of Labor Statistics data (from the Current Population Survey) to note that women make up more than 50 percent of management, professional, and related occupations and represent similar proportions of people entering law and medical schools and more than half of those receiving doctoral degrees and nearly half of all master's degrees in business. However, contrasted with this, she notes sources indicating that board seats are not distributed equally between men and women. The implication is that if the pool of educated people is on parity between men and women, boards should reflect parity as well. Presumably, however, board membership is related to educational flows at a lag. Parity (and beyond) of women in these educational categories is a relatively recent phenomenon.[49]

112. Further, in the kinds of educational programs most likely to generate board members (in

[48] For details regarding the studies Schipani relies on, including reports by Catalyst, MSCI, McKinsey, Credit Suisse, and others, see Jonathan Klick (2021), Literature Review on Diversity on Corporate Boards, American Enterprise Institute Monograph.

[49] See, for example, the data presented in National Center for Education Statistics, Projections of Education Statistics to 2028, Post Secondary Degrees Conferred available at https://nces.ed.gov/programs/PES/section-6.asp.

the declaration of Jessica Grounds, the top four advanced degrees among female board members added to all-male board in California in 2019 were 1) MBA, 2) PhD in science or health-related field, 3) JD, and 4) MD), parity was reached only very recently, especially in the elite segment of that educational market[50] if it has been reached at all.[51] It should not be surprising, given this recency and that even the most elite professional school graduates cannot ascend to corporate boards upon graduation, that parity on boards has not arrived. Accounting for this issue makes the gender-gap much less striking. For example, the existing stock (i.e., not just the in-flow of graduates) of those with a research doctoral degree in science, engineering, or health is split 65 percent/ 35 percent in favor of men without even taking program prestige into account.[52] However, the stock differentials decline with age, suggesting that the pools will grow ever closer together, naturally leading to greater parity in board composition.

113. When saying that women are under-represented, Schipani is implicitly suggesting that boards should mirror the unconditional population in the U.S. Board members, however, are not drawn from the unconditional population. Instead, board members exhibit backgrounds that differ from the general population with respect to their educational backgrounds in terms of both the kind, quality, and prestige of that education. Comparisons that do not take these issues into account are not reasonable.

Factors Explaining "Underrepresentation" of Women on Boards

114. In discussing the factors that lead to the claimed underrepresentation of women on

[50] Women still do not outnumber men in MBA programs, and the University of Pennsylvania (see Jason Armesto, "Why women are the MBA minority and how that can change," Fortune: July 20, 2021 available at https://fortune.com/education/business/articles/2021/07/20/why-women-are-the-mba-minority-and-how-that-could-change/) and the University of Pennsylvania's Wharton School was the first "elite" business school to see women outnumber men, and that did not happen until Fall 2021 (see Patrick Thomas, "Wharton Is First Elite M.B.A. Program to Enroll More Women Than Men," Wall Street Journal: July 28, 2021. Women first outnumbered men in terms of law school enrollment in 2016 and lagged far behind until at least the 1990s (see time series data at https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/enrollment_degrees_awarded.xls). Women did not represent a majority of medical school students until 2019 (see Linda Searing, "The Big Number: Women now outnumber men in medical schools," Washington Post December 23, 2019).

[51] While women have received as many or more PhDs as men have for over a decade, they are still severely under-represented in science and health-related fields, especially at more prestigious programs (see Kim A. Weeden,

Sarah Thébaud, and Dafna Gelbgiser (2017), "Degrees of Difference: Gender Segregation of U.S. Doctorates by Field and Program Prestige," Sociological Science, 4: 123-150).

[52] Daniel J. Foley, Lance A. Selfa, and Karen H. Grigorian (2019), "Number of Women with U.S. Doctorates in Science, Engineering, or Health Employed in the United States More Than Doubles since 1997," Info-Brief National Center for Science and Engineering Statistics, NSF 19-307.

boards, Schipani invokes interviews and consulting materials that attribute the low number of women to firms not prioritizing the recruitment of women, few women in the traditional pipeline, low board turnover, and a tendency of men to prefer individuals who are like them. She also notes a study claiming that firms prefer gender matching when replacing departing board members which creates an inertia favoring male board members.[53] In the cited study's analysis using real world data (there are a number of analyses using data from experiments with undergraduate students; these analyses are seemingly not relevant given that undergraduate students do not choose corporate board members), while it is true that firms appear to be more likely to appoint a woman board member when there are more female board members exiting and less likely to appoint a female when there are more male directors exiting, the marginal effect relating to female exit is almost 3 times as large as the effect relating to male director exit. This suggests a natural reduction in the net gap between male and female directors if directors of both sexes exhibit comparable tenures. That Schipani emphasizes the inertial effect (leading to continued disparities) over the net effect (leading to reduced disparities) is somewhat misleading.

115. Schipani also cites a study in support of the idea that gender stereo type bias affects board choices.[54] This study analyzes an experiment where there were no consequences for the participants, and the scenario analyzed in the experiment had nothing to do with corporate leaders. Also, there is no indication that the study participants were similar in any way to those individuals who are involved in choosing corporate board members. The experimental setting of the decisions of the participants, the different context of the decision, and the total disconnect between the study's decisionmakers and the policy relevant decisionmakers make the relevance of this study highly questionable. There is little to tie this research to policy questions about corporate board choices.

116. Schipani uses another study to claim that employers favor men because they discriminate

[53] Catherine H. Tinsely, James B. Wade, Brian G. M Main, and Charles A. O'Reilly (2016), "Gender Diversity on U.S. Corporate Boards: Are We Running in Place?" Industrial and Labor Relations Review, 70(1): 160-189.

[54] Victoria L. Brescoll, Erica Dawson & Eric Luis Uhlmann (2010), "Hard Won and Easily Lost: The Fragile Status of Leaders in Gender-Stereotype-Incongruent Occupation," Psychological Science, 21(11): 1640-1642.

against mothers but not fathers.[55] One of the analyses in this study is a small sample laboratory experiment of undergraduates, who faced no consequences for their choices, the question involved hiring an employee, not a board member, and the undergraduates bear little resemblance to individuals who actually choose board members. This portion of the study is similarly not relevant to the policy question involved in a board diversity mandate. In the more realistic part of the study, the researchers sent out otherwise identical resumes in response to job openings where they randomized indications of the applicants' sex and parental status. While it is true that there was a statistically significant negative effect on the interaction between being a parent and being female (implying a motherhood "penalty" but no fatherhood "penalty"), the study also found a statistically significant positive effect of being a woman. This suggests an ambiguity regarding whether firms discriminate against women in total. Although the experimental manipulation provides methodological benefits in terms of causal inference and the use of real-world jobs provides a degree of external validity that is absent in the laboratory experiments, it is still highly questionable whether hiring choices for jobs advertised in a newspaper bear any resemblance to the choice of a corporate board member and provides little relevant evidence about the need for diversity mandates for corporate boards.

Gender Diversity and Firm Performance

117. The link between gender diversity and firm performance is mixed at best, and many proponents of diversity mandates cite a number of studies that are methodologically unreliable in support of their argument that gender diversity improves firm performance, while ignoring studies that do not support their arguments. [56] Schipani is no different in this regard, citing a number of consulting reports that have little in the way methodological rigor, as well as citing low quality studies and/or emphasizing only supportive parts of other studies, while ignoring those studies that find any negative effects of women on boards. For example, Schipani cites the positive parts of a 2015 meta-analysis,[57] for the proposition that the meta-analysis found a positive relationship between female representation on

[55] Shelley J. Correll, Stephen Benard, and In Paik (2007), "Getting a Job: Is there a Motherhood Penalty?" American Journal Of Sociology, 112: 1297-1338.

[56] *See* Jonathan Klick (2021), Review of the Literature on Diversity on Corporate Boards, American Enterprise Institute Monograph, as well as the earlier discussion of the Konrad declaration.

[57] Corrine Post and Kris Byron (2015), "Women on Boards and Firm Financial Performance: A Meta Analysis," Academy of Management Journal, 58(5): 1546-1571.

boards and accounting returns without noting that the relationship is quite small and highly variable and that the study also found no relationship between female board membership and stock returns.

118. Another study Schipani cites[58] is methodologically unsound since its only attempt to account for endogeneity is to use the lag of their control variables. As discussed above, the use of lags does not account for omitted variables bias since there is persistence in firms' behavior and performance, so if a variable is endogenous to the current period's outcomes, it is also endogenous to past period outcomes. This paper has other methodological issues as well that call its reliability into further question.[59]

119. Schipani cites another paper[60] for the point that women on boards and financial performance are positively correlated. However, this is a gross simplification of the paper's actual results. First, the average effect (Table 2) of women on boards is not statistically significant when firm fixed effects are accounted for (as they should be if one worries about unmodeled firm characteristics influencing firm outcomes) and, even the coefficients themselves are mixed (negative for Tobin's Q as the outcome and positive for return on assets). When firm fixed effects are not included, while the effects are statistically significant, the relationship is negative for the return on assets outcome and positive only for the Tobin's Q outcome. When the authors move to the quantile regressions, they drop the firm fixed effects which makes the estimates unreliable since they do nothing to account for omitted variables bias. But even if that is ignored, the results suggest positive statistically significant relationships only for the Tobin's Q measure of performance; for the return on assets measure, at some points in the distribution, the estimated effect is statistically significantly negative, and at the median it is not statistically significant at all. Only at high (unexplained) returns on assets is the female board effect statistically significant and positive. If one takes these results at face value (which would likely be a mistake given the identification concerns noted earlier), at best, this recommends an increase in

[58] Victoria Geyfman, Wade A. Cooper, and Laura M. Davis (2018), "Board Gender Diversity and Bank Performance," Journal of Business Diversity, 18(1): 51-67.

[59] For example, despite using panel data, the regressions do not account for serial dependence, leading it to estimate biased standard errors, which make the paper's statistical significance determinations unreliable.

[60] Martin J. Conyon and Lerong He (2017), "Firm Performance and Boardroom Gender Diversity: A Quantile Regression Approach," Journal of Business Research, 79: 198-211.

female representation on a firm's board only for some firms. This kind of result does not support a one-size-fits-all regulation.

120. Schipani cites a number of papers for the proposition that technology organizations that are gender diverse improve employee performance. Putting aside methodological concerns (few of these papers address endogeneity), many of these papers do not examine female board members. Instead, they study female managers,[61] gender diversity in the overall workforce,[62] students in a class,[63] and small groups completing fairly simple tasks.[64]

Importance of a "Critical Mass" of Women on Corporate Boards

121. Schipani cites only to consulting reports for the proposition that a critical mass of women on the corporate board are important to influence and improve firm. As indicated before, such consulting reports are not methodologically rigorous and are generally unreliable.

Value that Women in Key Positions Add to Firms

122. Schipani claims that adding women to a board of directors improves firm value in many ways. While this section relies heavily on consulting reports, it also repeatedly discusses a paper from the American Economic Review, where Schipani notes the journal by name (as opposed to just including it in a citation footnote). However, she fails to mention that it is actually the American Economic Review Papers and Proceedings,[65] which is a non-refereed conference proceedings issue of the journal (published annually). This oversight leaves open the possibility that readers will accord the

[61] Hema A. Krishnan and Daewoo Park (2005), "A Few Good Women – on Top Management Teams," Journal of Business Research, 58: 1712-1720.

[62] Cedrick Herring (2009), "Does Diversity Pay?" American Sociological Review, 74(2): 208-224.

[63] Sander Hoogendoorn, Hessel Oosterbeek, Mirjam van Praag (2013), "The Impact of Gender Diversity on the Performance of Business Teams: Evidence from a Field Experiment," Management Science, 59(7): 1514–1528. Although the students in a class leave this study as lacking in relevance, the use of randomization does make this study reliable at least in terms of understanding the particular context studied.

[64] Anita Williams Woolley, Christopher F. Chabris, Alex Pentland, Nada Hashmi, and Thomas W. Malone (2010), "Evidence for a Collective Intelligence Factor in the Performance of Human Groups," Science, 330(6004): 686-688. This paper uses randomization for identification, so it is reliable in terms of the specific setting studied, but its relevance to boards directing companies is unclear.

[65] Daehyun Kim and Laura T. Starks (2016), "Gender Diversity on Corporate Boards: Do Women Contribute Unique Skills?" American Economic Review: Papers and Proceedings, 106(5): 267-271.

prestige of the normal journal, not to mention its low acceptance rate and rigorous review process, to an invited submission publication that gets very little editorial attention and no peer review. Perhaps the most useful information in the article is provided in figure 1 (unmentioned by Schipani) which shows that proportional female participation has been increasing in a wide range of firms (S&P 500, S&P 1500, S&P midcap 400, S&P smallcap 600) in an unbroken linear fashion over the period 1997-2013. The paper also provides descriptive statistics indicating the reported skills female directors bring to their firms but does not analyze any relationship to firm performance. It is incorrect to suggest that this paper provides any evidence regarding the relationship between female board participation and firm performance. Schipani does cite to a working paper[66] by the same authors (cited in the American Economic Review: Papers and Proceedings article) suggesting that these descriptive findings about the skills brought by female directors somehow creates the link with firm performance, but it appears as though the working paper is not publicly available, leaving it impossible to examine the reliability of the authors' methodology.

123. For the rest of this section, Schipani includes a number of studies of questionable relevance and often only citing them as having been cited by some other commentator. One such study purports to find that gender diversity reduces the likelihood of a financial restatement.[67] This study makes no credible attempt to identify a causal relationship. The study in Sustainability[68] that examines the relationship between female board participation and corporate social responsibility scores does use fixed effects, which is a credible approach if one assumes any omitted variable bias effect is constant for each firm, but they spoil the analysis by including the lagged dependent variable as a control which generates bias as discussed above. That said, the estimated effects of female directors on CSR scores

[66] Daehyun Kim and Laura T. Starks (2015), "Board Heterogeneity of Expertise and Board Performance,"Working Paper. A link on Starks Google Scholar page likewise does not provide the working paper (https://scholar.google.com/scholar?cluster=10371427173135621814&hl=en&oi=scholarr).

[67] Abbott J. Lawrence (2012), "Female Board Presence and the Likelihood of Financial Restatement," Accounting Horizons, 26(4): 607-629.

[68] Eunjung Hyun, Daegyu Yang, Hojin Jung, and Kihoon Hong (2016), "Women on Boards and Corporate Social Responsibility," Sustainability, 8: 300-325.

are never statistically significant and the effect of independent female directors is as often not statistically significant as it is statistically significant. This is hardly reliable evidence that female board directors add value to firms. Schipani also cites an article as cited within this article for the proposition that female directors reduce corruption,[69] that uses an instrumental variables approach that includes lagged control variables as instruments. However, if there is any lagged effect of firm characteristics on firm behavior, this approach is not reliable and will continue to generate an omitted variables bias. She cites Wahid (2019) which is unreliable as discussed earlier, as are other articles cited by Schipani.[70]

Conclusion

124. Schipani relies primarily on the assertions made by consulting firms, media outlets, and authors in student edited law reviews to argue that female board representation improves firm outcomes. She combines this with her determination that women are under-represented on firm boards since they fall short of parity, even though the stock of individuals with the educational backgrounds common for board members are not anywhere near parity. To the extent other research is used, it is generally either unreliable or it is not relevant.

Grounds Declaration

125. Ms. Jessica Grounds provides analysis of the number of women on corporate boards prior to the mandatory gender diversity provisions of SB826 and the number of women added to corporate boards in the years since SB826 went into effect. Grounds indicates that, despite the growth she documents between 2006 and 2015, the level of women directors among public firms headquartered in California is too low and the growth rate too slow to generate sufficient sex diversity on those boards. The determination of the "right" amount of female board representation is left somewhat vague.

126. As I suggested above [comments on Schipani declaration], female participation in the kinds of educational programs from which directors are drawn (according to Grounds's data, MBA, science or health-related PhD, JD, and MD) has only recently reached parity (and still lags substantially for the PhD in science or health-related fields category) and the levels of individuals with those

[69] Douglas Cumming, T. Y. Leung, and Oliver Rui (2015), "Gender Diversity and Securities Fraud," The Academy of Management Journal, 58(5): 1572-593.

[70] For example, Young Zik Shin, Jeung-Yoon Chang, Keyeongmin Jeon, and Hyunpyo Kim (2020), "Female Directors on the Board and Investment Efficiency: Evidence from Korea," Asian Business & Management, 19: 438–479 uses the GMM approach criticized earlier.

educations, especially from the prestigious programs that are relatively attractive to firms, are still highly unequal. Given this, it is necessary to think seriously about what a reasonable growth trajectory would look like, noting that individuals rarely (if ever) proceed directly from their post-graduate schooling to a seat on a corporate board. Grounds's analysis of the educational and other backgrounds of recently appointed female board members in California is not responsive to this concern since it seems entirely plausible that the firms which add women directors quickest after SB826 went into effect (or even in anticipation of it going into effect) would have the easiest time finding candidates with suitable or close to suitable credentials and backgrounds, whereas subsequent firms will need to search for candidates from a smaller relevant population (because of the educational disparities noted above) or, alternatively, rely on women who are already sitting on boards which may lead to problems of being spread too thin.

127. Again, Grounds showing that this has not happened yet is not surprising given that early moving firms will have a larger group from which to choose. Without rigorous analysis of the available qualified pool, which is absent from Grounds' analysis,[71] it is not possible to state how difficult and/or costly it will be for subsequent firms to comply with SB826. Grounds also only provides univariate descriptions (e.g., what roles the appointees performed previously, what their educational background is, etc.) as if a single characteristic proves to be a sufficient (rather than merely one of many required characteristics) in terms of being qualified to be a director. Also, conditioning on characteristics of the firms that have appointed female directors would be necessary since different firms likely have different requirements, and it is most likely important to match details like industry backgrounds and the like when determining if compliance with SB826 is as easy as Grounds's analysis implies.

128. Further, there is no comparison of these characteristics to those of men appointed previously, which would be informative with respect to whether the available pool is adequate. Likewise, there is no analysis of the relative qualifications of women appointed to boards later in her sample as compared to those appointed earlier, which could give a preliminary glimpse into whether the

[71] Grounds claims otherwise when she states "Data shared in this declaration indicates that not only is this law expanding the pool of directors for corporate board service, but many of the women are first-time corporate board directors." However, nowhere in Grounds' report is there an analysis of the pool, only a description of the result of searches by early moving firms; appointees being first-time corporate board directors indicates nothing about the characteristics of the pool from which they were chosen.

pool of female candidates is sufficient for all firms to meet SB826's requirements.

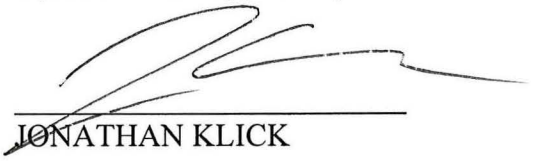
129. On the whole, the analysis in the declaration made by Grounds is not sufficient to judge whether the newly appointed women to California corporate boards are better, worse, or the same (in terms of qualifications) as compared to the counterfactual in which sex diversity had continued to grow organically.

Conclusion

130. While the declarations in support of Secretary Padilla's motion claim that (1) women are underrepresented on firm boards, (2) this underrepresentation is the result of discrimination, and (3) appointing more women to boards would improve firm outcomes, none of these assertions is supported by the evidence provided.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on September 7, 2021, at Penn Valley, Pennsylvania.



JONATHAN KLICK

EXHIBIT 1

JONATHAN KLICK

University of Pennsylvania Law School, 3501 Sansom Street, Philadelphia Pennsylvania 19104-6204
215.746.3455 ● 215.573.2025 (fax) ● jklick@law.upenn.edu ● www.law.upenn.edu/faculty/jonathan-klick

EDUCATION

J.D., *George Mason University School of Law*, Arlington Virginia, Awarded May 2003 (*cum laude*)
Robert A. Levy Fellow in Law and Liberty (Tuition Waiver and Stipend); Whitney Writing Prize

Ph.D., Economics, *George Mason University*, Fairfax Virginia, Defended November 2001
Fields: Public Choice, Industrial Organization and Public Policy

M.A., Economics, *University of Maryland at College Park*, Awarded May 1999
Fields: Public Finance, Political Economy of Growth & Income Distribution, Microeconometrics

B.S., Economics, *Villanova University*, Villanova Pennsylvania, Awarded May 1997 (*summa cum laude)*
Villanova University Presidential Scholar and British Marshall Scholarship Finalist (100 nationally)

PROFESSIONAL EXPERIENCE

University of Pennsylvania: Visiting Professor of Law (Fall 2007); Professor of Law (Summer 2008 – Present).

Erasmus University Rotterdam: Erasmus Chair of Empirical Legal Studies (2009 – Present).

Waseda University: Visiting Law Professor (Summer 2016).

Yale Law School: Maurice R. Greenberg Visiting Professor (Fall 2013).

University of Ljubljana Faculty of Economics: Visiting Professor (Summer 2013).

Bar Ilan University Faculty of Law: Visiting Professor (December 2012).

University of Canterbury Department of Economics and Finance: Erskine Visitor (Summer 2010).

Property and Environment Research Center: Julian Simon Fellow (Summer 2009); Lone Wolf Fellow (Summer 2012).

The RAND Corporation, Institute for Civil Justice: Senior Economist (2007 – 2009).

Northwestern University Searle Center: Visiting Scholar (January 2009); Instructor in Judicial Education Program (Spring 2009 – Spring 2010); Senior Economist (Spring 2009 – Spring 2010).

University of Hamburg: Visiting Professor of Law and Economics (Summer 2008, 2010, 2011).

Columbia Law School: Visiting Professor (Spring 2008).

University of Southern California School of Law: Visiting Professor (August/September 2007).

Northwestern University School of Law: Visiting Professor (November 2006).

Florida State University: Assistant Professor of Law (Summer 2004 – Summer 2007); Jeffrey A. Stoops Professor of Law (Summer 2005 – Spring 2008); Associate Professor (August 2007 – Spring 2008); Courtesy Professor of Economics (Summer 2004 – Spring 2008).

TEACHING EXPERIENCE

Antitrust: Penn; Waseda
Corporate Finance: Florida State; Columbia
Corporations/Business Associations: Penn; Florida State; Waseda
Econometrics (graduate level): Canterbury
Econometrics (undergraduate level): George Mason
Empirical Law and Economics: Penn; Florida State; Erasmus; Hamburg; Bar Ilan; Goethe-Universität Frankfurt; Max Planck Research School; Ljubljana; Study Center Gerzensee; Lucerne Graduate Academy
Evidence Based Crime Prevention (graduate level): Penn Criminology Department
Expert Evidence: Penn
Law and Economics: Penn; Florida State; Villanova University
Law and Economics of the Firm: Penn (JD/MBA)
Micro/Macro: Prince George's County Community College; University of Maryland; George Mason
Statistics for Lawyers: Penn; Florida State; Max Planck Institute (Hamburg)
Torts: Penn; Yale

JONATHAN KLICK

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- "Roam if You Want to?" (with Gideon Parchomovsky) *Regulation*, 40(1): 18-22 (2017).
- *Law and Economics of Federalism*, editor (Edward Elgar Publishing, 2017).
- "Empirical Law and Economics," (with Jonah Gelbach) *Oxford Handbook of Law and Economics* (Oxford University Press, 2017).
- "Infantilization by Regulation," (with Greg Mitchell) *Regulation*, 39(2): 32-37 (2016).
- "The Value of Training in Quantitative Methods for Judges," *Economic Evidence in EU Competition Law* (Intersentia, 2016).
- "Regulation and Litigation: Complements or Substitutes," (with Eric Helland) *The American Illness: Essays on the Rule of Law* (Yale University Press, 2013).
- "Why Aren't Regulation and Litigation Substitutes?: An Examination of the Capture Hypothesis," (with Eric Helland) *Regulatory Breakdown? The Crisis of Confidence in U.S. Regulation* (University of Pennsylvania Press, 2012).
- "Mobile Phones and Crime Deterrence: An Underappreciated Link," (with John MacDonald and Thomas Stratmann) *Handbook of Criminal Law* (Law and Economics Handbook Series, Edward Elgar, 2012).
- "Global Justice and Trade," (with Fernando Teson) *Global Justice and International Economic Law: Opportunities and Prospects* (Cambridge University Press, 2012).
- "Fire Suppression Policy, Weather, and Western Wildland Fire Trends: An Empirical Analysis," (with Jason Johnston) *Wildfire Policy: Law and Economics Perspectives* (RFF Press, 2012).
- "Abortion Access and Risky Sex," (with Thomas Stratmann) *Handbook of Family Law* (Law and Economics Handbook Series, Edward Elgar, 2011).
- "The Law and Economics of Regulatory Competition," *Production of Legal Rules, Encyclopedia of Law and Economics*, 2nd ed. (Edward Elgar, 2011).

BOOK CONTRIBUTIONS, ETC. (CONTINUED)

- "Legal Origins and Empirical Credibility," (with Eric Helland) *Does Law Matter? On Law and Economic Growth*, Ius Commune Europaeum 100 (Intersentia Publishers, 2011).
- *The Empirical Revolution in Law and Economics: Inaugural Lecture for Erasmus Chair in Empirical Law and Economics* (Eleven International Publishing, 2011).
- "Response to Reducing Soda Consumption," (with Eric Helland) *Regulation*, 34(2): 3 (2011).
- "Slim Odds," (with Eric Helland) *Regulation*, 34(1): 20-23 (2011).
- "The AMT's Silver Lining," (with Brian Galle), *Regulation*, 33(3): 24-29 (2010).
- "The Dangers of Letting Someone Else Decide," Slippery Slopes and the New Paternalism, Cato Unbound (2010).
- "Revealing Revealed Preferences," Slippery Slopes and the New Paternalism, Cato Unbound (2010).
- "Police, Prisons, and Crime," (with Alexander Tabarrok) *Law and Economics of Crime* (Edward Elgar Publishing, 2010).
- "A More Equitable and Efficient Approach to Insuring the Uninsurable," (with Eric Helland) *Our Fragmented Health Care System: Causes and Solutions* (Oxford University Press, 2010).
- "Terrorism," (with Nuno Garoupa and Francesco Parisi) *Criminal Law and Economics* (Edward Elgar Publishing, 2009).
- "Functional Law and Economics," (with Francesco Parisi) *Theoretical Foundations of Law and Economics* (Cambridge University Press, 2009).
- "What Drives the Passage of Damage Caps?" (with Catherine Sharkey) *Empirical Studies of Judicial Systems Around the Globe* (Institutum Jurisprudentiae, Academia Sinica, 2008).
- "Econometric Studies of Law," "Functional Law and Economics," "Multivariate Methods in Legal Studies," and "Formal Methods in Legal Scholarship," *Encyclopedia of Law and Society* (Sage Publications, 2007).
- *The Health Disparities Myth: Diagnosing the Treatment Gap* (with Sally Satel): AEI Press, 2006.
- "Are Doctors Biased?" (with Sally Satel) *Policy Review*, 136(April & May): 41-54 (2006).
- "First, Do No Harm . . ." (with Thomas Stratmann) *Regulation*, 26(1): 9 (2003).
- "Drug Re-Importation's No-Win Solution," *Regulation*, 25(1): 6-7 (2002).

PRESENTATIONS

- Keynote Address, Polish Association of Law and Economics Annual Meeting (September 2021).
- Penn Law Faculty Workshop (July 2021).
- George Mason Law and Economics Workshop (March 2021).
- Texas A&M Crime Workshop (August 2020).
- Penn Law Faculty Workshop (February 2020).
- Rotterdam Institute of Law and Economics Workshop (January 2020).
- Amsterdam Center for Law and Economics Workshop (January 2020).
- Georgetown Law and Economics Workshop (November 2019).
- George Mason Law and Economics Workshop (November 2019).
- Penn Antitrust Symposium (October 2019).
- FTC Hearing, Roundtable with State Attorneys General (June 2019).
- Instituto Tecnológico Autónomo de México Economics Department Seminar (April 2019).
- Instituto Tecnológico Autónomo de México Law School Seminar (April 2019).
- Rotterdam Institute of Law and Economics Seminar (February 2019).
- Tilburg University Economics Department Seminar (January 2019).
- Columbia University Law and Economics Seminar (October 2018).
- Herbert Smith Freehills Connected and Autonomous Vehicles Conference (April 2018).
- Erasmus University Young Scholars' Conference Keynote Speech (April 2018).
- Vanderbilt University Law School Seminar (March 2018).
- University of North Carolina Law School Seminar (March 2018).
- West Virginia University Economics Seminar (February 2018).
- George Mason Law Review Antitrust Symposium (February 2018).

PRESENTATIONS (CONTINUED)

- Washington & Lee Journal of Civil Rights and Social Justice Symposium (November 2017).
- Penn Program on Regulation, The Distribution of Regulatory Impacts in the US (October 2017).
- Bloomberg Government, Health Disparities in Medicare Bundled Payments (October 2017).
- Penn Law Faculty Workshop (September 2017).
- Conference on Empirical Legal Studies Asia, Advanced Empirical Methods (June 2017).
- Journal of Institutional and Theoretical Economics Conference (June 2017).
- Villanova University Law School Workshop (March 2017).
- Erasmus University Rotterdam, Experiments at the Crossroads of Law and Economics (March 2017).
- George Mason University, Philosophy, Politics, and Economics Workshop (February 2017).
- UCLA, Law and Economics Workshop (February 2017).
- Indiana University, Ostrom Workshop, Symposium on Natural Resource Governance (October 2016).
- University of Missouri School of Law, Paternalism Conference (October 2016).
- Notre Dame University, Law and Economics Workshop (September 2016).
- Waseda University, Symposium on the Determinants of Health and Healthcare Costs (July 2016).
- Hitotsubashi University, Institute of Economic Research (June 2016).
- American Law and Economics Association Annual Meeting (May 2016).
- Erasmus University Rotterdam, European Doctorate in Law and Economics Seminar (March 2016).
- University of Chicago, Law and Economics Workshop (February 2016).
- Hebrew University of Jerusalem, Law and Economics Workshop (January 2016).
- University of Virginia, Law and Economics Workshop (October 2015).
- University of Sassari, Institutions, Individual Behavior, and Economic Outcomes Workshop (June 2015).
- Chinese University of Political Science and Law, University Lecture (May 2015).
- Chinese University of Political Science and Law, Rise of the Regulatory State Conference (May 2015).
- Florida State University, Global Justice Seminar (February 2015).
- University of Texas, Law and Economics Workshop (November 2014).
- University of Bologna, Keynote Address, EDLE Meeting (November 2014).
- Rutgers Camden, Healthcare Entitlements Discussion (November 2014).
- University of Leeds, Keynote Address, Behavioral Approach to Law Conference (June 2014).
- Erasmus Experiments at the Crossroads of Law and Economics Workshop (April 2014).
- Cardozo School of Law, Faculty Workshop (March 2014).
- NYU Colloquium on Market Institutions and Economic Processes (February 2014).
- George Washington University Law School Faculty Workshop (February 2014).
- University of Toronto Law and Economics Workshop (February 2014).
- LEC Workshop for Law Professors on Risk, Injury, Liability, & Insurance (February 2014).
- NYU Law and Economics Workshop (January 2014).
- Yale Faculty Seminar (December 2013).
- American Law and Economics Association Annual Meeting (May 2013).
- Villanova University, Department of Economics (February 2013).
- Hospital of University of Pennsylvania, Radiology Department Seminar (January 2013).
- Law and Economics Center, Law and Economics of Contracts (January 2013).
- Florida State University College of Law Workshop (January 2013).
- Bar-Ilan University Faculty of Law Seminar (December 2012).
- University of Haifa Faculty of Law Seminar (December 2012).
- Conference on Empirical Legal Studies, Stanford University (November 2012).
- University of Texas Law School Law and Economics Seminar (October 2012).
- Max Planck Research School Uncertainty Topics Keynote Speech (October 2012).
- University of Ljubljana Faculty of Economics Seminar (October 2012).
- University of Pennsylvania Law School Faculty Seminar (October 2012).
- Georgetown University Law Center Law and Economics Workshop (September 2012).
- Property and Environment Research Center Conference on Environmental Finance (August 2012).

PRESENTATIONS (CONTINUED)

- Property and Environment Research Center Workshop (July 2012).
- Cornell University, Empirical Health Law Conference (April 2012).
- Brooklyn Law School, Federalist Society Workshop (March 2012).
- Washington University in St. Louis Law School, Federalist Society Workshop (March 2012).
- Penn/NYU Law & Finance Conference (February 2012).
- West Virginia University Economics Seminar, (February 2012).
- Rotterdam Institute of Law and Economics Workshop (December 2011).
- Regulatory Breakdown Conference, Penn Program on Regulation (September 2011).
- Journal of Institutional and Theoretical Economics Conference (June 2011).
- Law and Economics Center, Workshop on Empirical Methods for Law Professors (May 2011).
- Queen's University, Faculty of Law, Law and Economics Workshop (April 2011).
- European Masters in Law and Economics Program, Mid-Year Meeting Keynote Lecture (February 2011).
- AALS, Law and Economics Panel (January 2011).
- Law and Economics Center, American Disease Conference (December 2010).
- University of Arizona/Resources for the Future, Wildfire Symposium (November 2010).
- George Mason University, Levy Workshop (November 2010).
- Erasmus University Rotterdam, European Doctorate in Law and Economics Seminar (October 2010).
- Erasmus University School of Law, Inaugural Empirical Legal Studies Chair Lecture (November 2010).
- University of Amsterdam, Center for the Study of EU Contract Law, Workshop (October 2010).
- University of Otago, Economics Department Seminar (September 2010).
- University of Canterbury, Economics and Finance Department Seminar (September 2010).
- University of Hamburg, Hamburg Lectures on Law and Economics (July 2010).
- Penn Law European Society, Academic Program Lecture (June 2010).
- American Law and Economics Association, Annual Conference (May 2010).
- St. Louis Lawyers Chapter of the Federalist Society, Health Care Reform Lecture (April 2010).
- Temple University Beasley School of Law, Human Behavior Colloquium (April 2010).
- University of Virginia Law School, Olin Conference on Crime (March 2010).
- Erasmus University School of Law, Behavioral Approaches to Contract and Tort Group (January 2010).
- European Doctorate in Law and Economics Program, Erasmus University Rotterdam (January 2010).
- University of Illinois Corporate Colloquium (November 2009).
- New York Law School Federalist Society, Health Care Lecture (October 2009).
- Fordham University Federalist Society, Health Care Reform Debate (October 2009).
- University of Pennsylvania, Wharton Research Scholars Seminar (September 2009).
- Property and Environment Research Center (August 2009).
- Harvard Medical School, Race Disparities Panel (April 2009).
- Northwestern University Federalist Society Panel Discussion (November 2009).
- Stanford Law School, Law and Economics Workshop (February 2009).
- University of Virginia School of Law, Law & Economics Workshop (January 2009).
- Southern Economic Association, Annual Meeting (November 2008).
- Northwestern University, Searle Center, Symposium on Civil Liability (October 2008).
- University of Pennsylvania Law School, Faculty Retreat (September 2008).
- Harvard University, Petrie-Flom Center, Our Fragmented Health Care System (June 2008).
- CUNY Graduate Center/NBER, Seminar in Health, Labor, and Demography (May 2008).
- Columbia University, Empirical Methods and the Law Workshop (May 2008).
- The Rand Corporation, Institute for Civil Justice Annual Board Meeting (March 2008).
- George Mason University, Philosophy, Politics, and Economics Workshop (March 2008).
- Columbia University Law School, Faculty Workshop (March 2008).
- Claremont McKenna College/RAND, The Future of Securities Litigation Conference (February 2008).
- University of Michigan Law School, Law and Economics Workshop (February 2008).
- American Economic Association, Annual Meeting (January 2008).

PRESENTATIONS (CONTINUED)

- Harvard Law School, Law and Economics Workshop (November 2007).
- Conference on Empirical Legal Studies (November 2007).
- Emory University School of Law, Faculty Colloquium (November 2007).
- Rice University/University of Houston Economics, Microeconomics Workshop (October 2007).
- University of Pennsylvania Law School, Faculty Workshop (October 2007).
- George Mason University School of Law, Levy Fellows Workshop (October 2007).
- The RAND Corporation, Institute for Civil Justice Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (August 2007).
- Yale Law School, Faculty Enrichment Lectures (July 2007).
- Florida State College of Law, Primer on Statistics for Legal Scholars (July 2007).
- Federal Trade Commission, Behavioral Economics and Consumer Policy Workshop (April 2007).
- Yale Law School, Law Economics and Organization Workshop (March 2007).
- Florida State University, Center for Demography and Population Health Workshop (March 2007).
- University of Toronto, Law & Economics Workshop (February 2007).
- Florida State University Department of Economics, Faculty Workshop (March 2007).
- University of Georgia School of Law, Faculty Workshop (February 2007).
- University of Southern California School of Law, Law and Economics Workshop (February 2007).
- Cornell Department of Policy Analysis and Management, Faculty Workshop (November 2006).
- Boston University School of Law, Faculty Workshop (November 2006).
- University of Illinois College of Law, Faculty Workshop (November 2006).
- Northwestern University School of Law, Faculty Workshop (October 2006).
- Conference on Empirical Legal Studies (October 2006).
- American Law and Economics Association, Annual Meeting (May 2006).
- University of Maryland Department of Economics, Labor/Public Workshop (April 2006).
- Columbia University School of Law, Blue Sky Workshop (March 2006).
- American Enterprise Institute, Health Disparities Myth Panel (February 2006).
- William & Mary School of Law, Faculty Workshop (February 2006).
- Georgetown University Law Center, Law and Economics Workshop (February 2006).
- George Mason University School of Law, Levy Workshop (February 2006).
- Northwestern University School of Law, Faculty Workshop (February 2006).
- American Association of Law Schools, Annual Meeting (January 2006).
- International Society for New Institutional Economics, Annual Meeting (September 2005).
- Northwestern University School of Law, Law and Economics Workshop (September 2005).
- University of California Berkeley, Law and Economics Workshop (August 2005).
- Southeastern Association of Law Schools, Annual Meeting (July 2005).
- American Law and Economics Association, Annual Meeting (June 2005).
- West Virginia University Department of Economics, Faculty Workshop (January 2005).
- Southern Economics Association, Annual Meeting (November 2004).
- International Society for New Institutional Economics, Annual Meeting (September 2004).
- American Law and Economics Association, Annual Meeting (May 2004).

PROFESSIONAL SERVICE

- Editor, *International Review of Law and Economics* (2012 – Present).
- Dean's Distinguished Fellow, Villanova University Charles Widger School of Law (2017-2020).
- Instructor: Various Law and Economics Center Training Programs (judges, law professors, regulators, etc); Global Antitrust Institute; European Doctorate in Law and Economics; European Masters in Law and Economics.
- External Reviewer for Chair/Tenure/Appointments Candidates: Harvard University Law School; Columbia University Law School; NYU School of Law; Northwestern University School of Law; University of Michigan Law School; Georgetown University Law School; Washington University Law; Cornell Law School; Boston University Law School; Emory University Law; University of Toronto Law School; UC Irvine Law School; Duke University School of Law; George Mason University School of Law; William & Mary Law School; University of Alberta Law School; Mercer University School of Law; Institutum Jurisprudentiae Academia Sinica; Clemson University; Claremont McKenna College; Cornell University; UNC Chapel Hill; West Virginia University; University of Southern California Medical School; University of Southern California School of Pharmacy; University of Wisconsin; ITAM.
- Grant Reviewer: National Science Foundation; Smith Richardson Foundation; Hong Kong Research Grants Council, Israel Science Foundation; French National Research Agency; Research Foundation Flanders; Netherlands Organization for Scientific Research (NWO), Eutopia European University.
- Referee: *Journal of Law & Economics*; *Journal of Legal Studies*; *Journal of Law, Economics, and Organization*; *American Law & Economics Review*; *International Review of Law and Economics*; *Law & Social Inquiry*; *Supreme Court Economic Review*; *Review of Law and Economics*; *Journal of Empirical Legal Studies; Review of Economics and Statistics; American Economic Journal: Applied Economics*, *Journal of Public Economics*; *Journal of Health Economics; American Journal of Health Economics; Health Affairs; Journal of Policy Analysis and Management*; *European Journal of Health Economics*; *European Journal of Political Economy; Public Choice*; *Journal of Institutional Economics; Economic Inquiry*; *Southern Economic Journal*; *Health Services Research Journal; Eastern Economic Journal*; *Contemporary Economic Policy*; *Social Science Quarterly*; *Policy Studies Journal*; *Social Science & Medicine*; *Social Science Research; Criminology; Journal of Criminal Justice; Journal of Quantitative Criminology; Journal of Crime and Justice; Journal of Experimental Criminology; Journal for the Scientific Study of Religion; Economics and Human Biology; Harvard Law Review*; *Stanford Law Review; University of Pennsylvania Law Review; Adaptive Behavior; MDPI Sustainability; PLOS One*; *Moral Philosophy and Politics*; Aspen Publishers; Edward Elgar Publishing; Wolters Kluwer Law & Business Publishing; Oxford University Press; Cambridge University Press, Harvard University Press, Columbia University Press, University of Chicago Press.

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Review of the Literature on Diversity on Corporate Boards

Jonathan Klick

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Executive Summary

Despite large increases in the representation of women and people from other minority groups on corporate boards, public and private regulators are pushing for more. California already passed mandates requiring firms headquartered in the state to meet quotas for women and members of other underrepresented groups on their corporate boards. The Nasdaq stock exchange proposed a similar mandate. To support this forced injection of diversity, the regulators point to a wealth of citations claiming diversity improves a firm's value.

Upon examination, though, the research base does not hold up. Many citations come from consulting firm position papers that lack credibility. These reports imply that, because higher-value firms tend to have more-diverse boards, diversity causes the increase in value, without even attempting to adjust for other differences across firms. The academic literature noted in the Nasdaq proposal is not much better. Reliable causal inferences require methods that ensure one is comparing apples to apples, whereas most of the cited literature does little more than add a few control variables to get to an apples-to-bananas comparison, at best.

It also appears that the Nasdaq proposal selectively surveyed the literature on board diversity. When meta-analyses are consulted, the literature as a whole finds little relationship between board diversity and firm value. This systematic review of the literature aligns with numerous other literature reviews, even those performed by individuals predisposed to favor diversity mandates, finding that the evidence is weak for a business case for diversity.

The Nasdaq proposal ignores many studies that are much more reliable methodologically. For example, studies examined the enactment of diversity requirements in Norway, using it as a natural experiment that would provide insight into what happens when firms are forced to diversify their boards. Findings from the Norwegian experience indicate, at best, that diversity mandates do not improve firm value, and some studies find the quotas harmed firm performance. Additionally, many firms chose to go private to avoid the regulation.

There is no credible evidence that diversity requirements systematically improve firm performance.

Review of the Literature on Diversity on Corporate Boards

Jonathan Klick

Women are better represented on US corporate boards than ever before. According to data from the proxy advisory firm Institutional Shareholder Services (ISS), by 2019, women held more than one-fourth of board seats in S&P 500 firms and about one-fifth of seats among the Russell 3000.[1] This represents a substantial increase compared to the preceding decade. ISS data also portend even more growth, with women composing almost half of new directors appointed in 2019 in the S&P 500 and the Russell 3000, a more than threefold increase since 2008.[2] In this same period, there was also growth in the inclusion on boards of individuals self-identifying as ethnic minorities.[3]

Despite this organic growth and signs of continued gains in the future, entities such as California[4] and the Nasdaq stock exchange[5] have passed or proposed regulations mandating that firms add women and minority group members to their boards or, in the case of the Nasdaq proposal, provide an explanation for not meeting the requirement.

The California regulation and Nasdaq rule proposal are premised on findings that female board members improve firm performance. For example, California S.B. 826 indicates, "Numerous independent studies have concluded that publicly held companies perform better when women serve on their boards of directors," before summarizing numerous studies from consulting firms such as McKinsey & Company and a few academic studies.[6] Likewise, citing many of the same studies, the Nasdaq proposal asserts, "There is a significant body of research suggesting a positive association between diversity and shareholder value."[7]

As firms are pushed to change their practices to accelerate the already swift trend toward more diversity on boards, it is useful to review the findings of the literature, both those studies cited and more broadly. One concern with the cited literature is its reliance on nonacademic reports from consulting firms that may be influenced by branding considerations and, at minimum, have never been subjected to peer review. With the handful of peer-reviewed studies California and the Nasdaq proposal relied on, it is important to examine whether those studies are representative of the academic literature or cherry-picked.

In this report, I start with a brief, relatively nontechnical primer on empirical work in general, with a focus on causality. As many of the consulting reports admit, their findings cannot answer whether any claimed relationship between firm performance and board makeup represents a causal relationship. While firms with more-diverse boards might perform better than they would with less-diverse boards, the findings could also reflect that more-successful firms might choose diverse board members without the diversity actually affecting performance. Diverse boards might also be concentrated in industries that have happened to do well over the past decade, independently of any contribution by the board. Similarly, almost none of the studies cited explores whether it may be more costly or difficult for some firms to comply with the diversity mandates. A one-size-fits-all approach, as opposed to allowing organic diversity gains, could harm many firms even if the effect on average is positive.

To sort this out, it is necessary to focus on studies that credibly identify the causal impact of board diversity on firm performance. The vast majority of

the studies used to support the diversity regulations do not identify causal effects and, therefore, do not constitute reliable evidence. Among the few studies that provide valid insights into the causal effects of mandating diversity, the evidence is mixed at best. Overall, the literature suggests that such mandates will do little to improve firm performance and may generate losses for shareholders.

Correlation Is Not Necessarily Causation

The evidence (discussed below) regarding how increasing diversity affects corporate boards either compares an average outcome (e.g., market return) across two or more groups of firms broken down according to the degree of diversity of the firms' boards or uses more-sophisticated techniques (e.g., regression analysis) to compare the relationship between board diversity and outcomes, adjusting for other firm characteristics.

The FCLTGlobal report Nasdaq cited used the general comparison approach.[8] It indicated,

> Looking at MSCI ACWI firms between 2010 and 2017 and using a diversity metric that compasses [*sic*] both age and gender, we found that the most diverse boards (top 20 percent) added 3.3 percentage points to ROIC [return on invested capital], as compared to their least diverse peers (bottom 20 percent).[9]

There are many problems with relying on this approach to support the claim that the Nasdaq proposal will generate firm value. First, there is a relevance problem with taking a claim about a composite diversity index that confounds age and sex and using it as a basis for a regulation focused on sex and minority status. While the FCLTGlobal analysis says gender diversity drives much of the effect (2.6 percent[10]), there is no analysis of minority-status diversity.

Perhaps more importantly, the FCLTGlobal comparison does not account for other potential differences across the companies with the most- and least-diverse boards. For example, during the past decade, the auto industry suffered a slight loss in market return, whereas internet and direct-marketing retail saw growth exceeding 1,000 percent.[11] The primary underlying causes of these diverging prospects obviously have nothing to do with who makes up the company boards in those industries. Car sales are suffering from shifting generational preferences[12] and changing environmental concerns, whereas internet-based retail is a relatively young industry that has benefited from changing technology and other exogenous factors. If car companies have mostly men on their boards and internet-based retail firms have more women on theirs, then a comparison will mechanically generate something like the FCLTGlobal result. At minimum, any such comparison would need to be made on a within-industry basis, to say nothing of needing to adjust for other differences across the firms. Without such adjustments, it is impossible to say anything meaningful about how increasing female participation affects corporate boards.

To isolate the causal effect of board diversity on outcomes, one needs to compare apples to apples.

Unfortunately, making the required adjustments is easier said than done. To isolate the causal effect of board diversity on outcomes, one needs to compare apples to apples. Conceptually, the purest test would involve two otherwise identical companies in which one had an all-white, all-male board and the other had a more diverse board. If one were certain the two companies were truly identical, except for their board composition, any differences in outcomes would be either due to random chance or caused by the board differences. Statistically, if the sample size were large enough (many identical firms, some with nondiverse and some with diverse boards), the random component becomes

relatively small on average (and can be bounded), leaving just the board-induced differences.

Of course, it is not possible to examine identical companies since real-life firms differ. If those differences happen to be correlated with board composition (such as the example above positing that boards may differ across industries), determining whether observed outcome differences are due to board composition or these other distinctions will not generally be possible. In statistics, this is called an omitted variable bias. In such a situation, the other differences will confound any estimate of board effects.

To guard against this omitted variable bias, researchers attempt to account for differences across firms. In group-based comparisons, such as the FCLTGlobal example, instead of comparing companies with the most-diverse boards to companies with the least-diverse boards, as suggested, one might make the comparisons in a particular industry. Beyond the industry comparison, one might also try comparing firms with similar corporate governance mechanisms (e.g., comparing firms with staggered boards to other such firms or firms operating under Delaware law with other firms operating this way). This matching or grouping process gets complicated quickly. First, the more attributes an analyst matches on, the smaller the sample gets on which the comparison is performed. Smaller sample sizes increase the influence of random variation in the comparison. In the extreme, it might not be possible to distinguish even large outcome differences among the groups from random noise.

Second, the intuition above is conceptually clear for discrete categories (e.g., firm industry or a particular corporate governance attribute), but grouping by continuous variables is necessary too. If a firm's vintage relates to the outcome metric and the board's diversity, an adjustment is needed. Should the analyst compare only firms that started in the same year? If market capitalization relates to board composition and performance, how close is close enough for grouping purposes? Is the arbitrary distinction between mid- and large-cap firms enough for matching purposes, or should more fine-grained distinctions be made?

These complications must be addressed for FCLTGlobal-type analyses to be taken seriously. Unfortunately, the bulk of these studies, which the Nasdaq proposal relied on, ignore this issue altogether, making their conclusions scientifically unreliable. This leaves the possibility that the studies are vastly overestimating (or underestimating) the causal effect of board diversity on firm outcomes.

Some of the more sophisticated studies use regression techniques to adjust for differences across firms when attempting to isolate how diversity affects corporate outcomes. Generally understood, regression methods "fit" a linear function, relating the control variables (in the current case, the chosen board diversity metric and whatever firm attributes that are to be accounted for) to the outcome variable in an optimal way.[13] For example, if a firm's age is found to have a certain relationship, on average, with the outcome variable and a firm's market capitalization has an estimated relationship with the outcome, then two firms of different ages and market caps can be adjusted to yield an after-adjustment comparison wherein the firms are now conditionally similar, except for their board compositions. After these effects have been accounted for and there are no other differences among the firms, any leftover difference in the firms' outcomes must be due to either random variation or the differing levels of diversity on their boards. Again, if this regression is estimated over many firms, the random component will become relatively less important,[14] and it may be possible to make probabilistic statements about the causal effect of board diversity on the outcome examined.

Although regression techniques are widely used, there is a well-known problem: Regression estimates can be interpreted only as causal effects if the model does not suffer from omitted variable bias. That is, if the model fails to include a control variable (or numerous control variables) that affects the outcome and is correlated with the control variables included in the model, the estimates will not represent the causal effect of a variable on the outcome. For example, even in a regression framework, if one did not account for the industry effects noted above and board diversity differed systematically by industry, the estimated

coefficient on the board diversity variable will include both the true causal effect of board diversity on the outcome and some portion of the industry effects on the outcome. If the regression happens to estimate the true causal effect, it will be entirely accidental, and it is impossible for the researcher to know whether the actual causal effect is bigger, smaller, or the same as the estimated effect is. The researcher cannot even reliably know the sign (i.e., the direction) of the true causal effect.

Although regression techniques are widely used, there is a well-known problem: Regression estimates can be interpreted only as causal effects if the model does not suffer from omitted variable bias.

In the example of omitting the industry effects, a simple solution is to adjust by industry. How specifically to define the industry is problematic, as the bias problem could arise if board diversity and outcomes vary at the subindustry—say, four-digit North American Industry Classification System (NAICS)—level, while the researcher adjusts for industry only at the two-digit NAICS level. But conceptually, this is manageable.

The bigger problem is that board diversity and outcomes may be associated with factors the researcher is entirely unaware of, or, sometimes, he or she might be aware of the factor but has no data to make the adjustment. Unobserved heterogeneity is a ubiquitous problem in empirical work, but solving it is crucial to reliably estimating effects.

When Is Correlation Causation?

Although almost everyone nods in the direction of the causality concerns noted above, many researchers mention it but then progress without taking the implications seriously. For example, the McKinsey report cited in the Nasdaq proposal[15] touts,

> The analysis found a statistically significant relationship between a more diverse leadership team and better financial performance. The companies in the top quartile of gender diversity were 15 percent more likely to have financial returns that were above their national industry median. Companies in the top quartile of racial/ethnic diversity were 35 percent more likely to have financial returns above their national industry median. Companies in the bottom quartile for both gender and ethnicity/race were statistically less likely to achieve above-average financial returns than the average companies in the dataset (that is, they were not just not leading, they were lagging). The results varied by country and industry. Companies with 10 percent higher gender and ethnic/racial diversity on management teams and boards in the US, for instance, had EBIT [earnings before interest and taxes] that was 1.1 percent higher; in the UK, companies with the same diversity level had EBIT that was 5.8 percent higher. Moreover, the unequal performance across companies in the same industry and same country implies that diversity is a competitive differentiator that shifts market share towards more diverse companies.[16]

The report notes, "The relationship between diversity and performance highlighted in the research is a correlation, not a causal link." Almost immediately, the study drops the caution and declares, "More diverse companies are better able to win top talent, and improve their customer orientation, employee satisfaction, and decision making, leading to a virtuous cycle of increasing returns."[17] It could just as

likely be that high-performing firms are better able or more willing to seek out and attract more diverse board members, or there could be some other mediating factor unaccounted for in the analysis that leads to better performance and more diverse boards. Noting that correlation is not causation does not then free one to make such causal claims.

Noting that correlation is not causation does not then free one to make such causal claims.

How, then, are causal claims ever possible? Modern statistical and econometric techniques provide some insight.[18] Most modern methods of causal inference take their cue from randomized controlled trials or experiments. If omitted variable bias arises when variables are omitted that influence the outcome (e.g., firm performance) being studied and that are correlated with the "treatment" of interest (e.g., board diversity), one can try to include all the relevant variables. However, failure is guaranteed for the reasons described above. Instead, it makes more sense to ensure somehow that the omitted variables are not correlated with the treatment of interest.

Random assignment of the treatment in an experiment achieves this. If, metaphorically, a coin flip determines whether a firm receives a diverse board, then the existence of a diverse board cannot be associated with firm characteristics such as industry, age, and market cap. Maybe even more importantly, the board assignment will not be correlated with the unquantifiable (but still potentially important) variables such as how forward-looking or progressive a firm is, a firm's risk-taking propensity, and countless other unobservable firm characteristics. If, in this experiment, a firm's board diversity is unrelated to any of the firm's attributes and if one observes firms with more-diverse boards performing better than firms with nondiverse boards are, then the performance differential is either due to random variation (which, as noted earlier, becomes less important as the experiment's sample size grows) or is driven by the presence of the diverse board itself.

This experimental approach is used regularly to test the safety and efficacy of pharmaceuticals and vaccines and in developing other products. In these settings, there are few concerns about whether an observed effect is causal. Unfortunately, it is often impractical to implement this approach for economic policies and regulations. Equal protection constraints and practical considerations limit the extent to which governments can engage in this kind of experimentation in the real world. Lab experiments are sometimes used to examine how mixed-sex groups affect business decision-making,[19] but their artificial settings limit their external validity in extrapolating the results to infer how gender diversity might affect board decision-making in real-world settings with real-world stakes. For example, the stakes involved in the lab experiments are small, and the short duration of the team decision periods may obscure what would happen over longer periods as the decision makers grow more comfortable with each other.

Instead, modern empirical work focuses on quasi-experimental approaches, which mimic the randomization of the lab but in naturalistic settings. Since these are real decision-making settings with real-life stakes, the external validity concerns diminish. In the board diversity literature, there are two main quasi-experimental approaches that have been used to varying degrees of success. For reference when I later describe the studies, I briefly explain their intuition.

The first approach in some of the papers the Nasdaq proposal relied on is a so-called instrumental variables technique.[20] The idea behind instrumental variables is that one finds an instrument (or multiple instruments) that is correlated with the policy variable of interest (in the current case, board diversity) but is otherwise uncorrelated with anything else related to the outcome variable. The first of these conditions allows one to model the policy variable with regression techniques, exploiting that the

instrument is highly related to the policy variable. Because, by assumption, this instrument is otherwise unrelated to the outcome variable, it (as distinct from the policy variable) will not be correlated with any of the unobservable characteristics we worried about above. In practice, the researcher first regresses the policy variable on the instrument (and any other control variables), yielding a model that can be used to predict the policy variable. This prediction of the policy variable is then used in the regression to model the outcome variable (e.g., firm performance). Since the instrument is uncorrelated with the firm's unobservable characteristics, the predicted policy variable (as distinct from the actual policy variable) will likewise be uncorrelated with the unobservable characteristics. Thus, the estimated relationship between the predicted policy variable and the outcome variable will not suffer from omitted variable bias and, therefore, can be interpreted causally.

Although the instrumental variables approach works in theory, practice is a different matter. For starters, the researcher must find a suitable instrument. This instrument needs to strongly correlate with the policy variable being studied, and it must otherwise be unrelated to the outcome variable being examined. The first requirement is testable. Unfortunately, the second criterion is not.[21] At best, the researcher provides an intuitive argument for why he or she believes the instrument is not otherwise related to the outcome variable (except through its effect on the policy variable). If someone can intuit why the instrument is not unrelated to the outcome (or even if he or she cannot, but a reason nonetheless exists), then the instrumental variables analysis should be viewed skeptically. For it to be credible, there should be strong intuitions for both why the instrument is strongly correlated with the policy variable of interest and why the instrument is not otherwise related to the outcome variable being studied. In practice, these intuitions are rarely strong enough to be compelling.

The second approach, not often used in the Nasdaq-cited studies but regularly used in other relevant papers, is more promising. This approach exploits natural experiments. That is, the researcher leverages some outside change in the world that is not initiated (or maybe not even expected) by those affected by it that imposes a change in the policy variable on some firms but not others, as if by random chance. In the current context, the most commonly used natural experiment is the passage of legislation affecting firms in a given jurisdiction as the treatment group, using firms outside the jurisdiction as the control or counterfactual comparison group. Sometimes, these natural experiments might even create within-jurisdiction treatment and control groups through policy exemptions (e.g., a size threshold) or because some firms already inadvertently complied with the rule (e.g., a policy requiring a certain number of women on a board will not affect companies that already have that many women on their boards).

When evaluating these natural experiments, it is important to focus on whether the imposition of the policy shock was random and whether the control group is a suitable counterfactual comparison. Unfortunately, here, too, no diagnostic tests are available to ensure these requirements are satisfied. Intuitively, the more unexpected and less targeted the policy shock is, the more credible the research design and the estimates arising from it are. Likewise, the more comparable the treatment and control groups are, the more confidence one has in the study's findings.

In the finance context, event studies are a common form of a natural experiment.[22] In the standard event study, the event is the policy shock, and the analyst compares how the stock return of a firm (or portfolio of firms) differs relative to what would be expected had the event not occurred. The expectation is estimated using a regression of the firm's returns on various variables (usually including a measure of the overall market return) in the period before the event. This predicted event day (or period) return is netted out of the actual return on the event day, generating the estimate of the event's effect (often called an abnormal or excess return). A similar procedure is used on comparison firms (that are not affected by the event) to rule out the possibility that something other than the event being studied generated the event day effect. In the current context, these event studies could be used to examine the market's reaction to proposed diversity mandates, providing a

"wisdom of crowds"–type estimate of the likely effect of increased diversity on corporate boards.

Event studies could be used to examine the market's reaction to proposed diversity mandates, providing a "wisdom of crowds"–type estimate of the likely effect of increased diversity on corporate boards.

While I have simplified this primer for a nontechnical audience, it conveys the main intuitions that can be used to assess empirical analyses of how diverse boards affect firm performance. Conceptually, the closer an analysis is to an apples-to-apples comparison, the more reliable it is. If a study finds that firms having more-diverse boards leads to improved outcomes, then the relevant question is whether diversity actually drives the outcomes in a but-for sense. That is, in the counterfactual world in which the firms did not have diverse boards, would their outcomes be different? Because it is not possible to observe the counterfactual world, it is necessary to rely on comparisons with firms that do not have diverse boards. However, if those nondiverse firms differ along other dimensions, the comparison will not be informative. Omitted variable bias could lead the observed difference to over- or understate the true effect of board diversity on performance. Worse, it is impossible to know even the direction of the true relationship between board diversity and the outcomes being studied, much less the magnitude of the relationship.

To combat this bias, it is tempting to believe that one can adjust for the other differences across firms by either matching firms with diverse boards with similar counterparts whose boards are less diverse or using more-sophisticated regression techniques. However, it is not generally possible to know all the relevant differences. Beyond that, many of the relevant dimensions will not be quantifiable.

In what follows, I examine the studies the Nasdaq proposal relied on and other informative studies ignored in the proposal, categorizing them by how they attempt to address these issues of causal inference. In the first grouping, I look at the studies that make no attempt to address these problems. I do not spend much time on this set since it is wholly unreliable and provides no guidance on how board diversity affects firm outcomes. Next, I cover the studies that attempt to control or adjust for differences across firms. Given the discussion above, these studies are just as unreliable as are those that do nothing to ensure comparability between firms with and without diverse boards. Lastly, I examine the studies that attempt to use some quasi-experimental approach. Because these studies offer the most-credible approaches and, potentially, the most-reliable estimates of the causal effect of board diversity on firm performance, I examine them in detail. With the benefit of this literature review, I then offer general conclusions about the likely effects of the proposed Nasdaq board diversity mandate.

Studies with Merely Descriptive Comparisons

As discussed above, comparisons of firm outcomes based only on differences in board diversity metrics without adjustments for other differences across firms are not informative. Board diversity might differ coincidentally with many firm attributes that also affect firm outcomes. It is reasonable to suspect that diversity differs by industry, firm age, state of incorporation, and other firm characteristics that also affect

market returns, accounting profits, sales, research and development, and almost everything else one might care to examine as a company outcome. In such a situation, while it may appear that outcomes vary systematically with board diversity, it is just as likely that the relationship is driven by these other variables that are unaccounted for. Any estimated difference will be subject to statistical bias.

As discussed above, the Nasdaq proposal relies on the FCLTGlobal report,[23] which accounts for no differences across firms beyond the diversity of their boards. If board diversity is not randomly distributed across industries (or any other firm characteristic), any difference related to diversity could be driven by these other characteristics. Further, the report provides no test of statistical significance of the reported board diversity effects. This omission is especially notable given that the report mentions a lack of statistical significance with its results regarding firm performance and board member tenure length.[24] It also mentions a lack of a statistically significant relationship between firm returns and whether the firm CEO was a board member.[25]

The MSCI study cited in the Nasdaq proposal[26] indicates that firms with at least three female board members experience gains in return on equity and earnings per share, while firms with no women on their boards saw losses in both metrics.[27] It does not attempt to adjust for any firm characteristics and admits that its small sample size should lead a reader to treat the results with caution.[28] These issues render the study's results wholly unreliable.

The Catalyst report that the Nasdaq proposal relied on proposes that having a sustained large female contingent (three or more board members for at least four of five years) is related to large increases in return on sales, invested capital, and equity.[29] This analysis makes no adjustments across firms, and, rather than examine the overall effect of female board participation, it compares firms with zero women on their boards to firms with three or more women on their boards. As stated earlier, throwing out such variation has little justification and indicates either a lack of statistical sophistication or potentially purposeful data mining.

Studies with Basic Controls

The Nasdaq proposal cites a 2020 report from the Carlyle Group[30] that indicates that companies in its portfolios with two or more female or minority group directors outperform companies with only one such director, which, in turn, outperform companies with no female or minority directors, controlling for "industry, fund, and vintage year."[31] Unfortunately, the report provides no details on these estimates, nor does it indicate whether these performance differentials are statistically significant. There is no basis to judge these estimates' reliability, even if one were willing to believe that the only variables important to adjust for are industry, fund, and firm age, which would be a largely unjustified assumption.

The McKinsey authors admit that the relationships observed are correlational, not causal, but they then discuss their results as if the performance metrics they examine can be tied to their board diversity indicators.

The McKinsey report likewise attempts to use a handful of controls such as firm nationality and a broad-based industry grouping. As noted above, the McKinsey authors admit that the relationships observed are correlational, not causal, but they then

discuss their results as if the performance metrics they examine can be tied to their board diversity indicators. Their analysis has numerous oddities. First, rather than looking at the whole continuous relationship between their diversity indicator and firm performance, they repeatedly simply compare firms in the lowest quartile of diversity with firms in the highest quartile, as if intermediate levels of diversity provide no relevant information. Perhaps intermediate levels of diversity are much more beneficial (or maybe harmful), but it is not possible to know based on the McKinsey analysis.

In an equally odd way, rather than looking at diversity's effect on performance in general, the outcome they study is the likelihood a firm's performance exceeds its nation's industry average. Throwing out variation could obscure important limitations in their findings. For example, if firms with low diversity are trivially below the average and firms with high diversity are trivially above the average, the proper conclusion would be that diversity does not appear to have an effect, even if there is a statistically significant effect on whether a firm is above or below the average. How this analysis is presented makes it is impossible to rule out such a case.[32]

When the McKinsey report does look at a continuous outcome in Exhibit 3, in which EBIT is related to board diversity for the US and Canada, there is no statistically significant relationship between either gender or ethnic diversity of the corporate board and firm performance. This is surprising since the US sample is the largest one examined, which makes it the most reliable of the regions studied. (For the US and Canada, 186 companies were examined, while just 107 UK and 73 Latin American companies were studied.) If there were a robust relationship between board diversity and outcomes, one would have expected to observe it in the US and Canada sample. At best, this suggests that the McKinsey evidence most relevant to US firms does not establish a basis for mandating diverse boards and, at worse, that the statistically significant correlations elsewhere are spurious.

Credit Suisse's gender report cited in the Nasdaq proposal[33] suggests a positive relationship between firm performance and the presence of a woman on a firm's board, adjusting for the firm's sector.[34] The differentials noted in the report (e.g., the 12.2 percent return on equity for firms with at least one female board member vs. the 10.1 percent return for firms with no female directors), however, do not indicate whether they are statistically significant.[35] As with other studies in this section, the Credit Suisse report makes no effort to isolate causality in these relationships.

Studies That Attempt to Isolate Causation

The Nasdaq proposal frequently cites David A. Carter, Betty J. Simkins, and W. Gary Simpson's study for the proposition that there is a positive relationship between firm value and the presence of women or minorities on a firm's board.[36] Superficially, this study attempts to control for many differences across firms, including differences in total firm size and board size. Of course, since it is never possible to be sure one has made all the necessary adjustments, the authors note that something more is necessary.

> While board diversity could affect firm value, firm value could also affect board diversity. If this is the case, estimation of Equation (1) using OLS [ordinary least squares] can produce biased coefficient estimates. To control for the possibility of endogeneity, we estimate the following system of equations using 2SLS.[37]

Endogeneity is a particular form of the omitted variable bias, and 2SLS is an implementation of the instrumental variables analysis discussed above. However, in implementing 2SLS, the authors do not even attempt to include the necessary instrument. Their Table 4 results illustrate this, as the only variables included in their diversity prediction that are not also included in their firm value equation are the log of the average age of the board (which, by the argument presented in the FCLTGlobal report, directly affects firm value and so is not unrelated to the outcome variable here), an indicator for whether there is a minority board member (in the female

diversity model), and an indicator for whether there is a female board member (in the minority diversity model). Without getting into intuitive arguments about whether an instrument is good, if female board members affect firm value, then a variable capturing that cannot serve as a good instrument for the presence of minority board members and vice versa. That is, even by the logic of the authors' own estimation strategies, their instruments are bad, and therefore their results are not credible.

The Gennaro Bernile, Vineet Bhagwat, and Scott Yonker paper[38] cited in the Nasdaq proposal[39] that indicates board diversity improves many firm outcomes is potentially more credible. It also uses an instrumental variables strategy to account for omitted variable bias. Specifically, the authors use a metric of the diversity of potential directors (defined as people who are serving or have served as directors) who live more than 150 miles from their firms' headquarters but who live near an airport with a nonstop flight to an airport near their headquarters. The intuition is that people agree to be on boards only if it is convenient to participate, which will be a function of transportation ease. If the relevant pool of director candidates who can easily travel to the firm is more diverse, the firm will more successfully attract diverse board members. The data bear this out. The authors find a strong relationship between this pool variable and the diversity of the firms' boards. Through the instrumental variables technique, they show that diversity is associated with many positive firm outcomes.

While this instrument is clever, it does raise concerns. First, even if one assumes arguendo that the empirical strategy is valid, it does not say diverse board members lead to improved outcomes in general. It indicates that diverse candidates who have already served on boards can improve firm outcomes. While this distinction might appear slight, it does make a difference in the context of policies that mandate many firms all chase the existing pool of female and minority board members simultaneously. This research says nothing about how adding female and minority individuals affects a board when such individuals have no previous experience. Second, and more importantly, if firms' outcomes are influenced by factors in their local communities (e.g., agglomeration effects or shared labor markets) and if, all other things being equal, more dynamic and vibrant places attract more transportation linkages because more people want to be there, then the authors' instrument is necessarily capturing effects related to firm outcomes independent of the board member accessibility issue they focus on. If this or anything similar is occurring, then the authors' instrument is no good, and the estimates are not reliable.

In an alternative instrumental variables specification provided in an online appendix,[40] the authors use an instrument that captures average board diversity of a firm's competitors (defined as being a similar size and in the same industry) on the assumption that firms may learn from each other about the benefits of diversity. A first problem with this strategy is that, if a firm's performance is affected by competitors' performance and the existence of a more-diverse board (as is the conclusion of the paper), then, by definition, this instrument is no good. That is, more-diverse boards among competitors both change outcomes in the industry (affecting the firm in that industry) and the firm's likelihood of having a diverse board. Again, the results would be unreliable in this case. A second problem, as discussed above, is that if multiple instruments are available, they could be used simultaneously to allow for calculating the test of overidentifying restrictions, which would provide at least a weak diagnostic of whether the instruments were good. The authors not providing this diagnostic test is a red flag.

If one is skeptical of the authors' instrumental variables strategy but does not wish to throw out the research entirely on this basis, it would be more conservative to examine the authors' regular OLS regression results, which are uniformly much smaller in magnitude, often by a factor of 20 or 30. This suggests a questionable estimation strategy primarily drives the authors' results.

Carter et al.[41] use a fixed effects model to attempt to estimate a causal effect of board diversity on firm performance. A fixed effects model attempts to absorb all fixed unobservable aspects of a firm by including separate baselines for each firm (the so-called fixed effects). This approach works if all relevant

unobservable characteristics are fixed or constant at the firm level. If the unobservable characteristics are changing in a way that is constant across firms in a given period, separate period effects will account for these changes. However, if the unobservable characteristics are changing differentially across firms, the omitted variable bias problem is still present.

The assumption that current performance is unrelated to previous performance defies belief.

The authors also attempt a simultaneous equations model (a variant of the instrumental variables technique) to further guard against omitted variable problems. However, as in the earlier Carter, Simkins, and Simpson paper, this approach has problems. Specifically, the authors use lagged outcome variables as their instruments. As with any instrument, if the lagged outcome is related to the current outcome, these instruments will be no good. The assumption that current performance is unrelated to previous performance defies belief. Given the implausibility of the assumptions of Carter et al., their finding that board diversity does not have a statistically significant effect on firm outcomes is not credible.

For similar reasons, Kevin Campbell and Antonio Mínguez-Vera's use of fixed effects models to examine how board diversity affects firm value in a Spanish sample is not credible.[42] As stated before, for the fixed effects model to avoid omitted variable bias, one must assume that either the unobservable heterogeneity across firms is constant or, to the extent it changes, it changes for all firms similarly over time. The authors also attempt an instrumental variables technique, but their instruments are not plausible. For example, one of their instruments is the size of the board of directors. If board size has any effect on firm performance, then their instrumental variables approach does not work. Thus, their mixed conclusions[43] about how women affect boards and other metrics of board diversity are not credible.

One of the better papers cited by the Nasdaq proposal, by Renée B. Adams and Daniel Ferreira, uses both fixed effects and a potentially more plausible instrument in the instrumental variables analysis.[44] The authors instrument the fraction of the firm's board composed of women with a measure of how many female connections male board members have for other boards they sit on. The idea is that knowing more female board members allows women to engage in more networking, leading to an increased likelihood of being on a firm's board. This instrument could be subjected to the concern raised with Bernile, Bhagwat, and Yonker's secondary instrument. Namely, if a competitor's performance affects the firm's performance and if more women on a board affect the competitor's performance, then the instrument would not be unrelated to the outcome being studied. However, Adams and Ferreira do not restrict attention to connections to women made through competitors' boards, so any concern of this type might be mitigated. This represents a reasonable strategy. While Adams and Ferreira show that increasing female board membership improves board attendance by all board members and improves other monitoring metrics, the ultimate effect on firm value appears detrimental, sometimes to a statistically significant degree.

Bin Srinidhi, Ferdinand A. Gul, and Judy Tsui use an instrumental variables technique (specifically a Heckman selection model) to examine how female directors affect the transparency or quality of a firm's earnings data, focusing on accruals estimation errors by the firm and indicators of manipulation or excessive management of earnings announcements.[45] As cited in the Nasdaq proposal, they find that female participation on a firm's board improves the indicators of earnings data quality.[46] As with much of this literature, the authors do little to discuss or justify why their identification strategy supposedly works. Most of the variables in the first stage of the analysis are explicitly related to firm performance and

attributes.[47] Clearly, these variables can directly affect the outcome variable and therefore cannot serve as good instruments for identification purposes. The only plausible candidate is the inclusion of the percentage of women employed in the firm's industry. However, since women are not randomly distributed across industries and since firms in an industry likely mimic each other in many things related to earnings, earnings management, and earnings reporting (e.g., using the same outside auditor[48]), this candidate instrument also is likely related to the outcome variables examined in the paper. As I have repeatedly noted, this concern undercuts the reliability of the paper's empirical conclusions.

Of necessity, matching can be carried out using only observable characteristics, since it is impossible to know whether the firms are similar on unobserved dimensions.

María Consuelo Pucheta-Martínez, Immaculada Bel-Oms, and Gustau Olcina-Sempere's paper also looks at transparency metrics (specifically, measures of audit report quality).[49] Although the authors find that their measures of female board participation are associated with better audit quality metrics in Spanish data, they make no attempt to account for unobservable characteristics, merely controlling for observable firm characteristics. This leaves no confidence that their results represent causal effects.

Similarly, the Nasdaq proposal cites[50] Francisco Bravo and Maria Dolores Alcaide-Ruiz's finding that, although female participation on a firm's audit committee does not affect a firm's propensity to disclose forward-looking financial information, having women with financial expertise on the committee improves this propensity.[51] Once again, however, this analysis does nothing to account for omitted variable bias and lacks credibility.

Lawrence J. Abbott, Susan Parker, and Theresa J. Presley find that firms with at least one female director are less likely to issue financial restatements than firms with no women on their board are.[52] Their attempt to isolate causality involves matching each firm with a female board member with a comparable firm from the same industry (similar size, type of audit firm used, etc.) with no women on the board. Matching approaches such as this are similar to regression techniques but allow for a type of nonlinear modeling of the effect of the match or control variables. However, of necessity, matching can be carried out using only observable characteristics, since it is impossible to know whether the firms are similar on unobserved dimensions. Thus, generally, matching does not address omitted variable bias.

Aida Sijamic Wahid's article[53] also attempts to examine the transparency of firms with female representation on their boards by examining financial reporting mistakes and fraud indicators. The article uses instrumental variables techniques to isolate causality and finds that firms with women on their boards engage in less fraud and make fewer reporting mistakes. In addition to the instrumental variables approach, the article uses fixed effects models, though it never combines the fixed effects and instrumental variables approach, which would be the most rigorous approach. Wahid's instruments for female participation are the female population around the firm's headquarters and the longitude measurement at the firm's headquarters. While the first instrument has an intuitive explanation—namely, firms located where there are more women may find it easier to solicit female board members—the longitude instrument is not intuitive and smacks of data mining (i.e., opportunistically searching for an instrument that provides particular results). Because neither instrument is likely to vary much

(or at all for longitude) at the firm level from year to year, it becomes obvious why Wahid does not estimate the instrumental variables regressions with fixed effects. That is, with no variation, estimation becomes impossible. Because of this, however, any firm characteristics related to a firm's location (e.g., more-talented CEOs may prefer to live in certain locations) will cause the instruments to fail, leaving the estimates without credibility.

Using Chinese firms, Douglas Cumming, T. Y. Leung, and Oliver Rui examine how gender diversity affects the likelihood that a firm engages in fraud.[54] They find that firms with a higher fraction of women on the board engage in less fraud, although the effects are smaller (and sometimes not statistically significant) in female-dominated industries. In an attempt to determine causality, their paper uses an instrumental variables technique but proceeds to use firm characteristics, including characteristics of the firm's chairperson and general manager, board, and ownership structure. Obviously, all these characteristics can directly affect the likelihood of fraud (e.g., one of the characteristics used is frequency of board meetings, which should help monitor fraud) and so provide no confidence in a causal interpretation. The paper also discusses that one would find similar results with other forms of diversity,[55] but since the authors do not study this, it is pure speculation.

Gul, Srinidhi, and Anthony C. Ng's 2011 paper also examines the informativeness of firms with greater female representation on boards.[56] It concludes that firms with more female representation on their boards have more informative stock prices, as measured by idiosyncratic volatility and "future earnings incremental explanatory power."[57] While this paper uses longitudinal data, it does not estimate fixed effects models for its regressions even though that would account for more unobservable characteristics of the firms studied. In addition to this bias point, because fixed effects absorb much of the variation in the data, many of the paper's borderline statistically significant effects (if not the others) would likely no longer be statistically significant (e.g., regressions 9, 10, and 12 in Table 4). It is puzzling why the authors did not examine the more standard (and credible) fixed effects regression specification given there appear to be no data limitations in doing so.

The paper does exploit a potentially interesting natural experiment involving Norwegian legislation that required firms to have more female directors. After examining how many additional female directors 75 Norwegian firms added between 2005 and 2009, the authors report that idiosyncratic volatility increased as more female directors were added and the effect was statistically significant. Once again, the authors choose not to examine the fixed effects model, which would be more credible. Further, they artificially focus only on Norwegian firms, when they could have easily used non-Norwegian firms in a more standard natural experiment framework wherein non-Norwegian firms serve as the comparison or control group. Such an analysis would be more informative and reliable.

Although ignored in the Nasdaq proposal, a 2019 paper by Philip Yang et al. offers a more thorough examination of the Norwegian experience.[58] It uses the natural experiment in Norway to compare the performance of Norwegian firms with a control group of firms in other Scandinavian countries. Paying close attention to whether the conditions for a natural experiment are met, the authors find that the regulation requiring more women on Norwegian boards led to worse firm performance and greater firm risk. These results are consistent with the findings of Kenneth R. Ahern and Amy K. Dittmar, who found that firms that were more affected by the Norwegian regulation (i.e., had to appoint more women) suffered statistically significant declines in stock price, firm value, and other measures of operating performance and exhibited greater risk after the adoption of the mandate.[59]

David A. Matsa and Amalia R. Miller provide additional support,[60] comparing Norwegian firms to firms in other Scandinavian countries and private Norwegian companies that were not subject to the rule. This variation allows the authors to rule out any possibility that a nonregulation-related event in Norway may have been affecting firms subjected to the regulation. Across many specifications, Matsa and Miller find robust evidence that the regulation led to declining profits and the effect was statistically significant. This

decline was not observed among the unaffected Norwegian private firms nor among the unaffected firms from other countries.

Given this evidence of the bad effects of the Norwegian mandate, it is not surprising that Øyvind Bøhren and Siv Staubo found that about half of Norwegian firms that were going to be affected by the mandate changed their status (i.e., went private) to avoid the regulation.[61] In a more recent working paper, B. Espen Eckbo, Knut Nygaard, and Karin S. Thorburn make different modeling choices (e.g., looking at different time windows and examining the effect of heterogeneity) and find results that are more aligned with the conclusion that the Norwegian mandate did not affect stock returns or other measures of firm value in a statistically significant way.[62]

Taking these findings on transparency and informativeness, David Abad et al. examine information asymmetries via bid-ask spreads, the idea being that, if firms are more transparent, there is less concern of trading by relatively better-informed insiders.[63] When outsiders worry about information deficits, markets become less liquid, leading to larger bid-ask spreads. Analyzing Spanish data, the authors find that firms with better female representation on boards exhibit smaller bid-ask spreads, again suggesting that such firms are more transparent. The authors use a generalized method of moments (GMM) estimation technique to account for omitted variable bias. GMM is a variant of instrumental variables and requires good instruments. As is common in GMM approaches, the authors use lagged or differenced versions of their model's variables as instruments and (distinct from the other papers reviewed here) appropriately report the diagnostic test of overidentifying restrictions, which indicates the instruments are good.

However, as discussed in the empirical primer, this diagnostic test "works" only if one believes the various instruments are not subject to similar omitted variable effects. For example, if one believes the model's variables lags (i.e., the observation from the prior period) are subject to similar random shocks (or something related), the instruments will pass the diagnostic test but still not work as instruments that surmount the omitted variable bias. If there is unexplained persistence in the instruments that could be related to unobservable characteristics that also affect the outcome variable, the GMM approach does not solve the bias concern.

The Nasdaq proposal clearly cherry-picks studies based on whether they claim to find positive outcomes associated with an increase in female representation on boards and a smattering of articles looking at other kinds of diversity.

The same concern undercuts the conclusions of Maria Encarnación Lucas-Pérez et al., who relate female participation on boards with better controls on executive pay using a similar GMM approach with lagged variables as the instruments.[64] Unless one is willing to assume a firm's past characteristics are unrelated to the outcome variables, GMM's use of lagged variables as instruments does not overcome the omitted variable bias problem.

Meta-Analyses

The studies cited in the Nasdaq proposal are clearly not an exhaustive review of the literature, nor are they a random sampling. The Nasdaq proposal clearly

cherry-picks studies based on whether they claim to find positive outcomes associated with an increase in female representation on boards and a smattering of articles looking at other kinds of diversity. As discussed above, the proposal also cannot claim to focus on methodologically sound studies, given the generally poor quality of the studies invoked.

Many other studies in the literature find no effect, or even a negative effect, from increased board diversity. For example, Kathleen A. Farrell and Philip L. Hersch find a negative, though statistically insignificant, effect of appointing a new female board member on firms' stock returns.[65] Interestingly, this paper also clearly demonstrates that adding a female board member is well predicted by firm outcomes. That is, better-performing firms are more likely to add a woman when a new board seat becomes available. This highlights the omitted variable concern raised above, suggesting that any study failing to account for the endogeneity of female board representation is destined to yield noncredible results.

In another example, Caspar Rose finds a negative (though statistically insignificant) relationship between female board representation and firm value in Danish data.[66] However, this is not done well because it, too, does not account for omitted variable bias. The methods are not substantially different from those used in many of the Nasdaq-cited studies described above. Even using Danish data cannot be cited as the reason for exclusion, given Nasdaq's repeated use of studies with international data (e.g., multiple studies cited use Spanish data).

One is left with the distinct impression that the proposal's statement "**Nasdaq reviewed dozens of empirical studies and found that an extensive body of academic research demonstrates that diverse boards are positively associated with improved corporate governance and financial performance**"[67] (emphasis in original) is not altogether accurate, since clearly Nasdaq ignored evidence that did not support (or even contradicted) its proposal. The review of the evidence on how women affect corporate boards by noted feminist scholar Deborah Rhode and Amanda K. Packel provides an interesting contrast: "After exploring the strengths and limitations of various methodological approaches and survey findings, [we conclude] that the relationship between diversity and financial performance has not been convincingly established."[68]

For a more comprehensive, aggregate view of the literature, one can examine what meta-analyses of the articles find. Meta-analyses attempt to define the literature according to certain criteria and then use the empirical findings as a dataset, providing average results across papers and sometimes providing what are essentially regression analyses of the other papers' regression results to see what factors appear to influence the findings in general. Meta-analyses are not without flaws, and there are reasonable grounds for criticisms. Choosing what articles constitute a literature can be arbitrary, though the better meta-analyses lay out specific criteria and document how they searched for articles that fit. A more substantive concern involves treating studies of widely differing methodological quality comparably (with each study counting as an equal data point). However, meta-analyses can provide a useful and somewhat more objective summary of a literature. Meta-analyses can also sometimes be used to identify publication biases, such as the tendency of journals to accept only articles with statistically significant or ideologically attractive results.

The Nasdaq proposal cites a few meta-analyses but does not appear to internalize the message that many of them suggest a different story from its selective review of the literature. For example, an analysis by Jan Luca Pletzer et al. of 20 studies finds that the average effect estimated by the studies regarding female participation on boards and firm performance is small and statistically insignificant.[69] Corrine Post and Kris Byron's 2015 meta-analysis of 140 studies (45 using US data) found that, on average, there was a small, positive, and highly variable (perhaps providing evidence of model mis-specification concerns) relationship between female board participation and accounting measure-based returns. But there was no relationship, on average, between female board members and market returns.[70] The authors also present a meta-analysis of the relationship between women on boards and the likelihood a firm engages in stakeholder facing, or

so-called socially responsible business practices, finding a positive relationship on average.[71]

The mixed relationship, at best, between female board participation and firm outcomes that results from a less selective analysis of the literature contrasts with the overwhelmingly positive picture painted in the Nasdaq proposal. Alice H. Eagly chastises the ideologically motivated cherry-picking that seems to infect documents such as the Nasdaq proposal, writing, "Despite advocates' insistence that women on boards enhance corporate performance and that diversity of task groups enhances their performance, research findings are mixed, and repeated meta-analyses have yielded average correlational findings that are null or extremely small."[72]

Wishful Thinking

A more complete and nuanced view of the literature on female participation on corporate boards suggests that the literature provides no strong evidentiary basis for requiring firms to increase female participation. The papers purporting to find large gains to increasing gender diversity suffer from crippling methodological flaws. It is clear from the data that firms do not randomly decide to appoint women. Many performance-related characteristics predict whether a firm fills an open board seat with a woman. This requires an empirical researcher to take the omitted variable bias question seriously. Many of the attempts in the literature to use instrumental variables techniques to overcome selection and endogeneity problems are not well-thought-out. In some cases, the papers try to implement instrumental variables without using any instruments; in other cases, the papers use instruments that their own analyses suggest directly affect the outcome variable being studied. Therefore, they are invalid instruments.

Perhaps the better way forward is examining the handful of natural experiments that exist, such as the Norwegian experience. As discussed, the papers that do the most–methodologically sophisticated analyses of this experience, such as by Ahern and Dittmar and Matsa and Miller, demonstrate that the mandate worsened firm performance and value and that the effects are statistically significant and economically large. At best, Eckbo and Nygaard's results indicate the Norwegian experiment had no systematic effect on firm performance. Further, Bøhren and Staubo's analysis indicates firms are willing to make organizational changes rather than be forced to alter their boards. If this experience can be generalized to the United States, one might predict that mandates such as the Nasdaq proposal or California's board diversity regulations will lead firms to switch exchanges or the location of their headquarters or go private. Organic growth in the numbers of women and people from other underrepresented groups likely is the best approach to achieving more-diverse corporate boards.

About the Author

Jonathan Klick is a professor of law at the University of Pennsylvania and the Erasmus Chair of Empirical Legal Studies at the Erasmus University Rotterdam. He has held visiting positions at Yale Law School, Columbia Law School, Northwestern Pritzker School of Law, and the University of Southern California Gould School of Law. He was the Jeffrey A. Stoops Professor of Law and Economics at Florida State University.

Notes

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6. S.B. 826, 2017–18, Reg. Sess. (CA 2018), § 1.
7. See Nasdaq Stock Market LLC, "Proposed Rule Change to Adopt Listing Rules Related to Board Diversity," 16.
8. Nasdaq Stock Market LLC, "Proposed Rule Change to Adopt Listing Rules Related to Board Diversity," 17.
9. FCLTGlobal, *The Long-Term Habits of a Highly Effective Corporate Board*, March 29, 2019, 11, https://www.fcltglobal.org/resource/the-long-term-habits-of-a-highly-effective-corporate-board/.
10. FCLTGlobal, *The Long-Term Habits of a Highly Effective Corporate Board*, 12.
11. Fidelity Investments, "Sectors & Industries—Performance," https://eresearch.fidelity.com/eresearch/markets_sectors/sectors/si_performance.jhtml?tab=siperformance.
12. See, for example, Adrienne Roberts, "Driving? The Kids Are So Over It," *Wall Street Journal*, April 20, 2019, https://www.wsj.com/articles/driving-the-kids-are-so-over-it-11555732810.
13. In the standard case of ordinary least squares regression, the parameters or coefficients for the control variables are chosen to minimize the sum of the squared errors, in which the errors are calculated as the difference between the regression's prediction and the actual outcome for each observation. By squaring the errors, the regression treats positive and negative errors of the same magnitude equivalently.
14. Under reasonable assumptions, it will be possible to engage in hypothesis testing in which a researcher can ask what the likelihood is that he or she would observe the estimated relationship between board diversity and the studied outcome if, in reality, the relationship is zero. If this likelihood is low (conventionally, less than 5 percent), the researcher will conclude that the estimated difference is statistically significant; that is, the difference is too large to be explained by random variation alone. Alternatively, the researcher might provide an estimate of how unlikely it is that one would observe an estimated effect as large or larger in magnitude than the study's finding is, if the "true" effect were zero. This estimate of unlikeliness is referred to as a *p* value. Many of the results relied on in the Nasdaq proposal do not provide a *p* value or even statements about the statistical significance of their findings. These omissions make it impossible to know whether the reported outcome differences between diverse and nondiverse firms are anything but random noise.
15. Nasdaq Stock Market LLC, "Proposed Rule Change to Adopt Listing Rules Related to Board Diversity," 17.
16. Vivian Hunt, Dennis Layton, and Sara Prince, *Diversity Matters*, McKinsey & Company, February 2, 2015, 1, https://www.mckinsey.com/~/media/mckinsey/business%20functions/organization/our%20insights/why%20diversity%20matters/diversity%20matters.ashx.
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18. For a more technical discussion of the details in this section, see Jonah B. Gelbach and Jonathan Klick, "Empirical Law and Economics," in *The Oxford Handbook of Law and Economics, Volume I: Methodology and Concepts*, ed. Francesco Parisi (Oxford, UK: Oxford University Press, 2017).
19. See, for example, Vicki L. Bogan, David R. Just, and Chekitan S. Dev, "Team Gender Diversity and Investment Decision Making Behavior," *Review of Behavioral Finance* 5, no. 2 (February 2013): 134–52, https://www.researchgate.net/publication/228204293_Team_Gender_Diversity_and_Investment_Decision_Making_Behavior. The authors show that increasing gender diversity in teams has

mixed effects on risk-taking behavior.

20. For a technical discussion of instrumental variables, see Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 4th ed. (Mason, OH: South-Western Cengage Learning, 2009), chap. 15.

21. In principle, if one can identify many instruments, a test for overidentifying restrictions exists. The intuition for the test assumes that at least one of the instruments satisfies both conditions (related to the policy variable and otherwise unrelated to the outcome variable). The test examines the estimates from using each instrument separately and in each combination and then examines whether all the estimates are statistically equivalent. The idea is that, if one has found the "right" answer and all the instruments are good instruments, each should lead to the same outcome. If different outcomes are estimated, then at least one of the instruments (and maybe all) is bad. The problem, however, is that, if all the instruments are similarly correlated with the unobservable characteristics (a condition that cannot be tested since it is not possible to examine a correlation with an unobserved quantity), they will all lead to the same biased estimate, passing the test without validating the estimates.

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23. FCLTGlobal, *The Long-Term Habits of a Highly Effective Corporate Board*, 11.

24. FCLTGlobal, *The Long-Term Habits of a Highly Effective Corporate Board*, 12.

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26. Nasdaq Stock Market LLC, "Proposed Rule Change to Adopt Listing Rules Related to Board Diversity," 18.

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ROBERT PATRICK STICHT (SBN 138586)
JUDICIAL WATCH, INC.
425 Third Street SW, Suite 800
Washington, DC 20024
Telephone: (202) 646-5172
Facsimile: (202) 646-5199
rsticht@judicialwatch.org

Attorneys for Plaintiffs,
Robin Crest, Earl De Vries, and Judy De Vries

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ROBIN CREST, EARL DE VRIES, and JUDY DE VRIES,

Plaintiffs,

v.

ALEX PADILLA, in his official capacity as Secretary of State of the State of California.

Defendant.

Case No. 19STCV27561

PROOF OF SERVICE

PROOF OF SERVICE

I, Robert Patrick Sticht, declare as follows:

I am a citizen of the United States, over the age of eighteen years and not a party to the above-entitled action. I am employed at Judicial Watch, Inc., 425 Third Street SW, Suite 800, Washington DC 20024.

On September 7, 2021, I served the following document(s):

SEE ATTACHMENT

on the following persons:

Lara Haddad
Deputy Attorney General
Government Law Section
California Department of Justice
300 South Spring Street
Los Angeles CA 90013-1230
Attorneys for Alex Padilla

[ ] BY UNITED STATES MAIL: Following ordinary business practices, I caused true and correct copies of the above documents to be sealed in addressed envelope(s) and placed for collection and mailing with the United States Postal Service. I am readily familiar with the firm's practices for collecting and processing mail. In the ordinary course of business, the sealed envelope(s) that were placed for collection would be deposited, postage prepaid, with the United States Postal Service that same day.

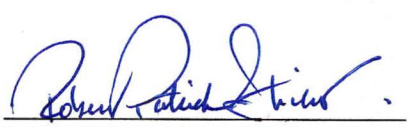
[ ] BY OVERNIGHT DELIVERY: I enclosed the documents in an envelope or package provided by an overnight delivery carrier and addressed to the persons at the addresses set forth above. I placed the envelope or package for collection and overnight delivery at an office or a regularly utilized drop box of the overnight delivery carrier.

[X] BY ELECTRONIC MAIL: Based on a court order or an agreement of the parties to accept electronic service, I caused the documents to be served electronically through One Legal in portable document format ("PDF") Adobe Acrobat.

[X] BY EMAIL: I caused the documents to be served electronically to Lara.Haddad@doj.ca.gov in PDF format ("PDF") Adobe Acrobat.

I declare under penalty of perjury pursuant to the laws of the State of California that the foregoing is true and correct.

Executed September 7, 2021, at Los Angeles, CA.



ROBERT PATRICK STICHT

Attachment To Proof of Service

PLAINTIFFS' MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

PLAINTIFFS' STATEMENT OF MATERIAL FACTS IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

PLAINTIFFS' OBJECTIONS TO EVIDENCE SUBMITTED BY DEFENDANT IN SUPPORT OF DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

PLAINTIFFS' SUPPLEMENTAL REQUEST FOR JUDICIAL NOTICE IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

DECLARATION OF ROBERT PATRICK STICHT IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

DECLARATION OF JONATHAN KLICK IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT

PLAINTIFFS' EVIDENCE IN OPPOSITION TO DEFENDANT'S MOTION FOR SUMMARY JUDGMENT; EXHIBITS AG-AN

PROOF OF SERVICE