



2021

Unintended Legislative Inertia

Mirit Eyal-Cohen

University of Alabama School of Law

Follow this and additional works at: <https://digitalcommons.law.uga.edu/blr>



Part of the [Legislation Commons](#), and the [State and Local Government Law Commons](#)

Recommended Citation

Eyal-Cohen, Mirit (2021) "Unintended Legislative Inertia," *Georgia Law Review*. Vol. 55: No. 3, Article 5.
Available at: <https://digitalcommons.law.uga.edu/blr/vol55/iss3/5>

This Article is brought to you for free and open access by Digital Commons @ University of Georgia School of Law. It has been accepted for inclusion in Georgia Law Review by an authorized editor of Digital Commons @ University of Georgia School of Law. [Please share how you have benefited from this access](#) For more information, please contact tstriepe@uga.edu.

UNINTENDED LEGISLATIVE INERTIA

*Mirit Eyal-Cohen**

Institutional and political forces create strong inertial pressures that make updating legislation a difficult task. As a result, laws often stagnate, leading to the continued existence of obsolete rules and policies that serve long-forgotten purposes. Recognizing this inertial power, legislatures over the last few decades have increasingly relied on a perceived solution—temporary legislation. In theory, this measure avoids inertia by requiring legislators to choose to extend a law deliberately.

This Article argues that temporary legislation is a double-edged sword. While some temporary laws ultimately expire, many perpetuate through cycles of extension and reauthorization. Temporary legislation often creates its own inertial force, leading to the unintended permanence of what was originally believed to be provisional. Using a case study from a large public subsidy adopted as a localized fix to a temporary problem, this Article demonstrates how the subsidy has inadvertently grown in scope and in size, creating its own inertial pathways that made its repeal exceedingly difficult.

Path-dependent dynamics of temporary legislation affect not only present-day policies, but also the ability of legislatures to resist status quo bias and bring about legal change. This Article concludes with normative insights on ways to utilize flexible rulemaking whilst circumventing legislative inaction. Careful design of expiring provisions that is aware of the inertial power of temporary legislation can effectively ensure that laws are kept or discarded given their merits, not by force of the past.

* Irving Silver and Frances Grodsky Silver Faculty Scholar and Professor of Law, the University of Alabama School of Law. This Article benefited from the input of participants at the American Tax Association, the Women in Law Teaching Workshop at the University of Minnesota, and the National Tax Association Conference. I thank Yonathan Arbel, Steven Bank, William S. Brewbaker III, Richard Delgado, John Shahar Dillary, Vic Fleischer, Miranda Perry Fleischer, J. Clifton Fleming, Jr., Michael J. Graetz, Andrew T. Hayashi, Kristin Hickman, Claire Hill, Julie Hill, Ariel Jurow Kleiman, Ronald Krotoszynski, Jacob Nussim, Jason Oh, Lee Liberman Otis, Robert J. Peroni, Ted Seto, Sloan Speck, Shalini Ray, Marie Reilly, Dan Shaviro, and Christina Skinner. I am also thankful to Brandi Gregory and Robert Waller for valuable research assistance.

TABLE OF CONTENTS

I. INTRODUCTION..... 1195

II. LEGISLATIVE INERTIA..... 1202

 A. THE SOURCES OF LEGISLATIVE INERTIA..... 1203

 B. A REMEDY AND ITS UNINTENDED PATH 1208

 1. *Temporary Legislation and its Promise* 1209

 2. *Criticism and Increased Inertia*..... 1217

III. PATH DEPENDENCE THEORY..... 1221

 A. REACTIVE SEQUENCES AND CRITICAL JUNCTURES .. 1223

 B. STATUS QUO BIAS THROUGH INCREASING RETURNS AND
 POSITIVE FEEDBACK..... 1226

 C. SELF-REINFORCEMENT AND LOCK-IN..... 1229

IV. THE RESEARCH CREDIT AS A CASE STUDY 1232

 A. POSITIVE FEEDBACK FOR A NEW ROUTE..... 1238

 B. THE BIRTH OF A NEW TEMPORARY PATH 1244

 C. REACTIVE SEQUENCES OF RENEWALS..... 1246

V. SELF-REINFORCED INERTIA..... 1249

 A. NON-PROFIT ORGANIZATIONS AND FEDERAL AGENCIES
 1250

 B. INDUSTRY LEADERS AND PROFESSIONAL TRADE
 ASSOCIATIONS..... 1255

VI. CONCLUSION 1270

VII. APPENDIX: LEGISLATIVE HISTORY 1273

I. INTRODUCTION

Scholars have long recognized the dangers of statutory stagnation.¹ Powerful forces create inertia in our laws and statutes, leading to perverse and sometimes bizarre results, such as laws that criminalize the housing of a pirate or the mailing of a mongoose.² Less amusing, but of deep economic and social import, are a host of dated tax,³ sanitary,⁴ and safety regulations⁵ meant to achieve long-forgotten goals.⁶ The inertial force of past legislation is explained by

¹ See GUIDO CALABRESI, A COMMON LAW FOR THE AGE OF STATUTES 10–11 (1982) (noting the harms of inertia and proposing that the judiciary is the most suitable actor to hinder legislative inertia via adjudication); see also Jonathan H. Adler, *Judicial Federalism and the Future of Federal Environmental Regulation*, 90 IOWA L. REV. 377, 472 (2005) (“The degree of inertia in the legislative process is substantial, and it is far easier to block legislation than to enact it.”); John Copeland Nagle, *Corrections Day*, 43 UCLA L. REV. 1267, 1282–83 (1996) (noting the disadvantages of legislative inertia). But see Jeremy Waldron, *The Core of the Case Against Judicial Review*, 115 YALE L.J. 1346, 1348, 1389 (2006) (reviewing the current criticism of judicial review of legislation and asserting the significance of inertia to democracy).

² See 18 U.S.C. §§ 42, 1716D (2018) (dealing with nonmailable injurious animals); 39 U.S.C. § 3015(a) (2018) (same); see also 18 U.S.C. § 1657 (2018) (dealing with pirates). For a humorous overview of prohibited activities that are considered illegal by federal laws today, see A Crime a Day (@CrimeADay), TWITTER, <https://twitter.com/CrimeADay> (last visited Mar. 10, 2021); see also MIKE CHASE, HOW TO BECOME A FEDERAL CRIMINAL: AN ILLUSTRATED HANDBOOK FOR THE ASPIRING OFFENDER 1 (2019) (consolidating these and other examples); SHERYL LINDSELL-ROBERTS, K.R. HOBBIE, TED LEVALLIANT & MARCEL THEROUX, WACKY LAWS, WEIRD DECISIONS & STRANGE STATUTES 7 (2004) (outlining “[o]utlandish” statutes and judicial decisions).

³ See, e.g., 26 U.S.C. §§ 5053(e), 5674(a) (2018) (prohibiting a person from brewing, tax-free, over a hundred gallons of beer for personal consumption); cf. Eliminating Unnecessary Tax Regulations, 84 Fed. Reg. 9231 (Mar. 14, 2019) (to be codified in scattered parts of 26 C.F.R.) (repealing nearly 300 duplicative and obsolete tax regulations dating back to 1942 following an executive order signed by then-President Trump to review existing regulations and to simplify the Tax Code).

⁴ Under 9 C.F.R. § 93.415 (2020), removing llama manure from a quarantine facility is strictly prohibited unless the llama who made the manure has been released.

⁵ Under 16 C.F.R. § 1202.4 (2020), it is a federal crime for a matchbook maker to distribute matchbooks that fail to comply with a minimum friction strip, a staple size, and certain cover requirements. Similarly, 36 C.F.R. § 520.4(g) (2020) prohibits bringing strollers and baby carriages into a zoo’s exhibit buildings and public restrooms.

⁶ See Larry Kramer, *Rethinking Choice of Law*, 90 COLUM. L. REV. 277, 336–38 (1990) (arguing for the need to subordinate obsolete laws that no longer reflect strong policies); Melia Robinson & Erin McDowell, *The Most Ridiculous Law in Every State*, BUS. INSIDER (June 23,

a variety of political and institutional considerations, including limited legislative resources, status quo bias, and partisan interests.⁷ Doubtlessly, the inertial pull of these forces is strong.

To counter legislative inertia, lawmakers have increasingly adopted self-terminating legislation. Examples used over the past few decades include zero-base budget laws,⁸ sunset clauses,⁹ extenders,¹⁰ temporary-effects laws,¹¹ and experimental legislation.¹² The common denominator of these legislative tools is

2020, 5:40 PM), <https://www.businessinsider.com/weird-state-laws-across-america-2018-1> (claiming to identify the strangest statutes still on the books).

⁷ See *infra* Section II.A; see, e.g., Janet L. Hiebert, *New Constitutional Ideas: Can New Parliamentary Models Resist Judicial Dominance When Interpreting Rights?*, 82 TEX. L. REV. 1963, 1979–80 (2004) (arguing that legislators have a disproportionate interest in ensuring specific objectives rather than accommodating individual rights).

⁸ See Eloise Pasachoff, *The President's Budget as a Source of Agency Policy Control*, 125 YALE L.J. 2182, 2210–11 (2016) (noting that, in the 1970s, there was an administrative practice of agencies to “use Zero-Based Budgeting to prepare their budget requests—that is, to prepare each year’s request as if it were starting at zero”). *But see* David Gamage, *Preventing State Budget Crises: Managing the Fiscal Volatility Problem*, 98 CALIF. L. REV. 749, 793 n.197 (2010) (“Zero-base budgeting is seldom implemented in practice.”).

⁹ “Sunset legislation” was coined in the 1970s by Common Cause, a prominent reformist group that relied on Theodore Lowi’s idea of “tenure of statutes.” See Theodore Lowi, *Lowi’s Intent and the Origin of Sunset*, RIPON F., Spring 2009, at 27, 27 (explaining how the original intent behind Professor Lowi’s idea of the “tenure of statutes” was transformed by the group). Black’s Law Dictionary defines a sunset law as “[a] statute under which a governmental agency or program automatically terminates at the end of a fixed period unless it is formally renewed.” *Sunset Law*, BLACK’S LAW DICTIONARY (11th ed. 2019); see also Yair Listokin, *Learning Through Policy Variation*, 118 YALE L.J. 480, 530 (2008) (advocating for the use of sunset provisions as a flexible legislative mechanism). See generally AM. ENTER. INST. FOR PUB. POLICY RESEARCH, ZERO-BASE BUDGETING AND SUNSET LEGISLATION (1978) (describing the various reasons for the use of sunset legislation).

¹⁰ See Michael Doran, *Tax Legislation in the Contemporary U.S. Congress*, 67 TAX L. REV. 555, 556 (2014) (noting that the tax particularism that today shows up through extenders legislation has become a marginal feature of the tax legislative process); Victor Fleischer, *Tax Extenders*, 67 TAX L. REV. 613, 613 (2014) (defining “extenders” as “tax breaks scheduled for repeal”).

¹¹ See Michael Doran, *Intergenerational Equity in Fiscal Policy Reform*, 61 TAX L. REV. 241, 292 (2008) (noting that legislatures should limit the scope of their policymaking to policies having only temporary effects); George K. Yin, *Temporary-Effect Legislation, Political Accountability, and Fiscal Restraint*, 84 N.Y.U. L. REV. 174, 253 (2009) (arguing that enactment of temporary-effect, rather than permanent, legislation would promote political accountability and greater fiscal restraint).

¹² See SOFIA RANCHORDÁS, CONSTITUTIONAL SUNSETS AND EXPERIMENTAL LEGISLATION: A COMPARATIVE PERSPECTIVE 10–11 (2014) (noting experimental lawmaking is beneficial in

that they set an “expiration date” for legislation.¹³ The traditional view is that such measures counter inertia, as they make deliberation and intentional statutory action necessary to preserve legislation.

Public choice theorists argue that such measures serve an alternative, more sinister purpose.¹⁴ In their view, temporary legislation is a tool to extract rents from industry players.¹⁵ It requires interest groups to constantly seek the approval and favor

times of uncertainty); Edward L. Rubin, *Legislative Methodology: Some Lessons from the Truth-in-Lending Act*, 80 GEO. L.J. 233, 303 (1991) (describing a method of experimental legislation in which the legislature enacts a standing authorization for agencies to implement experimental rules).

¹³ While each of these categories portrays different approaches and mechanisms, this Article will use the terms “expiring legislation” or “temporary legislation” interchangeably to denote laws that expire on their own after a set period of time. See Jacob E. Gersen, *Temporary Legislation*, 74 U. CHI. L. REV. 247, 247 (2007) (describing temporary legislation as statutes containing clauses limiting the duration of their validity); see also William G. Gale & Peter R. Orszag, *Sunsets in the Tax Code*, 99 TAX NOTES 1553, 1554 (2003) (detailing the various expiring tax extenders added in the 2001 Bush tax cuts); Elizabeth Garrett, *Accounting for the Federal Budget and Its Reform*, 41 HARV. J. ON LEGIS. 187, 194–95 (2004) (providing examples of the effects of sunset provisions on budget rules and fiscal policy decisions); Manoj Viswanathan, Note, *Sunset Provisions in the Tax Code: A Critical Evaluation and Prescriptions for the Future*, 82 N.Y.U. L. REV. 656, 658 (2007) (determining that the effect of tax extenders is to create permanent status through temporary sunset provisions); AM. ENTER. INST. FOR PUB. POLICY RESEARCH, *supra* note 9, at 25 (debating the reasons for sunset legislation).

¹⁴ On public choice theory and political rent seeking, see generally Gordon Tullock, *The Theory of Public Choice*, in GORDON TULLOCK, ARTHUR SELDON & GORDON L. BRADY, *GOVERNMENT FAILURE: A PRIMER IN PUBLIC CHOICE* 3, 3–6 (2002); FRED S. MCCHESENEY, *MONEY FOR NOTHING: POLITICIANS, RENT EXTRACTION, AND POLITICAL EXTORTION* 1–3 (1997); DENNIS C. MUELLER, *PUBLIC CHOICE* 117–19 (1979); Dennis C. Mueller, *Public Choice: A Survey*, 14 J. ECON. LITERATURE 395, 396 (1976); Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224, 226 (1967).

¹⁵ See Rebecca M. Kysar, *The Sun Also Rises: The Political Economy of Sunset Provisions in the Tax Code*, 40 GA. L. REV. 335, 337 (2006) (describing temporary provisions as “a legislative panacea to the ills of modern government” and arguing that it is worthwhile for politicians to keep legislation temporary to continue to receive rent payments); see also Fleischer, *supra* note 10, at 624 (claiming that “extenders are bad tax policy” that “enable gridlock”); Theodore P. Seto, *Drafting a Federal Balanced Budget Amendment That Does What It Is Supposed to Do (and No More)*, 106 YALE L.J. 1449, 1465–66 (1997) (arguing that public choice theory explains why “legislative incentives” favor “special-interest legislation” rather than “diffuse interest[s]”); Daniel Shaviro, *Beyond Public Choice and Public Interest: A Study of the Legislative Process as Illustrated by Tax Legislation in the 1980s*, 139 U. PA. L. REV. 1, 66–68 (1990) (arguing that one of the main legislative motivations is rent extraction).

of legislators so as to not lose their support; indeed, there is some evidence to that effect.¹⁶

However, both the standard narrative and public choice theory miss a large part of the picture. This Article argues that temporary legislation results in an inertial force of its own. By applying path dependence theory to case studies of temporary legislation, this Article demonstrates how temporary legislation can often inadvertently become permanent—not through intent or design, but through the inherent inertial force of such legislation. What public choice theorists miss, then, is the fact that so much temporary legislation expires¹⁷ or becomes permanent,¹⁸ in contradiction to the supposed interests of legislators to extract rents.

¹⁶ See Julie A. Roin, *United They Stand, Divided They Fall: Public Choice Theory and the Tax Code*, 74 CORNELL L. REV. 62, 63 (1988) (describing how public choice theory “explains why requiring a group of taxpayers to work together on a common tax minimization scheme is an effective barrier against the success of the scheme”); Kysar, *supra* note 15, at 365–66 (discussing the role of interest groups efforts in extending sunset provisions).

¹⁷ Some examples of temporary legislation that have expired include, but are not limited to, laws that date back to the Sedition Act of 1798, ch. 74, 1 Stat. 596 (expired 1801), which permitted the deportation, fine, or imprisonment of anyone deemed a threat or for publishing “false, scandalous and malicious writing” against the U.S. government. The Federal Assault Weapons Ban—which was added as a subsection of the Violent Crime Control and Law Enforcement Act of 1994, Pub. L. No. 103-322, 108 Stat. 1796, 1996–2000—prohibited the manufacture, for civilian use, of semi-automatic assault firearms with certain large capacity ammunition magazines; this ban expired on September 13, 2004. Several of the government surveillance portions in the USA PATRIOT ACT, Pub. L. No. 107-56, 115 Stat. 272, 295 (2001) expired in 2005 per the Act’s “sunset” provision and were not reauthorized until 2011. See PATRIOT Sunsets Extension Act of 2011, Pub. L. No. 112-14, 125 Stat. 216 (extending the date of the sunset provision). The surveillance portion that lapsed on June 1, 2015 was restored in the USA FREEDOM Act of 2015, Pub. L. No. 114-23, 129 Stat. 268, 300, until December 15, 2019—but it has recently expired again. The Violence Against Women Act of 1994 (VAWA), Pub. L. No. 103-322, 108 Stat. 1796, 1902–24, was signed into law by then-President Bill Clinton in 1994 and provided government funding to battle and prosecute violent crimes against women. VAWA was reauthorized a number of times in 2000, 2013, and most recently 2019, but it expired in February 2019. See *VAWA Faces Hard Road Ahead*, AM. B. ASS’N (Aug. 27, 2020), https://www.americanbar.org/advocacy/governmental_legislative_work/publications/washingtonletter/august_2020_wl/vawa-update-0820wl/ (outlining VAWA’s history).

¹⁸ See, for example, the Orphan Drug Tax Credit program—a temporary program enacted in 1983 that ultimately became permanent in 1997—which provides subsidies to orphan-status drugs and biologics that are intended to treat rare diseases that affect fewer than 200,000 people in the United States. Orphan Drug Act, Pub. L. No. 97-414, 96 Stat. 2049, 2053–56 (1983) (codified as amended at 26 U.S.C. § 45C (2018)). The Tax Cuts and Jobs Act

Understanding the inertial power of temporary legislation is important in its own right. Yet, this Article also offers some first steps in identifying elements of the utmost importance to the design of optimal policy today and permanence of temporary legislation. By recognizing these circumstances, policymakers can better identify which temporary measures are more likely to become irremovable fixtures and which will be amenable to future change.

This Article unfolds in four parts. Part II explores the rise of temporary legislation. Legislators use this statutory mechanism to battle inertia by requiring frequent reassessment of existing law. Such reexamination allows legislatures to revisit new information, fine-tune policymaking errors, respond to changes in social or technological circumstances, and rescind ineffective rules.¹⁹ Some also believe that temporary legislation increases government oversight by requiring the reevaluation of policies and programs and by allowing legislators to collect data before fully committing to a permanent new policy.²⁰ Alas, as this Part will demonstrate, in some circumstances temporary legislation—a tool meant to curb inertia—may inadvertently create its own inertial force.

Part III lays out the elements of path dependence theory that go well beyond the maxim that “history matters” or that our past shapes our future. In economics and the social sciences, path dependence theory categorically focuses on processes of change.²¹ It attributes historical sequences to institutional patterns, increasing

of 2017, Pub. L. No. 115-97, 131 Stat. 2054, 2133 (codified at 26 U.S.C. § 45C (2018)) reduced the orphan drug credit rate from 50% to 25%. At the end of the fiscal cliff in 2012, President Obama signed into law the American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, 126 Stat. 2313, that made 82% of President Bush’s tax cuts permanent. See Chye-Ching Huang, *Budget Deal Makes Permanent 82 Percent of President Bush’s Tax Cuts*, CTR. ON BUDGET & POL’Y PRIORITIES (Jan. 3, 2013), <https://www.cbpp.org/research/budget-deal-makes-permanent-82-percent-of-president-bushs-tax-cuts>.

¹⁹ See Listokin, *supra* note 9, at 529 (claiming that temporary laws may be good mechanisms for optimal policy because they make policies more reversible and enhance efficient policymaking in the search for an optimal solution).

²⁰ See, e.g., Lewis Anthony Davis, *Review Procedures and Public Accountability in Sunset Legislation: An Analysis and Proposal for Reform*, 33 ADMIN. L. REV. 393, 393–96 (1981) (discussing how temporary legislation was intended to increase legislative oversight but noting that this mechanism has not always been adequate).

²¹ See James Mahoney, *Path Dependence in Historical Sociology*, 29 THEORY & SOC’Y 507, 507 (2000) (discussing the difference between general historical analysis and path dependence scholarship).

returns dispositions, and deterministic properties.²² Identifying path dependence, therefore, involves tracing a given result back to reactive sequences—chains of interrelated, unforeseen events.²³ This Part concludes that the ability of decisionmakers to break a certain pattern, and divert from a chosen path, critically depends on the presence (or lack thereof) of specific dynamics.

Part IV draws insights from and applies path dependence theory using a case study to demonstrate the inertial force of temporary legislation. It focuses on a prominent measure in tax law—the “research credit” provision—that is a temporary measure meant to encourage research and experimentation using large financial incentives.²⁴ Over several decades, this measure faced multiple lapses, renewals, and retroactive extensions until it finally became permanent.²⁵ The path of the research credit followed “critical junctures” that provided opportunities for lawmakers to choose between two or more policy options.²⁶ Once a selection was made, it created inherent inertial forces via “reactive causal sequences” of frequent cycles of extension and renewal with dynamics of “increasing returns” and “positive feedback” that helped entrench this policy and prevent diversion from the initial choice.²⁷

²² See *infra* Part III.

²³ In some cases, path-dependence studies focus on “deviant cases” that have rare or unique outcomes that could not have been predicted otherwise. See Mahoney, *supra* note 21, at 508 (describing several deviant cases that are commonly studied in path-dependence theory).

²⁴ The research credit, codified at 26 U.S.C. § 41 (2018), was added by Section 221 of the Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, 95 Stat. 172, 241–47.

²⁵ See *infra* Appendix; cf. Mirit Eyal-Cohen, *Lessons in Cyclical Fiscal Activism*, 48 CONN. L. REV. 873, 878 (2016) (detailing the historical circumstances of the creation and repeal of another form of temporary legislation, the Investment Tax Credit).

²⁶ See *infra* Section III.A; see also Douglas J. Puffert, *Path Dependence, Network Form, and Technological Change* (arguing that path dependence can be influenced by a priori determinants such as technology, factor endowments, preferences, and institutions, as well as specific contingent events), in HISTORY MATTERS: ESSAYS ON ECONOMIC GROWTH, TECHNOLOGY, AND DEMOGRAPHIC CHANGE 63 (Timothy W. Guinnane et al. eds., 2004); Margaret Levi, *A Model, a Method, and a Map: Rational Choice in Comparative and Historical Analysis* (“[T]he branch on which a climber begins is the one she tends to follow.”), in COMPARATIVE POLITICS: RATIONALITY, CULTURE, AND STRUCTURE 19, 28 (Mark Irving Lichbach & Alan S. Zuckerman eds., 1997).

²⁷ See *infra* Part V; see also Mark J. Roe, *Chaos and Evolution in Law and Economics*, 109 HARV. L. REV. 641, 645–47 (1996) (pointing to the effectiveness and strength of the chosen pattern as determining the ability to break out of such pattern); Paul Pierson, *Increasing Returns, Path Dependence, and the Study of Politics*, 94 AM. POL. SCI. REV. 251, 252 (2000)

Thereafter, Part V reveals that non-profits and associations that organize the collective action of constituents (who benefit from the path) “self-reinforced” that choice (as well as their existence) and helped curb legal change or diversion from the path.²⁸ With these elements present, the research credit, intended in 1981 to be a temporary four-year measure, has persisted to the present because the cost of switching to an alternative has become too high.²⁹

What was meant to be a temporary measure to address a localized social issue is now the source of large and established subsidies. Today, almost 18,000 companies collectively receive over \$12.5 billion through the research credit program.³⁰ Whether this policy is effective is not the issue; rather, the main point is that such a large and consequential program arose due to unintended inertial forces created by legislation originally designed as a temporary fix.

This Article concludes with some suggestions regarding more effective ways to use temporary rulemaking whilst circumventing legislative inertia. Legal scholarship that incorporates path dependence theory can provide important insights on recent expiring legislation.³¹ It proposes adopting certain mechanisms and default rules to allow experimentation with expiring provisions while avoiding statutory constriction through inertia.

(defining positive feedback as the condition in which a path dependence is created within a polity); Daron Acemoglu, Simon Johnson & James A. Robinson, *The Colonial Origins of Comparative Development: An Empirical Investigation*, 91 AM. ECON. REV. 1369, 1373–77, 1395 (2001) (exemplifying increasing returns dynamics).

²⁸ See Pierson, *supra* note 27, at 260 (arguing that organizations have a strong tendency to persist due to self-reinforcing dynamics associated with collective action processes).

²⁹ See Daryl Lim, *Copyright Under Siege: An Economic Analysis of the Essential Facilities Doctrine and the Compulsory Licensing of Copyrighted Works*, 17 ALB. L.J. SCI. & TECH. 481, 508 (2007) (describing the ability of increased switching costs to entrench customers); see also Listokin, *supra* note 9, at 530 (discussing high constitutional inertia due to the extremely high “transaction costs” of changing constitutional policy).

³⁰ See *SOI Tax Stats – Corporation Research Credit*, IRS, <https://www.irs.gov/statistics/soi-tax-stats-corporation-research-credit> (last updated Sept. 10, 2020) (select Tax Year 2014 under “Table 1: Corporations Claiming a Credit, by Industrial Sector”).

³¹ For a list of current expiring provisions in the tax context, see STAFF OF THE JOINT COMM. ON TAXATION, JCX-1-20, LIST OF EXPIRING FEDERAL TAX PROVISIONS 2020-2029 (2020), <https://www.jct.gov/publications.html?func=startdown&id=5240>; see also Darla Mercado, *These Three Tax Breaks for 2018 Are Still Up in the Air*, CNBC (Feb. 6, 2019, 10:10 AM), <https://www.cnbc.com/2019/02/06/congress-has-yet-to-approve-these-valuable-tax-breaks-for-2018.html> (naming mortgage insurance, debt forgiveness of foreclosure, and tuition fees for higher education as temporary legislation that were up for renewal for the 2018 tax year).

Legislative inertia permeates many areas of the law.³² The staying power of past decisions can go well beyond present-day cost-benefit analyses. Path dependence theory serves as an important avenue to explain not only the destiny of a legislative route but also to potentially open new frontiers of legal research and point our attention to overlooked paths and sequences.³³ Temporary legislation is not formed in a void; it is often created when critical national concerns exerted pressure on legislators to achieve economic or social outcomes.³⁴ Yet, once these exigencies are removed, rules and procedures—as well as organizations that rely on their existence—may preserve and expand their paths to invite more participants and increase their returns. These path dynamics may lock in temporary measures initially designed to prevent legislative inertia and encourage change, creating unintended consequences and becoming rooted in our legal system.

II. LEGISLATIVE INERTIA

[Inertia], or innate force of matter, is a power of resisting, by which every body, as much as in it lies, endeavours to persevere in its present state, whether it be of rest, or of moving uniformly forward in a right line.³⁵

—Isaac Newton

In physical science, dormant objects and those that move in a straight line at a constant speed will continue resting or moving

³² See, e.g., *supra* notes 1, 18, 29–31.

³³ See, e.g., Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 601, 604 (2001) (examining the common law concept of precedent from a path dependent doctrine); Lucian Arye Bebchuk & Mark J. Roe, *A Theory of Path Dependence in Corporate Ownership and Governance*, 52 STAN. L. REV. 127, 129 (1999) (discussing path dependence theory in relation to initial choices of incorporation); see also Lim, *supra* note 29, at 508 (describing the lock-in created when switching costs from one software to another are too high); Marcel Kahan & Michael Klausner, *Path Dependence in Corporate Contracting: Increasing Returns, Herd Behavior and Cognitive Biases*, 74 WASH. U. L.Q. 347, 348 (1996) (exemplifying the use of a contract term by firms, noting that the more people utilize that term, the greater the benefit from it).

³⁴ See Gersen, *supra* note 13, at 255–57 (providing examples of important social policies that came about as a result of temporary legislation).

³⁵ ISAAC NEWTON, *THE PRINCIPIA 1* (Andrew Motte trans., Prometheus Books 1995) (1687).

unless a force interrupts them.³⁶ In the legal context, inertia describes the preservation of the status quo.³⁷ Continuity and evolution are both crucial to the stability of any legal system.³⁸ Modern law has to be functional as well as responsive to financial and natural crises.³⁹ Changing circumstances may render statutes inconsistent with new social or economic landscapes. Obsolescent laws prevent legislatures and courts from harmonizing legal rules with present-day conditions and the demands of shifting majorities.⁴⁰ Given continuous demands for legal reform nowadays, it is worth asking: what causes legislative inertia? Why do various aspects of the law persist?

A. THE SOURCES OF LEGISLATIVE INERTIA

Many facets of inertia reflect a status quo bias that legislatures must overcome in order to enact a law.⁴¹ In their seminal manuscript, *The Legal Process*, Henry Hart and Albert Sacks

³⁶ See, e.g., Christopher Gresov, Heather A. Haveman & Terence A. Oliva, *Organizational Design, Inertia and the Dynamics of Competitive Response*, 4 ORG. SCI. 181, 182 (1993) (describing inertia as the property of a system that continues to move in straight line unless acted upon by external force).

³⁷ See Cass R. Sunstein, *Deciding by Default*, 162 U. PA. L. REV. 1, 17 (2013) (discussing the effect of automatic enrollment in creating inertia in people's choices and noting that "[i]n view of the power of inertia and the tendency to procrastinate, people may simply continue with the status quo"); see also JERRY L. MASHAW & DAVID L. HARFST, *THE STRUGGLE FOR AUTO SAFETY* 249 (1990) ("The courts are the legal embodiment of political inertia."); Chris William Sanchirico, *Tax Inertia: A General Framework with Specific Application to Contemporary Business Tax Reform*, 69 TAX L. REV. 135, 140 (2016) (describing "tax inertia" as the "tax considerations that weigh against a decisionmaker's choice to switch from a status quo investment to an alternative").

³⁸ CALABRESI, *supra* note 1, at 3.

³⁹ Cf. Steven A. Dean, *Tax Deregulation*, 86 N.Y.U. L. REV. 387, 426 (2011) (exploring responsive regulation in the tax area and noting the value of deregulatory reforms that follow principles of responsive regulation).

⁴⁰ See Allan C. Hutchinson & Derek Morgan, *Calabresian Sunset: Statutes in the Shade*, 82 COLUM. L. REV. 1752, 1756 (1982) (reviewing GUIDO CALABRESI, *A COMMON LAW FOR THE AGE OF STATUTES* (1982)) ("Anachronistic laws, whether statutory or judicial, must be eradicated. . . . Consequently, judges should be entitled to rework legislative enactments to keep them in line with the current social and legal landscape.")

⁴¹ For example, take the legal doctrine of stare decisis. See, e.g., Lawrence C. Marshall, "Let Congress Do It": *The Case for an Absolute Rule of Statutory Stare Decisis*, 88 MICH. L. REV. 177, 190–91 (1989) (discussing the obstacles and inertia created by the doctrine).

argued that lawmakers have a natural inclination to legislative inaction, as “other measures have a stronger claim on the limited time and energy of the [legislative] body.”⁴² They recognized the perils of attributing “the weight of government inertia on the side of social inaction rather than of action.”⁴³ The U.S. government, in their opinion, has reached its highest state of development, and the vested interests that coincide with institutional inertia are already aiming toward achieving their settled objectives.⁴⁴ Taking a different view, Ronald Dworkin stated that legislative inertia stems from a lack of sufficient legislative time and priorities.⁴⁵ Limited available time during legislative sessions, he claimed, prohibits legislatures from passing new laws, even though legislators acknowledge the need to do so.⁴⁶ Similarly, this failure to move forward results in unsatisfactory consideration of existing statutes.

In his book, *A Common Law for the Age of Statutes*, Guido Calabresi professes that over the last half-century, the United States has gone, from a system governed by the common law, through a process of “statutorification” by which written laws came to dominate our legal system.⁴⁷ One of the side effects of this process, he acknowledges, is that legislative inertia became a real and substantial phenomenon that threatens the integrity of the law.⁴⁸ He declares that we cannot continue “liv[ing] with aging statutes and rely[ing] on time to render them totally irrelevant.”⁴⁹ While updating legislation would be the optimal solution, Calabresi

⁴² Henry M. Hart Jr. & Albert M. Sacks, *The Legal Process: Basic Problems in the Making and Application of Law* 1395 (1958) (unpublished manuscript).

⁴³ *Id.* at 875.

⁴⁴ *See id.* at 115 (“[I]n American society all the forces both of vested interest and institutional inertia which are on the side of maintenance of existing institutions are on the side also of steadily more effective . . . achievement of their settled objectives.”).

⁴⁵ *See* Ronald Dworkin, *Political Judges and the Rule of Law* (“Legislative time is a scarce resource, to be allocated with some sense of political priorities . . .”), in *ARGUING ABOUT LAW* 193, 200 (Aileen Kavanagh & John Oberdiek eds., 2009).

⁴⁶ *See id.* (“[I]t may well be that a judicial decision would be overruled if Parliament had time to pass every law it would like to pass, but will not be overruled because Parliament does not.”).

⁴⁷ CALABRESI, *supra* note 1, at 1, 5 (“[W]e have become a nation governed by written laws.”).

⁴⁸ *See id.* at 34 (“Legislative inertia . . . [is] a fact of life . . .”).

⁴⁹ *Id.* at 80.

acknowledges that the legislature is not always up to the task.⁵⁰ Instead, he proposes a theory that empowers the judiciary to defeat legislative inertia by transferring the burden of upholding an obsolete law to those seeking to rely on it.⁵¹ Namely, he asserts that courts have better interpretative tools than legislatures for reading statutes in a manner consistent with the current legal framework.⁵²

Nevertheless, Calabresi also warns about making legislative changes too often.⁵³ He argues that if all statutes are reexamined *de novo* every so often, it will create imbalance in lawmaking.⁵⁴ Too much change, he worries, will create a statutory modern world with little continuity.⁵⁵ By the same token, Professor Daniel Farber has determined that legislative inertia is of “fundamental” importance.⁵⁶ He argues that in order to gain the benefits of stability, we must maintain some degree of “legislative inertia” in our system.⁵⁷ Accordingly, he proposes that we include statutory inertia in our search for optimal legislative decisionmaking.⁵⁸ Others reiterated this idea, claiming that we should stop treating legal inertia as a pathology reflecting democracy’s malfunction.⁵⁹

Some legal scholars that have explored the sources of legislative inertia have blamed the power of institutional constraints and

⁵⁰ See *id.* at 62 (arguing that the legislature is not the proper “institution or body . . . [to] entrust[] with the job of determining which laws and rules need renovation or reconsideration”); Nagle, *supra* note 1, at 1286 (describing Calabresi’s approach to legislative inertia).

⁵¹ See CALABRESI, *supra* note 1, at 2, 82–90 (explaining his proposed common-law-based, burden-shifting approach to judicial review of statutes).

⁵² See *id.* at 5–6 (arguing that judicial activism is the result of the legislature’s incapacity to keep laws up to date).

⁵³ See *id.* at 1 (arguing that, as statutes become the primary source of law, courts and legislatures have reacted to preserve continuity and change in the law).

⁵⁴ See *id.* at 60 (“If all statutes and constitutions were to be reexamined *de novo* every so often, a totally new balance in lawmaking would be established . . .”).

⁵⁵ See *id.* (“Instead of a system designed to achieve continuity and change in a modern, statutory world, we would have a system that gives us change and little continuity.”).

⁵⁶ See Daniel A. Farber, *Statutory Interpretation and Legislative Supremacy*, 78 GEO. L.J. 281, 308 (1989) (describing the benefits of legislative inertia).

⁵⁷ See *id.* (“[T]he agenda rules and institutional structures that create legislative inertia are themselves fundamental to the workings of legislatures. Without these constraints and constructs, legislatures would be plagued by instability and would be unable to function as deliberative bodies.” (footnote omitted)).

⁵⁸ See *id.* (“It is not at all clear that a democratic system could function otherwise.”).

⁵⁹ See, e.g., Waldron, *supra* note 1, at 1389 (asserting the significance of legislative inertia).

partisan political dynamics for creating blind spots and blockages in the legislative process.⁶⁰ Others have described legislative stagnation as deriving from the high costs of legislative change.⁶¹ Multiple levels of congressional approval create costs related to placing an item on the legislative agenda, learning about relevant issues, and reconciling different opinions on the optimal policy.⁶² Surmounting these obstacles and enacting change is not easy. It requires overcoming a presumption in favor of the existing state of affairs.⁶³ Overcoming this status quo bias involves attending to competing considerations in a way that is more challenging than merely protecting the existing state of affairs.⁶⁴ The degree of inertia in the legislative process is extensive, therefore, because impeding legislation is far less costly than passing it.⁶⁵

Commentators have identified two main categories of legislative inertia: priority-driven and coalition-driven.⁶⁶ Priority-driven inertia arises from “the time-consuming nature of the law-making process” and the need to prioritize the number of changes the legislature can enact within a legislative session.⁶⁷ Legislators have a packed agenda involving a variety of complex issues. Resolving these matters requires a large time commitment and policy expertise. Representatives who seek reelection must devote the majority of their time and energy to constituency service.⁶⁸ This

⁶⁰ See, e.g., Nagle, *supra* note 1, at 1282–83 (noting that legislative inertia can “block[] amendments that have no significant opposition”); Adler, *supra* note 1, at 472 (“The degree of inertia in the legislative process is substantial, and it is far easier to block legislation than to enact it.”).

⁶¹ Cf. Listokin, *supra* note 9, at 530 (discussing high constitutional inertia due to the extremely high “transaction costs” of changing constitutional policy).

⁶² See *id.* at 530–31 (discussing the costs of “multiple levels of [statutory] approval”).

⁶³ See *id.* at 484 (“Policymaking . . . often involves the choice between a new policy and the status quo. Generally, new policies have higher variance in outcomes than existing policies.”).

⁶⁴ See *id.* at 523 (discussing “status quo bias” as a barrier to new policies).

⁶⁵ Adler, *supra* note 1, at 472; cf. also Neal E. Devins, *Appropriations Redux: A Critical Look at the Fiscal Year 1988 Continuing Resolution*, 1988 DUKE L.J. 389, 389 n.1 (1988) (“Continuing resolutions are funding devices enacted whenever Congress is unable to pass one or more of the thirteen regular appropriation bills by the end of the budget cycle.”).

⁶⁶ See Rosalind Dixon, *The Core Case for Weak-Form Judicial Review*, 38 CARDOZO L. REV. 2193, 2209–11 (2017) (describing these two forms of legislative burdens of inertia).

⁶⁷ *Id.* at 2209–10.

⁶⁸ See *id.* at 2210 (“Capacity constraints . . . will mean that there is little reason . . . for legislative majorities to give priority to rights-based claims which are advanced by a

leaves little time to devote to considering and leading major legislative change.⁶⁹ Legislators and their aides often lack the expertise to resolve complicated questions and have only limited legislative time and resources.⁷⁰ Moreover, legislators do not want to risk alienating more constituents than they befriend by opining on controversial questions.⁷¹ Their priorities are to support and, at the right times, to propose new legislation. This provides them with an institutional power of inertia by refusing to attend sooner to certain policy problems in need of legislative attention.⁷² This power is especially relevant in cases where legislators inherently cannot anticipate unintended consequences and future problems that may develop with the adoption of a proposed law.⁷³

Aside from exogenous factors that create priority-driven inertia, coalition-driven inertia involves internal political dynamics.⁷⁴ The more cynical commentators claim that legislators deliberately choose not to make difficult policy decisions for political reasons.⁷⁵ Coalition-driven forms of inertia arise due to the dynamics of

relatively small minority, if those claims do not command strong majority support.”); DAVID R. MAYHEW, CONGRESS: THE ELECTORAL CONNECTION 116–17 (1974) (discussing the scope of time and energy devoted to constituency services).

⁶⁹ See Richard Pierce, *Institutional Aspects of Tort Reform*, 73 CALIF. L. REV. 917, 919 (1985) (surveying the different reasons for legislative inertia).

⁷⁰ See *id.* (noting representatives have limited time to be prepared and to ensure the interests of constituents are met).

⁷¹ *Id.*

⁷² See Maxwell L. Stearns, *Standing Back from the Forest: Justiciability and Social Choice*, 83 CALIF. L. REV. 1309, 1319 (1995) (“[L]egislatures are free not to decide issues presented to them for consideration in the form of bills. In other words, legislatures, unlike courts, have the institutional power of inertia.” (footnote omitted)).

⁷³ See Kenneth Culp Davis, *A New Approach to Delegation*, 36 U. CHI. L. REV. 713, 720 (1969) (arguing that agency policymakers “must decide many major questions that could not have been anticipated at the time of the statutory enactment” because of lawmakers’ inability “to write meaningful standards that will be helpful in answering such major questions”); Peter H. Aranson, Ernest Gellhorn & Glen O. Robinson, *A Theory of Legislative Delegation*, 68 CORNELL L. REV. 1, 23 (1982) (noting situations where Congress was unable “to anticipate the advent of a major structural innovation”).

⁷⁴ See Dixon, *supra* note 66, at 2210 (“Coalition-driven forms of inertia will arise in the legislative process as a result of . . . the dynamics of competition between political parties.”).

⁷⁵ See Pierce, *supra* note 69, at 919 (“More cynical observers claim that Congress chooses not to make hard policy decisions for political reasons.”).

competition between political parties.⁷⁶ The desire to appeal to a broader electoral base inherently promotes inertia by encouraging politicians to adopt a legislative agenda that does not divide party members.⁷⁷ Accordingly, legislators push aside and assign low priority to legislative changes that do not enjoy strong majority support.⁷⁸ Michael Perry claims that the “burden of legislative inertia” involves the difficult task “of capturing the attention of a sufficient number of legislators, of surviving various institutional hurdles (such as committee votes), [and] of winning the support of a majority of legislators” by those seeking either to enact or repeal a certain law.⁷⁹

Legislative inertia substantially limits statutory reform. It can block legislative change even if “no significant opposition” exists.⁸⁰ For example, if a legal rule is up for reauthorization in the future, coalition- and priority-driven inertia can disincentivize legislative action.⁸¹ This Article next demonstrates that legislative inertia can develop in the context of temporary legislation when statutory reassessment frequently happens. It begins by reflecting on a number of explanations invoked for the adoption of temporary legislation instead of a permanent law or mere legislative inaction.

B. A REMEDY AND ITS UNINTENDED PATH

Temporary legislation has provisions that fix the expiration of the law or regulation within a predetermined period.⁸² Such provisions automatically repeal the legislation when it is no longer

⁷⁶ See Rosalind Dixon, *A Democratic Theory of Constitutional Comparison*, 56 AM. J. COMP. L. 947, 968 (2008) (discussing coalition-driven inertia); *supra* note 74.

⁷⁷ See Dixon, *supra* note 66, at 2210 (“If party members . . . are divided on an issue, this can mean that legislative party leaders have an interest in keeping an issue off the legislative agenda—even in the face of clear demands for legal change . . .”).

⁷⁸ See Michael J. Perry, *Protecting Human Rights in a Democracy: What Role for the Courts?*, 38 WAKE FOREST L. REV. 635, 654–55 (2003) (noting that legislators avoid making decisions that will displease major constituencies).

⁷⁹ MICHAEL J. PERRY, MORALITY, POLITICS, AND LAW 304 (1988). *But see* Christopher H. Schroeder, *Prophets, Priests, and Pragmatists*, 87 MINN. L. REV. 1065, 1070 (2003) (pointing to the advantages of inertia “[i]n times of highly divisive environmental politics”).

⁸⁰ Nagle, *supra* note 1, at 1282–83.

⁸¹ See *id.* at 1282 (“If a statute is coming up for reauthorization in three years, that can operate as a disincentive against acting to solve a particular problem now.”).

⁸² See *supra* notes 8–13 and accompanying text.

necessary because it has fulfilled its purpose or achieved its desired effect.⁸³ Prior to its expiration, temporary legislation is subject to congressional evaluation to extend or repeal it.⁸⁴ The following Section will describe how temporary legislation was initially viewed as a way to improve public administration, tackle excessive bureaucracy, reverse legislative inertia, manage emergencies, and lessen regulatory pressures. Thereafter, it will reveal how unintended consequences ensure that temporary legislation may not always deliver its goal.

1. Temporary Legislation and its Promise. The idea of temporary legislation is not new. Thomas Jefferson strongly promoted legislative dynamism by proposing that all statutes and constitutions should last no more than nineteen years.⁸⁵ In the First Congress, James Madison proposed that the Impost Act, which imposed import taxes, should contain an expiration clause.⁸⁶ In their eyes, excessive stagnation and obsolescence were ill-favored, and the government's role was to balance competing concerns for continuity and change.⁸⁷ American political scientist Theodore Lowi is considered the "father" of the temporary legislation movement in regulations, statutes, and agency rules.⁸⁸ In his book *The End of*

⁸³ See, e.g., Julie Roin, *The Consequences of Undoing the Federal Income Tax*, 70 U. CHI. L. REV. 319, 334 (2003) (discussing the efficacy of zero-based budgeting rules as a way to eliminate ineffective programs); Eyal-Cohen, *supra* note 25, at 878 (discussing the birth, life, and death of the investment tax credit as a temporary tax program).

⁸⁴ See *supra* note 20 and accompanying text.

⁸⁵ Letter from Thomas Jefferson to James Madison (Sept. 6, 1789) ("Every constitution then, [and] every law, naturally expires at the end of 19 years. If it be enforced longer, it is an act of force, [and] not of right."), in 12 THE PAPERS OF JAMES MADISON 382, 385 (Charles F. Hobson & Robert A. Rutland eds., 1979).

⁸⁶ See Gazette of the United States (May 20, 1789) ("Mr. Madison observed, that it was incompatible with the spirit of the Constitution . . . to pass a revenue law unlimited [sic] in its duration . . ."), in 10 DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS OF THE UNITED STATES OF AMERICA 676, 676 (Charlene Bangs Bickford, Kenneth R. Bowling & Helen E. Veit eds., Johns Hopkins University Press 1992); see also Caleb Nelson, *Originalism and Interpretive Conventions*, 70 U. CHI. L. REV. 519, 540 & n.94 (2003) (reviewing the founders' debates and analyzing their justifications for rejecting the idea of perpetual laws).

⁸⁷ Nelson, *supra* note 86, at 541; see also Richard E. Myers II, *Responding to the Time-Based Failures of the Criminal Law Through a Criminal Sunset Amendment*, 49 B.C. L. REV. 1327, 1357–58 (2008) (reviewing the letter exchange between Jefferson and Madison regarding Jefferson's sunset proposal).

⁸⁸ See Lowi, *supra* note 9, at 27 (discussing the original intent behind Professor Lowi's idea of the "tenure of statutes").

Liberalism, he proposed enacting a “Tenure-of-Statutes Act” that would put a five- to ten-year termination date on all statutes that create federal administrative agencies.⁸⁹ Lowi believed his reform proposal furthered “juridical democracy” and combatted “interest-group liberalism.”⁹⁰ He proposed improving government efficiency and the integrity of laws by limiting the power that interest groups exerted over administrative agencies.⁹¹ Lowi suggested that a legislature should routinely obtain a renewed justification for laws as an agency’s termination date approached.⁹²

However, the idea of enacting expiring legislation was not the popular consensus. Instead, promoting stability and flexibility was prioritized through the practice of enacting statutes intended to persist indefinitely unless actively repealed.⁹³ Expiring legislation thereafter emerged as a reaction to general discontent with unrestrained governmental growth, excessive bureaucracy, and massive public spending.⁹⁴ The use of such legislation spiked during the early 1970s in response to the unprecedented growth in the number of administrative agencies and their powers.⁹⁵ The mid-1970s saw a steep rise in the enactment of expiring legislation at

⁸⁹ THEODORE J. LOWI, *THE END OF LIBERALISM: IDEOLOGY, POLICY, AND THE CRISIS OF PUBLIC AUTHORITY* 309 (1969).

⁹⁰ *Id.* at 311 (denoting interest-group liberalism as a public philosophy that creates clientelism via the broad expansion of public programs such as the New Deal).

⁹¹ *Id.* at 309–13.

⁹² *Id.* at 309.

⁹³ See Kysar, *supra* note 15, at 350–55 (describing the history of the sunset movement and noting that legislators in the 1970s who supported agency oversight did not necessarily back the idea of automatic expiration).

⁹⁴ See Frank H. Easterbrook, William N. Eskridge, Jr., Philip K. Howard, Thomas W. Merrill & Jeffrey S. Sutton, *Showcase Panel IV: A Federal Sunset Law: The Federalist Society 2011 National Lawyers Convention*, 16 *TEX. REV. L. & POL.* 339, 341 (2012) (statement of Prof. Thomas W. Merrill) (discussing Lowi’s “tenure of statutes” act idea and how a reform group, “Common Cause,” has seized it and changed it to a sunset laws movement); see also Mark B. Blicke, *The National Sunset Movement*, 9 *SETON HALL LEGIS. J.*, 209, 210–12 (1985) (noting that widespread disillusionment with government bureaucracy led to the popularization of sunset laws).

⁹⁵ See JAMES L. SUNDQUIST, *THE DECLINE AND RESURGENCE OF CONGRESS* 329–30 (1981) (noting that sunset legislation was a widely supported method to force increased oversight); Kysar, *supra* note 15, at 353 (“[Lowi’s] ideas became very influential in the mid-to-late 1970s during a period of fiscal hardships and pervasive doubt about the efficacy of government programs.”).

the state level via laws that were passed in hopes of abolishing redundant programs and agencies.⁹⁶

Notably, scholars have often discussed expiring legislation in the context of legislative entrenchment as representing a mirror image of two different approaches.⁹⁷ Legislative entrenchment denotes “the enactment of either statutes or internal legislative rules that are binding against subsequent legislative action in the same form.”⁹⁸ For example, an entrenching clause could require a supermajority to repeal a rule, which prevents a later legislature from rescinding the statute. In a similar manner, expiring legislation prohibits statutes from remaining in force when future legislatures do nothing or refuse to repeal it.⁹⁹ The anti-entrenchment doctrine—which holds that legislatures cannot make irreversible policies—supports temporary legislation as a mechanism to avert entrenchment.¹⁰⁰

Accordingly, lawmakers viewed temporary legislation as furthering the principle of separation of powers by limiting the legislative powers of Congress to shorter periods and mandating

⁹⁶ See Kysar, *supra* note 15, at 354 (“By the early 1980s, thirty-five states had adopted broad sunset laws.”).

⁹⁷ See Eric A. Posner & Adrian Vermeule, *Legislative Entrenchment: A Reappraisal*, 111 YALE L.J. 1665, 1665–66 (2002) (maintaining that entrenchment is the mirror image of expiring legislation, thus the anti-entrenchment doctrine is inconsistent with Congress’s undisputed authority to enact temporary laws). *But see* Listokin, *supra* note 9, at 535 (explaining, in contrast to Posner and Vermeule, “why entrenchment is barred while sunset clauses are legitimate from an economic perspective”).

⁹⁸ Posner & Vermeule, *supra* note 97, at 1667; *see also* *Newton v. Comm’rs*, 100 U.S. 548, 559 (1879) (“Every succeeding legislature possesses the same jurisdiction and power with respect to them as its predecessors. The latter have the same power of repeal and modification which the former had of enactment, neither more nor less.”); 1 WILLIAM BLACKSTONE, COMMENTARIES *90 (“Acts of parliament derogatory from the power of subsequent parliaments bind not.”).

⁹⁹ See Posner & Vermeule, *supra* note 97, at 1697 (discussing “a handful of congressionally enacted rules that attempt to control the courts’ interpretation of enactments by subsequent Congresses”).

¹⁰⁰ See, e.g., John C. Roberts & Erwin Chemerinsky, *Entrenchment of Ordinary Legislation: A Reply to Professors Posner and Vermeule*, 91 CALIF. L. REV. 1773, 1784–85 (2003) (“A sunset clause frees future legislatures from being constrained even by the existence of a law. The new legislature in essence gets to decide *de novo* how to proceed. That is exactly the opposite of entrenchment, which restricts the ability of a future legislature to decide at all.” (footnote omitted)).

reconsideration and reapproval.¹⁰¹ They used temporary legislation to curb legislative inertia by conferring a temporary and dynamic character to law.¹⁰² The sustained legitimacy of a rule or a program depends upon a succeeding legislative decision. Placing temporal limits and dispositions on a legal rule or agency curbs the duration of government powers and guarantees more frequent dialogue between a legislature and its constituents.¹⁰³ By confirming that laws and rules will be either terminated or reevaluated, expiring provisions are viewed as improving political accountability and transparency.¹⁰⁴ They can avert inertia and status quo bias by compelling reexamination of inefficient laws.¹⁰⁵

Harmonizing these ideas, expiring legislation has been used to restore legislative oversight. All statutes that change the legal status quo de facto shift the burden of inertia from the enacting legislature to future legislatures.¹⁰⁶ The operation of temporary legislation dictates habitual reevaluation. These periodic determinations pressure future legislatures to decide by a specific date whether a particular rule, program, or agency should persist.¹⁰⁷ These evaluations should look into the effects of the legislation and

¹⁰¹ See Richard C. Kearney, *Sunset: A Survey and Analysis of the State Experience*, 50 PUB. ADMIN. REV. 49, 55–56 (1990) (studying the extent to which states actively utilize and review expiring legislation and suggesting “[t]he utility of Sunset as a legislative oversight mechanism”).

¹⁰² See Doran, *supra* note 11, at 293 (noting the responsibility of lawmakers to consider how fiscal policy will affect those in the future, but also that “we have no good answers”).

¹⁰³ Cf. Gersen, *supra* note 13, at 298 (“The [temporary] legislative form produces both informational and distributive benefits, which affect the selection of optimal public policy and the distribution of authority in government.”).

¹⁰⁴ See Davis, *supra* note 20, at 406 (concluding that accountability is improved in laws with expiring provisions).

¹⁰⁵ See, e.g., *supra* note 17 (outlining the assault weapon ban, the Violence Against Women Act, and the government surveillance portions of the USA PATRIOT ACT as examples of temporary legislation that expired and were not reauthorized); see also Listokin, *supra* note 9, at 551 (noting that expiring provisions can prevent inertia in inefficient corporate contract provisions).

¹⁰⁶ See Posner & Vermeule, *supra* note 97, at 1697 (comparing temporary legislation and the anti-entrenchment doctrine); Gersen, *supra* note 13, at 262–63 (discussing temporary legislation transaction costs and their allocation between current and future legislatures).

¹⁰⁷ See Mark D. Young, *A Test of Federal Sunset: Congressional Reauthorization of the Commodity Futures Trading Commission*, 27 EMORY L.J. 853, 854 (1978) (“‘Sunset’ is the popular term for a statutory method of forcing a legislature to make a periodic determination whether to allow a particular program or agency to continue.”).

whether its objectives are being met efficiently. Those requesting an extension to avoid a technical renewal process bear the burden of proof to renew the legislation post-expiration. Consequently, temporary legislation helps balance the need to adapt to rapidly changing conditions and to maintain the proper legislative oversight.

Temporary legislation can also be used to modernize the law by updating obsolete laws or by eradicating redundant ones. Social practices and perceptions change over time, and what was considered unacceptable in the past may be commonly acknowledged today.¹⁰⁸ For example, federal criminal laws still prohibit shooting a fish from an airplane,¹⁰⁹ selling Swiss cheese with too few holes,¹¹⁰ and consulting with a pirate.¹¹¹ Temporary legislation can help maintain the balance between continuity and change while avoiding errors and obsolescence via reexamination.¹¹² Laws with expiring provisions prevent a past majority from perpetuating its dominion by shifting the power to those who oppose those laws and requiring legislative action, rather than inaction, to maintain them.¹¹³ Expiring legislation thereby imposes fiscal and political costs on future legislatures seeking to preserve the consequences of the earlier acts. It places the burden of legislative action “on those who wish to retain” a legal rule “rather than on

¹⁰⁸ See *supra* note 2 (referring to various sources of over 800 obsolete rules and regulations that criminalize obscure behavior and are currently still in effect).

¹⁰⁹ A Crime a Day (@CrimeADay), TWITTER (Feb. 1, 2019, 7:08 PM), <https://twitter.com/CrimeADay/status/1091488611269332993> (citing 16 U.S.C. § 742j-1(a)(1)).

¹¹⁰ A Crime a Day (@CrimeADay), TWITTER (Feb. 15, 2016, 8:47 PM), <https://twitter.com/CrimeADay/status/699409673615712256> (citing 21 U.S.C. §§ 331, 333, 343(g) and 21 C.F.R. § 133.195(a)(1)).

¹¹¹ A Crime a Day (@CrimeADay), TWITTER (Dec. 6, 2015, 7:31 PM), <https://twitter.com/CrimeADay/status/673661122273263616> (citing 18 U.S.C. § 1657).

¹¹² See Nathan Cortez, *Regulating Disruptive Innovation*, 29 BERKELEY TECH. L.J. 175, 219 (2014) (“[Temporary legislation] decrease[s] the costs of premature or incorrect regulation by time-limiting the damage they can inflict.”).

¹¹³ See CALABRESI, *supra* note 1, at 61 (“It . . . deprives a past majority of the benefit of inertia and gives it to those who object to the laws.”).

those who wish to modify or destroy it.”¹¹⁴ That way, inertial forces might not “serve the dead hand of the past.”¹¹⁵

Professor Yair Listokin views the practice of expiring provisions as Congress recognizing that greater flexibility is needed than is the norm in that policy area.¹¹⁶ On the other hand, when greater stability is needed, ordinary statutes seem to achieve that result.¹¹⁷ According to Listokin, all policies are, in a way, temporary because new policies replace them.¹¹⁸ Expiring legislation merely decreases *ex ante* the cost of changing policies by reversing the law by default.¹¹⁹ Temporary laws make policies more reversible in the search for optimal legislation. Listokin views them as “unambiguously positive,” as they enhance efficient policymaking while justifying the adoption of policies with negative expected value.¹²⁰ In his opinion, temporary legislation should be encouraged and used more to allow lawmakers to reduce legislative costs, gain practical knowledge, and learn about the benefits of a bill before committing to irreversible costs.¹²¹ Legislators may be more inclined to adopt temporary legislation and gather more evidence on risks and effects during the interim period between enactment and expiration before committing to a permanent new policy.¹²²

¹¹⁴ *Id.* at 60.

¹¹⁵ *Id.* at 60, 62 (noting that the expiring legislation mechanism does not guarantee anachronistic laws will not get reenacted because “[t]ime does not serve as a good indicator of age” and noting that “[i]t does not distinguish sufficiently between those [legal rules] in need of reconsideration because they have become anachronistic and those” that are not).

¹¹⁶ Listokin, *supra* note 9, at 536.

¹¹⁷ See Posner & Vermeule, *supra* note 97, at 1672 (“The ‘default’—that statutes persist until repealed—creates a compromise between stability and flexibility, but this balance is more appropriate for some policy areas than others. Indeed, Congress recognizes as much when it provides certain statutes with sunset provisions, reflecting the view that greater flexibility than the norm is needed in that policy area.”).

¹¹⁸ See Listokin, *supra* note 9, at 535 (“In some sense, almost all policies have sunset clauses—policies automatically lapse when new policies on the same subject are instituted.”).

¹¹⁹ See *id.* (“Sunset clauses therefore enhance the reversibility of policies.”).

¹²⁰ *Id.* at 536 (“Suppose that there are multiple policies that should be tried in a given order under the optimal search approach. Passing each of these policies in succession would be costly. . . . These costs may well prevent policymakers from choosing policies according to the optimal search approach’s prescriptions.”).

¹²¹ *Id.*

¹²² See *id.* at 533 (discussing the advantage of temporary legislation in the optimal legislative search process); see also Gersen, *supra* note 13, at 248 (noting the information benefits and error costs saved via temporary legislation).

A prominent illustration of this view is the use of temporary legislation to regulate crises. Wars, natural disasters, and threats to public order are exigencies that require swift lawmaking. The most notable type of temporary legislation in such circumstances is “emergency legislation.”¹²³ Emergencies tend to be temporary and thus necessitate measures that terminate when the exigency ends. To guarantee the discontinuance of an exceptional rule, temporary legislation is used to prevent normalization of a state of emergency and to enable legislatures to return to normalcy.¹²⁴ Accordingly, scholarly literature has viewed the use of temporary legislation as a good compromise during the suspension of constitutional protections in light of severe emergencies.¹²⁵ It provides a form of legislative oversight of emergency powers, restrains extraordinary measures from being standardized, and contributes to building consensus around potentially controversial measures.

Counterterrorism legislation is a prominent case study of such temporary legislation. In counterterrorism legislation, an inevitable tension emerges between democratic process and prompt response to emergencies.¹²⁶ In times of grave national peril, the government tends to concentrate authority and power to gain control of the situation.¹²⁷ The government may limit fundamental rights guarantees and enact possibly extreme measures to protect citizens against perceived severe threats.¹²⁸ Temporary emergency

¹²³ Bruce Ackerman, *The Emergency Constitution*, 113 YALE L.J. 1029, 1058 (2004).

¹²⁴ See *id.* at 1037, 1047 (arguing temporary legislation is a good solution to the tension between the state of emergency and individual constitutional rights); cf. Oren Gross, *Chaos and Rules: Should Responses to Violent Crises Always Be Constitutional?*, 112 YALE L.J. 1011, 1090 (2003) (noting that emergency legislation may become “normalized and made routine” and claiming that temporary legislation is not an effective rule to deal with emergencies).

¹²⁵ See William N. Eskridge, Jr. & John Ferejohn, *The Article I, Section 7 Game*, 80 GEO. L.J. 523, 529–32 (1992) (maintaining that temporary legislation provides a good outlet for political compromise).

¹²⁶ Cf. Ackerman, *supra* note 123, at 1039 (“Terrorist threats do *not* trigger the existential rationale, but require the articulation of a different framework for emergency power.”).

¹²⁷ See, e.g., Paul M. Schwartz, *Reviving Telecommunications Surveillance Law*, 75 U. CHI. L. REV. 287, 305 (2008) (discussing the lack of limits on the FBI’s new power resulting from laws enacted in response to the September 11th attacks).

¹²⁸ See Gross, *supra* note 124, at 1023 (“[T]here may be circumstances where the appropriate method of tackling grave dangers and threats entails going outside the constitutional order, at times even violating otherwise accepted constitutional principles, rules, and norms.”).

legislation provides a safeguard and may resolve some of this tension.¹²⁹ Emergency legislation typically expires after a specified date unless the government renews the legislation or replaces it with new laws through the normal legislative process.¹³⁰ In the aftermath of the September 11th terrorist attacks, there has been a huge increase in the use of temporary legislation to tackle international terrorism.¹³¹ The USA PATRIOT ACT was passed swiftly and contained many expiring provisions that supposedly limited the Act's impact on constitutional rights.¹³² This temporary legislation provided a mechanism to limit the duration of a hastily adopted law through extraordinary delegation to the executive branch, to deliver opportunities for gathering empirical data, and to conduct policy reassessment after a set period.¹³³

Achieving consensus around contentious legislation is not easy. Alienated lawmakers and political resistance create high hurdles to ensure continuity of legal regimes.¹³⁴ Temporary legislation provides opportunities for political haggling and reaching consensus

¹²⁹ See Ackerman, *supra* note 123, at 1045 (“Bad legal structures will channel temporary needs for reassurance into permanent restrictions on liberty; good structures will channel them into temporary states of emergency, without permanent damage to fundamental freedoms.”).

¹³⁰ See, e.g., Antonios Kouroutakis & Sofia Ranchordás, *Snoozing Democracy: Sunset Clauses, De-Juridification, and Emergencies*, 25 MINN. J. INT’L L. 29, 53 & nn.110–12 (2016) (citing the United Kingdom Parliament’s reasoning for adoption of temporary emergency legislation).

¹³¹ See Emily Berman, *The Paradox of Counterterrorism Sunset Provisions*, 81 FORDHAM L. REV. 1777, 1790 (2013) (arguing that the high expectations for post-9/11 counterterrorism temporary legislation have not been borne out in terms of results).

¹³² Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001, Pub. L. No. 107-56, § 224, 115 Stat. 272, 295 (including a sunset provision whereby certain provisions of the Act would “cease to have effect on December 31, 2005”).

¹³³ See Berman, *supra* note 131, at 1824 (describing the enactment of the USA PATRIOT ACT and noting that the House agreed to vote on the bill “on the condition that it would be temporary legislation”); John E. Finn, *Sunset Clauses and Democratic Deliberation: Assessing the Significance of Sunset Provisions in Antiterrorism Legislation*, 48 COLUM. J. TRANSNAT’L L. 442, 485 (2010) (reviewing the enactment of the USA PATRIOT ACT, stating that temporary legislation “appear[s] when there are concerns about the potential abuse of newly adopted powers and a corresponding desire for legislative oversight”).

¹³⁴ See Forrest Maltzman & Charles R. Shipan, *Change, Continuity, and the Evolution of the Law*, 52 AM. J. POL. SCI. 252, 254–55 (2008) (claiming that expiring legislation is important for building coalitions in times of political divide).

among legislators fearing the potential long-term negative effects of certain laws.¹³⁵ Representatives who oppose a particular law will be more amenable to passing “erase and rewind” laws that provide some default assurance that the law will expire and reinstate the previous status quo.¹³⁶ To conclude, temporary legislation is instrumental in reaching political compromise, facilitating experimentation, gathering information, and assessing risk.

2. *Criticism and Increased Inertia.* In the past few years, academics have criticized temporary legislation. They have condemned the routine extension of temporary legislation without meaningful evaluation.¹³⁷ Instead of expiring after its designated date, temporary legislation more frequently is extended and expanded numerous times.¹³⁸ Scholars have argued that the number of expiring provisions is too excessive and that they are counterproductive, create a disproportional review burden, and increase statutory uncertainty.¹³⁹ Temporary legislation has been viewed by these scholars as serving primarily as a mechanism to pressure opponents of a controversial bill to vote in favor of a temporary version.¹⁴⁰ Others have described these laws as

¹³⁵ See *id.* at 257 (discussing coalition building for statutes lacking overwhelming support).

¹³⁶ See Tom Ginsburg, Jonathan S. Masur & Richard H. McAdams, *Libertarian Paternalism, Path Dependence, and Temporary Law*, 81 U. CHI. L. REV. 291, 337 (2014) (analyzing the political advantages of temporary legislation).

¹³⁷ See, e.g., *supra* note 15 and accompanying text.

¹³⁸ For example, The Violence Against Women Act of 1994 has been extended three times and is currently pending reauthorization. See *supra* note 17; see also Yin, *supra* note 11, at 232–33 (reviewing the history of some temporary tax legislation and its repeated extension); Rebecca M. Kysar, *Lasting Legislation*, 159 U. PA. L. REV. 1007, 1016 (2011) (“Congress renews the vast majority of [tax] extenders upon the sunset date or shortly thereafter on a retroactive basis.”).

¹³⁹ See Kysar, *supra* note 15, at 369, 396 (discussing negative consequences of temporary tax legislation).

¹⁴⁰ See Rebecca M. Kysar, *Dynamic Legislation*, 167 U. PA. L. REV. 809, 827 (2019) (“The uncertainty they create disrupts the planning activities of public and private actors, increasing compliance costs and distorting investment decisions.”); Berman, *supra* note 131, at 1824 (“Compromises are therefore easier to reach for legislation with a sunset than for long-term legislation.”). But see Jacob E. Gersen & Eric A. Posner, *Timing Rules and Legal Institutions*, 121 HARV. L. REV. 543, 562 (2007) (“Sunset clauses, providing for automatic repeal of the statute, sometimes indicate that Congress is uncertain whether a statute will be beneficial.”).

“democracy snooze buttons.”¹⁴¹ Instead of countering legislative obsolescence, temporary legislation postpones the decisions to a later date.¹⁴²

Expiring legislation has also been described as inefficient, expensive, and contributing to standardizing extraordinary measures.¹⁴³ Many expiring laws have been reauthorized numerous times so as to have the effect of permanency.¹⁴⁴ The repeated extensions of counterterrorism and fiscal legislation are classic examples of temporary laws that became entrenched and that now receive minimal reexamination.¹⁴⁵ Calabresi warned that without substantive review, temporary legislation will “defeat itself.”¹⁴⁶ Legislators can create legislative procedures (such as acts extending

¹⁴¹ See David A. Fahrenthold, *In Congress, Sunset Clauses are Commonly Passed but Rarely Followed Through*, WASH. POST. (Dec. 15, 2012), https://www.washingtonpost.com/politics/in-congress-sunset-clauses-are-commonly-passed-but-rarely-followed-through/2012/12/15/9d8e3ee0-43b5-11e2-8e70-e1993528222d_story.html (“Washington’s current crisis reveals that the sunset clause has become something unintended: democracy’s snooze button.”); see also Frank Fagan & Saul Levmore, *Legislative Sunrises: Transitions, Veiled Commitments, and Carbon Taxes* (criticizing temporary legislation for its effects on democracy), in *THE TIMING OF LAWMAKING* 130, 143 (Frank Fagan & Saul Levmore eds., 2017); cf. Daniel E. Herz-Roiphe & David Singh Grewal, *Make Me Democratic, But Not Yet: Sunrise Lawmaking and Democratic Constitutionalism*, 90 N.Y.U. L. REV. 1975, 2003–04 (2015) (viewing expiring legislation as a “democratic deficit”).

¹⁴² See Kysar, *supra* note 15, at 378 (noting that temporary legislation was “regarded as inevitable” in budget reconciliation).

¹⁴³ See Kysar, *supra* note 138, at 1051–65 (discussing the disadvantages of temporary legislation); see also Cheryl D. Block, *Pathologies at the Intersection of the Budget and Tax Legislative Processes*, 43 B.C. L. REV. 863, 874 (2002) (criticizing the use of expiring legislation as a gimmick to circumvent budget rules).

¹⁴⁴ See Kysar, *supra* note 15, at 379–80 (noting the functional permanency of temporary tax legislation). But see Jeffrey J. Rachlinski & Cynthia R. Farina, *Cognitive Psychology and Optimal Government Design*, 87 CORNELL L. REV. 549, 603–06 (2002) (noting that expiring legislation can be beneficial in affording frequent examination of rules that the public considers to be the status quo).

¹⁴⁵ See Gross, *supra* note 124, at 1090–91 (noting that expiring legislation increases the risk of normalizing emergency legislation); see also Berman, *supra* note 131, at 1781 (arguing that expiring legislation is inappropriate for dealing with terrorist threats because the reconsideration is not substantial and is not made with fully informed policy).

¹⁴⁶ See CALABRESI, *supra* note 1, at 61–62 (“[W]e would be right back where we started, with obsolete laws being automatically reenacted under a special procedure, much as today some fiscal statutes, which could give an occasion for reconsideration of the programs they fund, are treated so as to make any substantive review unlikely.”).

numerous sunset provisions in bulk) that treat the periodic reexamination as a mere formality.¹⁴⁷

Several theories of democracy highlight the significance of deliberation by legislators and citizens in the political process, rather than emphasizing the mere aggregation of preferences.¹⁴⁸ Deliberative democracy is important because preferences change over time. The central problems of democratic government, as pointed out by the Founders, were the influence of factions (interest groups) and the self-interested incentives of representatives during congressional deliberation.¹⁴⁹ Accordingly, scholars viewed an integral part of defending democracy to be opposing political interests by rebuking the influence of technocratic elites on legislators.¹⁵⁰ Indeed, scholars have described the interaction between legislators and interest groups around expiring legislation as a rent-extracting mechanism.¹⁵¹ Using public choice theory, experts have argued that politicians and special interest groups began using temporary legislation as a “guise” in order to pass bills that otherwise would not obtain sufficient support.¹⁵²

¹⁴⁷ See *id.* at 61 (“[I]t would be but a short step to a legislative procedure that would treat the periodic reexamination or reenactment as a mere form.”).

¹⁴⁸ See Posner & Vermeule, *supra* note 97, at 1692 (“Laws do not (or should not) simply aggregate preferences; they should emerge from a deliberative process involving citizens and legislators, in which preferences change in response to argument and experience.”).

¹⁴⁹ See THE FEDERALIST NO. 51, at 324 (James Madison) (Clinton Rossiter ed., 1961) (describing how “the multiplicity of interests” and “the multiplicity of sects” can prevent the concentration of power); see also Cass R. Sunstein, *Interest Groups in American Public Law*, 38 STAN. L. REV. 29, 43–45 (1985) (providing a thorough account of the Madisonian ideas regarding the influence of factions).

¹⁵⁰ See DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 10–11 (1991) (expressing concern for the influence of political interest groups on legislators in light of Madisonian ideas).

¹⁵¹ See John W. Lee & W. Eugene Seago, *Policy Entrepreneurship, Public Choice, and Symbolic Reform Analysis of Section 198, the Brownfields Tax Incentive: Carrot or Stick or Just Never Mind?*, 26 WM. & MARY ENVTL. L. & POL’Y REV. 613, 636 (2002) (noting temporary laws increase legislators’ rent-seeking opportunities). For examples of the rent-extracting issues associated with sunsets, see Kysar, *supra* note 15, at 339–40; Kysar, *supra* note 138, at 1043; Viswanathan, *supra* note 13, at 680; cf. Gersen, *supra* note 13, at 285 (“Temporary measures could produce less rent seeking in the aggregate because the prize for winning a statute is less valuable.”).

¹⁵² See Viswanathan, *supra* note 13, at 658 (arguing that sunsets result from “political maneuvering” to enact “permanent legislation under the guise of an ostensible expiration date”); Edward D. Kleinbard, *The Congress Within the Congress: How Tax Expenditures*

In the field of tax law, Professor Rebecca Kysar noted that many sunset clauses were added to the tax code during the George W. Bush Administration as gadgets to underestimate the real revenue cost of legislation and fit it within budget constraints.¹⁵³ Because the estimation of revenue costs of permanent tax provisions is too high for Congress to pass them, temporary provisions are used to bypass that issue by taking into account only the revenue costs during the period up until expiration.¹⁵⁴ Alas, the intention remains to perpetuate this temporary legislation, thus indirectly circumventing budget constraints.¹⁵⁵

The consensus-gathering feature of expiring legislation has turned into one of its central points of criticism.¹⁵⁶ Evaluations of legislation close to the expiration date became too cumbersome, making the renewal process autogenetic and technical.¹⁵⁷ Some scholars have viewed temporary legislation as a political shortcut to the traditional congressional legislative process and as delaying

Distort Our Budget and Our Political Process, 36 OHIO N.U. L. REV. 1, 24 (2010) (“I do not agree that temporary-effect legislation will reduce the present value of tax subsidies to legislators angling for campaign contributions when viewed through the prism of ‘interest-group’ theory.”).

¹⁵³ See Kysar, *supra* note 140, at 853 (explaining how the Bush tax cuts were a “fiscal illusion” because they “would likely be renewed without full accounting of their costs”); Kysar, *supra* note 138, at 1040–41 (noting how legislators analyzed costs of legislation outside of the budget window when considering the Bush tax cuts).

¹⁵⁴ But see Kysar, *supra* note 138, at 1041 (“[I]nterest groups, constituents, and political ideology may spur congressional members to heed the full costs of legislation and to downplay misleading official costs—thus reconciling, to an extent, the accounting differences between temporary and lasting legislation.”).

¹⁵⁵ See Kysar, *supra* note 140, at 854 (“[B]udget rules that Congress created were later circumvented when Congress found the pressure to deliver legislative benefits too great.”); Kysar, *supra* note 138, at 1019 (“Reconciliation . . . also induces legislators to use sunset provisions.”).

¹⁵⁶ See Posner & Vermeule, *supra* note 97, at 1692 (explaining how sunset provisions only work when the current Congress can achieve consensus); see also Chris Mooney, *A Short History of Sunsets*, LEGAL AFF. (Jan.–Feb. 2004), https://www.legalaffairs.org/issues/January-February-2004/story_mooney_janfeb04.msp (criticizing temporary legislation for becoming “a clever political trap”).

¹⁵⁷ See Kysar, *supra* note 138, at 1066 (explaining some difficulties with renewal of temporary legislation); Mooney, *supra* note 156 (providing an example of how sunset provisions can trap later legislators into renewal).

discussions to the moment of expiration.¹⁵⁸ These repeated extensions with minimal or no reevaluation effectively have increased legislative inertia.¹⁵⁹ But why has expiring legislation maintained such strong institutional bias in favor of the temporary status quo?

While discussing entrenching statutes, Posner and Vermeule commented in passing that earlier legislatures always have greater power than later ones by virtue of making policy choices that de facto become entrenched through path dependence and inertia.¹⁶⁰ The next Part will delve into the theoretical underpinnings and dynamic forces encompassing temporary legislation that create conditions for path dependency and inertia.

III. PATH DEPENDENCE THEORY

Inertia is the final stage in a path dependent sequence, namely a situation of “lock-in.”¹⁶¹ Yet, path dependence theory entails more dynamics than just a structural status quo.¹⁶² First, one must understand this theoretical framework before applying it to the legal context and, specifically, to temporary legislation.

Previous choices can influence our current selections, regardless of whether conditions today still warrant them.¹⁶³ The QWERTY

¹⁵⁸ See Gersen, *supra* note 13, at 268 (asserting that “temporary legislation allows long-term policy commitments to be delayed”); Kysar, *supra* note 138, at 1028 (claiming that the history of temporary legislation demonstrates the political pressures for spending and tax cuts lead to manipulation by legislators); see also Stephen Coate & Stephen Morris, *Policy Persistence*, 89 AM. ECON. REV. 1327, 1328 (1999) (noting the significance of status quo bias as political pressure on legislators builds).

¹⁵⁹ See Posner & Vermeule, *supra* note 97, at 1696–97 (“The problem is that any statute changes the legal status quo and thereby shifts the burden of inertia from the enacting legislature to future legislatures.”).

¹⁶⁰ See *id.* at 1676 (“[U]pstream legislatures always have greater de facto power than downstream ones, simply by virtue of drawing on a slate that is more nearly blank. They make policy choices that become entrenched de facto through path dependence and inertia.”).

¹⁶¹ See generally S.J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205 (1995) (defining path dependence and lock-in at length).

¹⁶² See, e.g., MICHAEL T. HANNAN & JOHN FREEMAN, *ORGANIZATIONAL ECOLOGY* 70, 77 (1989) (describing “structural inertia” in organizations as involving the comparisons of rates of change and resistance to structural change).

¹⁶³ See Liebowitz & Margolis, *supra* note 161, at 222–23 (discussing the role the past plays in current economic conditions).

typewriter is cited as one of the most notable examples of both path dependence and network effects.¹⁶⁴ Created in 1873, the QWERTY keyboard layout has been so entrenched by users over the years that it continues to dominate the market despite the existence of better layouts.¹⁶⁵ This example illustrates a path that has become so entrenched that the cost of switching to a different route has become prohibitive.

Scholars have used path dependence theory to explain unique present-day phenomena.¹⁶⁶ Economist Paul David argued that understanding the rationale (or lack thereof) for the world around us is difficult unless we investigate *how* we arrived at this state.¹⁶⁷ W. Brian Arthur, who developed the modern economic approach to path dependence, has hypothesized that the theory encompasses knowledge-based industries with strong externalities.¹⁶⁸ He describes path dependence as “lock-in through learning” but claims that small differences in early patterns or “historical events” may result in path divergence and will often produce large variations in final outcomes.¹⁶⁹

Identifying path dependence involves tracing a given result back through a chain of chronicled events that are unforeseen and cannot

¹⁶⁴ See Paul A. David, *Clio and the Economics of QWERTY*, 75 AM. ECON. REV. 332, 332–36 (1985) (describing the entrenchment of the QWERTY keyboard layout over more efficient alternatives); William J. Kolasky, *Network Effects: A Contrarian View*, 7 GEO. MASON L. REV. 577, 580 (1999) (noting the circumstances of the QWERTY typewriter and different alternatives over the years).

¹⁶⁵ See David, *supra* note 164, at 333–34 (describing the history of the QWERTY typewriter and other options available throughout the years and why those options were not adopted). See generally CHARLES E. WELLER, *THE EARLY HISTORY OF THE TYPEWRITER* (1918).

¹⁶⁶ See, e.g., Roe, *supra* note 27, at 644–46 (using the American corporate structure’s history to argue that the possibility of breaking out of a lock-in situation lies in the overall efficiency and strength of the pattern created in the past); Lim, *supra* note 29, at 508 (“Consumers become ‘locked in’ to the product because of switching costs associated with moving from one network to another.”); see also Máximo Langer, *The Rise of Managerial Judging in International Criminal Law*, 53 AM. J. COMP. L. 835, 908 n.369 (2005) (“Path dependence processes may lock institutions into alternatives that are less efficient or optimal than others.”).

¹⁶⁷ See David, *supra* note 164, at 332 (“[I]t is sometimes not possible to uncover the logic (or illogic) of the world around us except by understanding how it got that way.”).

¹⁶⁸ See W. Brian Arthur, *Competing Technologies, Increasing Returns, and Lock-In by Historical Events*, 99 ECON. J. 116, 126 (1989) (describing, for instance, the path dependence of the nuclear industry).

¹⁶⁹ *Id.* at 126, 128.

be classified solely based on prior historical conditions.¹⁷⁰ Some of those cases have unique and unpredictable outcomes.¹⁷¹ The following provides some basic definitions of the various elements of path dependence along with clarifying illustrations. The scholarship on path dependence recognizes several dominant dynamics that contribute to the conservation of a route: critical junctures, reactive sequences, self-reinforcement, increasing returns, positive feedback, and lock-in.¹⁷²

A. REACTIVE SEQUENCES AND CRITICAL JUNCTURES

Does the order and correlation between historical events matter to the creation of the path? Economist Douglas Puffert claims a notable characteristic of a path-dependent process is the incidence of reactive sequences.¹⁷³ He states that a process of economic allocation is considered path dependent when the sequence of allocations relies “not only on fundamental, a priori determinants . . . but also on particular contingent events.”¹⁷⁴

¹⁷⁰ For example, in the Polya urn experiment, two balls—one red and one black—were placed in a large urn. The experiment proceeded by removing one ball and returning it to the urn accompanied by an additional ball of the same color. This process was repeated until the urn was full. The experiment demonstrated that an early draw, although random, had an increasing effect on the final result. See Mahoney, *supra* note 21, at 510–11 (describing the Polya urn experiment).

¹⁷¹ See, e.g., Greg Hill, *History, Necessity, and Rational Choice Theory*, 9 RATIONALITY & SOC'Y 189, 198–200 (1997) (describing an experiment with a “Polya coin” which shows the effects initial outcomes have on latter ones).

¹⁷² See Scott E. Page, *Path Dependence*, 1 Q.J. POL. SCI. 87, 88 (2006) (identifying conditions for path dependence in an economy that faces different technological choices).

¹⁷³ See Puffert, *supra* note 26, at 63 (discussing how economic allocation is determined by both initial factors and subsequent contingent events); Douglas Puffert, *Path Dependence*, EH.NET, <https://eh.net/?s=path+dependence> (last visited Mar. 12, 2021) (further describing path dependency and the effect of subsequent contingent events). Page distinguished between path dependency and *phat* dependency. Page, *supra* note 172, at 89. He claimed that, in a *phat*-dependent process, the order of events does not matter. *Id.* He exemplified the Polya Process as being *phat*-dependent and not path-dependent because, in that experiment, the order in which balls are taken out of the urn does not matter. See *id.* at 91 (“[O]utcomes in the . . . Polya Process do not depend on the order of past events. They only depend on the distribution over those events. Put in the formal language of this paper: the Polya Process is *phat*-dependent but not *path*-dependent.”).

¹⁷⁴ Puffert, *supra* note 26, at 63. These determinants include “technology, factor endowments, preferences, and institutions.” *Id.*

Reactive sequences are series of causally connected events that are “reactive,” as each occurrence is partly “a reaction to temporally antecedent events.”¹⁷⁵ Accordingly, each event is “dependent” on prior steps or occurrences to form the path of an outcome.¹⁷⁶ The difference between a reactive sequence with observed path-dependent trajectory and a simple chain of causally connected events lies in the historical, critical juncture that set the chain in motion.¹⁷⁷ In a reactive sequence, early significant events trigger other events, not by repeating a given pattern, but by initiating a series of firmly *connected* reactions and counterreactions.¹⁷⁸ How can we observe a chain of interconnected occurrences in the lawmaking context?

The legislative process encompasses several reactive sequences. For example, representatives sponsor a legislative proposal and then the bill is assigned to a committee for study.¹⁷⁹ After approval by the committee, the bill is put to a vote and, if passed by a majority of the House, moves to the Senate.¹⁸⁰ In the Senate, the bill is assigned to another committee, voted on by that committee and, if passed, prompts the creation of a conference committee of House and Senate representatives, which reconciles differences between the two versions of the bill.¹⁸¹ The reconciled bill is brought for final approval at the House and Senate and for presentation.¹⁸² The President then has ten days to sign or veto the enrolled bill.¹⁸³ Other than executive orders, the President cannot sign a bill into effect if

¹⁷⁵ Mahoney, *supra* note 21, at 509.

¹⁷⁶ *Id.* at 510.

¹⁷⁷ *See id.* (arguing path-dependent processes must have properties of contingency marked by a process of inherent sequentiality).

¹⁷⁸ *See* Paul Pierson, *Not Just What, but When: Timing and Sequence in Political Processes*, 14 *STUD. AM. POL. DEV.* 72, 85 (2000) (claiming that initial disturbances are crucial because they trigger “action and reaction [that] shift the system in a new direction”).

¹⁷⁹ *See* CHARLES W. JOHNSON, *HOW OUR LAWS ARE MADE*, H.R. DOC. NO. 108-93, at 8–16 (2003), <https://www.govinfo.gov/content/pkg/CDOC-108hdoc93/pdf/CDOC-108hdoc93.pdf> (describing in detail the legislative process in the United States).

¹⁸⁰ *Id.* at 27–38.

¹⁸¹ *Id.* at 42–45.

¹⁸² *Id.* at 50.

¹⁸³ U.S. CONST. art. I, § 7, cl. 2; *see also* *The Legislative Process*, U.S. HOUSE OF REPRESENTATIVES, <https://www.house.gov/the-house-explained/the-legislative-process> (last visited Mar. 12, 2021).

the first event—the proposal to enact it—has not occurred.¹⁸⁴ The presidential veto or signature into law is thus highly dependent on the success of the preceding stages. Every occurrence in this reactive sequence is both responsive to previous events and the cause of subsequent actions. Early incidences in the sequence matter because a small change can significantly affect how the sequence unfolds.¹⁸⁵ For example, if the vote on the floor fails, the rule might be directed to congressional committees for further deliberation, or it could be abandoned altogether. Temporary legislation reinforces these observations as each extension is contingent upon the expiration of the previous one. Moreover, extensions of provisions scheduled to expire are often “reactive” because such events are, to a certain degree, unforeseen—especially during periods of political divide or major legal reform.¹⁸⁶ Yet, not all temporary legislation is inevitably path dependent.

Spotting reactive sequences is not enough to identify path dependence. Another important element in the formation of the entrenched route is the existence of critical junctures. Critical junctures are moments during which a specific arrangement is adopted from among at least two or more alternatives.¹⁸⁷ These crossroads are “critical” because once a specific path is chosen, it is costly and difficult to return to the initial point when other alternatives were available.¹⁸⁸

Social scientists utilize counterfactual analysis in evaluating critical junctures by using thought exercises that envision how history would have unfolded had an alternative path been chosen.¹⁸⁹

¹⁸⁴ See JOHNSON, *supra* note 179, at 51.

¹⁸⁵ See, e.g., JAMES GLEICK, CHAOS: MAKING A NEW SCIENCE 8 (1987) (“Tiny differences in input could quickly become overwhelming differences in output—a phenomenon given the name ‘sensitive dependence on initial conditions.’”).

¹⁸⁶ See *supra* note 17 and accompanying text.

¹⁸⁷ Mahoney, *supra* note 21, at 513.

¹⁸⁸ *Id.*; see also Levi, *supra* note 26, at 28 (“Perhaps the better metaphor is a tree . . . From the same trunk, there are many different branches and smaller branches. Although it is possible to turn around . . . the branch on which a climber begins is the one she tends to follow.” (footnote omitted)).

¹⁸⁹ But see Philip E. Tetlock & Aaron Belkin, *Counterfactual Thought Experiments in World Politics: Logical, Methodological, and Psychological Perspectives* (“Social scientists . . . have also long been aware of the pivotal role that counterfactuals play in scholarship . . . Nevertheless, some contemporary historians still sternly warn us to avoid ‘what-might-have-been’ questions.”), in COUNTERFACTUAL THOUGHT EXPERIMENTS IN WORLD

During the period immediately preceding the critical juncture, various dynamics influence the decision of which path to take. Counterfactual analysis maintains that if, during that time, the final result can be easily predicted, then that sequence ought not be viewed as path dependent.¹⁹⁰ On the other hand, if the final outcome is causally connected to the prior conditions, that sequence may be viewed as path dependent.¹⁹¹ Such counterfactual exercises can delineate the importance of a critical juncture by demonstrating that choosing a different path would prompt a significantly different result. Yet, oversimplified, far-fetched, imaginary “what-if” exercises should be avoided. Instead, we should compare only alternative options that were truly viable and “on the table” at the time of the critical juncture. How do we get from a critical juncture to the final outcome? Investigating causal connections requires consideration of the following other path dynamics.

B. STATUS QUO BIAS THROUGH INCREASING RETURNS AND POSITIVE FEEDBACK

The term “increasing returns” refers to a condition whereby the more often a decision or a choice is made, the more prominent its advantages because of the increasing number of persons that select that route.¹⁹² For example, with today’s complex technology, we frequently observe increasing returns as more people choose to adopt a technological innovation, gain more experience with this innovation, and help improve its operation.¹⁹³ Accordingly, a notable effect of path dependence is that a minor benefit or unimportant lead for certain technology can result in irreversible influences on the ultimate market allocation of resources. For example, when two or more smartphone manufacturers (e.g., IBM and Apple) compete for the same market of potential adopters, trivial actions such as

POLITICS: LOGICAL, METHODOLOGICAL, AND PSYCHOLOGICAL PERSPECTIVES 3, 3 (Philip E. Tetlock & Aaron Belkin eds., 1996).

¹⁹⁰ Mahoney, *supra* note 21, at 537.

¹⁹¹ *Id.*

¹⁹² Pierson, *supra* note 27, at 252–53.

¹⁹³ See Arthur, *supra* note 168, at 116 (exploring the dynamics of allocation under increasing returns in a context where increasing returns arise naturally through agents choosing between competing technologies).

product launching events may inadvertently give one product a market advantage over the other, providing exponentially growing experience as more customers choose that product.¹⁹⁴ This is an example of increasing returns.

A similar phenomenon, “positive feedback,” denotes positive externalities formed when the same decision is made by other individuals.¹⁹⁵ There is an advantage for people whose decision is the predominant one.¹⁹⁶ Positive feedback may seem similar to the dynamics of increasing returns, but it varies mathematically.¹⁹⁷ Increasing returns describes a market in which advantages grow exponentially as market share increases and more players make the same choice.¹⁹⁸ Positive feedback implies enhancement of value to those that *already own* a product or made a choice.¹⁹⁹ Stated differently, positive feedback is a small reward given to market players *themselves* who previously chose that option.²⁰⁰

¹⁹⁴ See Liebowitz & Margolis, *supra* note 161, at 214–15 (noting that the causes of increasing returns are varied as the cause may be a result of either economies in production (supply side) or network effects (demand side)).

¹⁹⁵ See PAUL PIERSON, *POLITICS IN TIME: HISTORY, INSTITUTIONS, AND SOCIAL ANALYSIS* 21 (2004) (describing path dependence as “referring to social processes that exhibit positive feedback and thus generate branching patterns of historical development”).

¹⁹⁶ For example, the more consumers use a certain software, the more applications are written to accompany that software and improve the software’s features, which attracts more users to purchase the software. See Marina Lao, *Reclaiming a Role for Intent Evidence in Monopolization Analysis*, 54 AM. U. L. REV. 151, 182 (2004) (describing positive feedbacks created when more users adopt Microsoft Windows software).

¹⁹⁷ See Paul Pierson & Theda Skocpol, *Historical Institutionalism in Contemporary Political Science* (noting that what economists call “increasing returns” could generally describe self-reinforcing or positive feedback processes), in *POLITICAL SCIENCE: THE STATE OF THE DISCIPLINE* 693, 699–703 (Ira Katznelson & Helen V. Milner eds., 2002); see also Pierson, *supra* note 27, at 251 (“For some theorists, increasing returns are the source of path dependence; for others, they typify only one form of path dependence.”).

¹⁹⁸ See Pierson, *supra* note 27, at 252 (“In an increasing returns process, the probability of further steps along the same path increases with each move down that path. This is because the *relative* benefits of the current activity compared with other possible options increase over time.”).

¹⁹⁹ See Page, *supra* note 172, at 88 (explaining that positive feedbacks are like “little bonuses given to people who already made that choice or who will make that choice in the future”).

²⁰⁰ See *id.* at 88 (defining positive feedback dynamics in path dependence); Mahoney, *supra* note 21, at 511 (providing examples of positive feedback).

It is worth noting here the differences between positive feedback and network effects, which are often conflated. Network externalities, or network effects, is a phenomenon whereby the value consumers place on goods increases the more others use those goods.²⁰¹ Network effects are also referred to as “positive network externalities” (a term that surely adds to the confusion) or demand-side economies of scale, since each additional customer enhances the value of the network and changes the shape of the demand curve.²⁰² For example, the value of participation in a network of computers has been observed to grow significantly with the size of the network.²⁰³ Network effects have played a major role in legal reasoning and discussions in various areas of the law—such as antitrust law, intellectual property law, corporate law, and contract law—because they affect the behavior of participants in the market.²⁰⁴ Alas, positive feedback does not involve being part of a network at all.²⁰⁵ Rather, the value of goods increases as

²⁰¹ Kolasky, *supra* note 164, at 579.

²⁰² *See id.* (claiming that economists have focused primarily on the negatives of network effects and the ways they may lead to market failure).

²⁰³ *See id.* at 580 (“[P]ositive network effects exist when the utility of the network (and therefore its value) increases as output grows.”).

²⁰⁴ *See, e.g.*, Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 481–85 (1998) (detailing the scholarship on network effects in various areas of the law); *see also* Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 425 (1985) (arguing that if network effects diminish social welfare, then courts should consider legal doctrines to remedy these market failures); Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 97–100 (1994) (describing market actors’ behavior in hardware/software markets). Lemley and McGowan named two main types of network effects—actual networks and virtual networks—that diverge based on the extent to which the goods provide inherent value to a consumer apart from any network characteristics. Lemley & McGowan, *supra*, at 488–94. They wrote, “The greater the inherent value of the good relative to any value added by additional consumers, the less significant the network effect.” *Id.* at 488. “Actual [n]etworks,” as they called them, encompass “products whose entire value lies in facilitating interactions between a consumer and others who own the product.” *Id.* Examples of products with actual networks include telephones, fax machines, and language. *Id.* at 488–89. “Virtual [n]etworks,” on the other hand, provide increased value when there are additional users of identical or interrelated products. *Id.* at 491. For example, as more customers use a specific software and auxiliary applications, existing users benefit from better file sharing and services. *See id.* at 491.

²⁰⁵ *See* Lemley & McGowan, *supra* note 204, at 495 (emphasizing that “[b]y definition, [positive effects] do not exhibit network effects”).

consumption rises, even where goods are not themselves connected.²⁰⁶ Thus, although positive feedback is similar to network effects because they both deliver increasing value to participants, the concepts differ in how that value is added. Apart from positive feedback, other dynamics are also important in reinforcing a path.

C. SELF-REINFORCEMENT AND LOCK-IN

A “self-reinforcement” sequence can be characterized by reproduction that strengthens earlier events.²⁰⁷ Self-reinforcement portrays a condition in which once a decision has been made, it creates complementary institutions that maintain that path and reassure its perpetuation.²⁰⁸ Accordingly, in self-reinforcing sequences, initial strides in a specific path motivate additional, similar steps such that it becomes difficult to divert from that path.²⁰⁹ “Lock-in” portrays a situation in which a decision is repeated because a sufficient number of market players have invested resources in, and become reliant upon, that decision.²¹⁰ Once unforeseen, critical historical events take place, path dependence is observed through inertial and deterministic causal patterns.²¹¹ In other words, when processes are set in motion, they tend to stay on the path that results. This stage has been described in social science literature as a state of “inertia.”²¹² In the legislative context, inertia may ensue as temporary legislation gets “entrapped” in a self-reinforcing sequence, making the cost of deviation from the renewal pattern too high.

²⁰⁶ *Id.* at 494.

²⁰⁷ See Mahoney, *supra* note 21, at 516 (discussing the dynamic of self-reinforcement in path-dependence scholarship).

²⁰⁸ See William J. Aceves, *Institutionalist Theory and International Legal Scholarship*, 12 AM. U. J. INT'L L. & POL'Y 227, 246 (1997) (discussing the role of institutions in technological and market changes (citing Wayne Sandholtz, *Institutions and Collective Action: The New Telecommunications in Western Europe*, 45 WORLD POL. 242 (1993))).

²⁰⁹ Mahoney, *supra* note 21, at 512.

²¹⁰ See, e.g., Lim, *supra* note 29, at 510, 542–49 (discussing lock-in in the software industry where switching costs are often very high).

²¹¹ See Mahoney, *supra* note 21, at 511 (“[P]ath-dependent sequences are marked by relatively deterministic causal patterns or what can be thought of as ‘inertia’—i.e., once processes are set into motion and begin tracking a particular outcome, these processes tend to stay in motion and continue to track this outcome.”).

²¹² *Id.*

Self-reinforcement creates dynamics that reproduce a specific pattern over time. It generates “reactive sequences” that comprise a chain of reaction and counterreaction as one event causally prompts the next, eventually leading to lock-in of the path.²¹³ Nevertheless, path dependence scholars recognize the possibility of breaking out of a lock-in situation, depending on the overall efficiency and strength of the inertial pattern created in the past.²¹⁴ Unexpected shocks, they claim, can alter the course of the path.²¹⁵

Political scientist Paul Pierson has identified four aspects of the political domain that reinforce path dependence dynamics: (1) the centrality of collective action, meaning that the viability of individual political activity depends immensely on the activities of others and requires positive feedback to assure their support; (2) the high number of organizations urging representatives to make commitments, which elevates the cost of departure from past arrangements; (3) the existence of power asymmetry, which allows certain actors to force others to bend to their will, making open political clash pointless; and (4) the complexity and cloudiness of the political framework.²¹⁶ Pierson also presumed that path dependence in politics places associations at the center of forming institutional patterns.²¹⁷ Once adopted, institutional patterns deliver increasing benefits to current users because they continue to be adopted. This makes diverting from the selected path difficult, even if alternative

²¹³ See *id.* at 509 (“Reactive sequences are chains of temporally ordered and causally connected events.”); see, e.g., Andrew Abbott, *From Causes to Events: Notes on Narrative Positivism*, 20 SOC. METHODS & RES. 428, 445–49 (1992) (reviewing new methods for analyzing narrative data over time).

²¹⁴ See Roe, *supra* note 27, at 643–45 (describing conditions that disconnect a chain of events); Langer, *supra* note 166, at 908 & n.369 (exemplifying path dependent dynamics in adjudication of international criminal law).

²¹⁵ See Puffert, *supra* note 26, at 63 (“A process of economic allocation is called *path dependent* when the sequence of allocations depends not only on fundamental, a priori determinants—typically listed as technology, factor endowments, preferences, and institutions—but also on particular contingent events.”).

²¹⁶ Pierson, *supra* note 27, at 257–62.

²¹⁷ See *id.* at 255 (“[N]ew institutions often entail high fixed or start-up costs, and they involve considerable learning effects, coordination effects, and adaptive expectations. Established institutions generate powerful inducements that reinforce their own stability and further development.”).

options exist.²¹⁸ Self-reinforcing dynamics associated with collective action processes also mean that organizations are strongly inclined to remain in place once they are standardized.²¹⁹

Nobel Prize winning economist Douglass North has drawn a correlation between path dependence, institutional change, and lock-in.²²⁰ He distinguishes between associations and institutions, describing institutions as “the rules of the game in a society,” while organizations are the market players.²²¹ Organizations, for the most part, exert their influence to justify their existence and to stifle change.²²² This is especially so when they represent one group in society and are committed not to the general good of all constituents but only to those they represent.²²³ Once created, organizations are hard to change, and they significantly affect the path of action.²²⁴

Indeed, as will be demonstrated, organizations have had a large impact in maintaining the path dependence of temporary legislation in the United States through self-reinforcement dynamics that have resulted in increased inertia and lock-in.²²⁵ Historical investigation

²¹⁸ See W. BRIAN ARTHUR, *INCREASING RETURNS AND PATH DEPENDENCE IN THE ECONOMY* 7 (1994) (using probability theory to show mathematically how a model of increasing returns works to create a path dependence sequence).

²¹⁹ See Mahoney, *supra* note 21, at 508 (“With increasing returns, an institutional pattern—once adopted—delivers increasing benefits with its continued adoption, and thus over time it becomes more and more difficult to transform the pattern or select previously available options, even if these alternative options would have been more ‘efficient.’”); Pierson, *supra* note 27, at 258–59 (“[D]espite massive social, economic, and political changes over time, self-reinforcing dynamics associated with collective action processes mean that organizations have a strong tendency to persist once they are institutionalized.”).

²²⁰ See Douglass C. North, *The Historical Evolution of Politics*, 14 *INT’L REV. L. & ECON.* 381, 385 (1994) (describing a paradigm for long-term political and economic change). See generally DOUGLASS C. NORTH, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* 92–104 (1990) (considering the structure of institutions and their impact on the organizations that operate under them).

²²¹ NORTH, *supra* note 220, at 3–5.

²²² *Id.* at 5–6.

²²³ *Id.*; see also RICHARD R. NELSON & SIDNEY G. WINTER, *AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE* 9–11 (1982) (discussing path dependence and evolutionary economics processes of institutions).

²²⁴ See NORTH, *supra* note 220, at 8 (noting that economic organization gradually evolve and alter institutional frameworks); see also Pierson, *supra* note 27, at 259 (arguing that self-reinforcing dynamics associated with collective action result in organizations having a strong tendency to persist after they are institutionalized).

²²⁵ See *infra* Part V.

provides a valuable tool for understanding the steps that set a path into motion. The following case study of a prominent fiscal policy will illustrate how path dynamics of expiring provisions can become rooted and inertial.

IV. THE RESEARCH CREDIT AS A CASE STUDY

The creation of the research credit program did not occur in a vacuum. That route began with the Cold War, which reflected a critical juncture—a period of worldwide technological competition, national security and defense anxieties, and increasing military concerns.²²⁶ With the rise of Soviet scientific prowess, America experienced a period of self-examination in which it realized it could lose its technological superiority to the Communist Bloc. During committee hearings, the director of the National Science Foundation (NSF) warned about the Soviet Union’s growing scientific power:

[T]he recent evidence of serious challenge to United States supremacy from the U.S.S.R. has come as a rude shock to most Americans and has brought about a period of intensely critical self-examination and analysis. . . .

. . . .
 . . . Whether by this means [the U.S.S.R.] can succeed in [its] expressed ambition to dominate the world in scientific and technological achievement remains to be seen.²²⁷

²²⁶ For examples of scholarship studying the Cold War through the lens of critical juncture and path dependence, see Giovanni Capoccia & R. Daniel Kelemen, *The Study of Critical Junctures: Theory, Narrative, and Counterfactuals in Historical Institutionalism*, 59 *WORLD POL.* 341, 345 & n.17 (2007) (noting that “[t]he concept of critical junctures has been applied to a striking variety of topics including . . . the end of the cold war”); Alen Hristov, *Historical Institutionalism Meets IR: Explaining Patterns in EU Defence Spending*, *E-INT’L REL.* (Feb. 3, 2019), <https://www.e-ir.info/2019/02/03/historical-institutionalism-meets-ir-explaining-patterns-in-eu-defence-spending/> (arguing “that the whole early Cold War – post-Crimea episode is causally linked through a path dependent sequence of events”).

²²⁷ *Research and Development: Hearings Before a Subcomm. of the H. Comm. on Gov’t Operations*, 85th Cong. 5–6 (1958) [hereinafter *Research and Development Hearings*]

Achieving superiority in technology involved, among other steps, investment in research facilities and the education of engineers and scientists.²²⁸ Over a decade after the test of the first nuclear bomb in Alamogordo, New Mexico, in 1945, the United States undertook an extensive study into the nation's slowdown in scientific research.²²⁹ Federal sponsorship of defense- and aerospace-related research was low compared to that of other nations.²³⁰ Research universities in the United States badly needed more funds directed toward basic research to support large-scale scientific activities.²³¹ The Soviet government and its communist centralized bureaucracy were the main sources of industrial support for Russian research.²³² Representatives from the Congressional Committee on Science and Astronautics urged the U.S. government to take similar steps.²³³

(statement of Dr. Alan T. Waterman, Director, NSF); *see also id.* at 2 (statement of Rep. John W. McCormack) (noting that the purpose of these hearings was to determine whether “our Federal research and development activities [were] carried on as effectively and as efficiently as possible” and without “wasteful duplication . . . and financial bottlenecks”).

²²⁸ *See id.* at 14–15 (statement of Dr. Alan T. Waterman, Director, NSF) (noting that the United States was “lag[ging] behind most other countries” in terms of commitment to and respect for scientific education).

²²⁹ In 1958, the House Government Operations committee conducted an “extensive study” of the government’s research and experimentation activities. *Id.* at 2 (statement of Rep. John W. McCormack); *see also id.* at 315–17 (statement of Dr. John Turkevich, Eugene Higgins Professor of Chemistry, Princeton University) (advocating for greater federal government in research and education to help the United States win the “science war”).

²³⁰ *See id.* at 116–17 (statement of Peter J. Schenk, President, Air Force Ass’n) (arguing that the United States was “spending far too little” on basic research and military research and development); *id.* at 156–58 (statement of Dr. C.C. Furnas, Chancellor of the University of Buffalo) (comparing the “relative status” and pace of the United States and Soviet Union in terms of budgetary investment and scientific output); *see also* STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 119 (Comm. Print 1981) (comparing military and space research expenditures of the United States to Japan and West Germany in the 1960s and 70s).

²³¹ *See Research and Development Hearings, supra* note 227, at 160 (statement of Dr. C.C. Furnas, Chancellor of the University of Buffalo) (“[I]t is necessary and inevitable that major Federal Government support must be maintained and enlarged if this country is to keep pace in the world.”).

²³² *See id.* at 311 (statement of Dr. John Turkevich, Eugene Higgins Professor of Chemistry, Princeton University) (“In the Soviet Union, everything is done by the Government.”). They provided full scholarships for students and offered lower income tax rates, which contributed to the motivation of scientists to move to or remain in the Soviet Union. *Id.* at 311–13.

²³³ *See President’s 1963 Tax Message: Hearings Before the H. Ways & Means Comm.*, 88th Cong. 2617–20 (1963) [hereinafter *President’s 1963 Tax Message*] (statement of Congressman

Research and development became extremely important as it related to U.S. defense and weapon systems.

The sluggish rate of private investment in research disadvantaged the U.S. trade balance with other industrialized nations.²³⁴ During the 1960s and 1970s, while spending on research in the United States was in continuous decline, rival countries created a remarkable upsurge in technological research.²³⁵ Reports from Japan's Ministry of International Trade and Industry described the United States as "a state of relative decline—politically and economically."²³⁶ The United States was about to lose its standing as one of the world's most innovative countries and largest exporters of high-technology goods.²³⁷ Concerns about economic growth and productivity became central in American public debate.²³⁸ Lagging productivity and sluggish investment

Emilio Q. Daddario) (stressing the importance of research and science to create new products that would improve the nation's future, security, welfare, and economy).

²³⁴ Private research to Gross National Product ratio in 1977 for the United States was 1.5%, compared with 1.9% for Japan and 2.3% for West Germany. STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 119 (Comm. Print 1981); see also *President's 1963 Tax Message*, supra note 233, at 2618–19 (statement of Congressman Emilio Q. Daddario) (noting that private company-financed R&D had been greatly waning); William M. Horne, Jr., *Research and Development Expenditures* (pointing to the growing "time lag" of seven years "between the research expenditures and their payoff in new products and whole new industries"), reprinted in H. COMM ON WAYS & MEANS, 85TH CONG., 2 COMPENDIUM OF PAPERS ON BROADENING THE TAX BASE 1115 (Comm. Print 1959).

²³⁵ See STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 119 (Comm. Print 1981) (noting a need to reverse the decline in research activities in the United States relative to other countries).

²³⁶ *Tax Cut Proposals: Hearings Before the S. Comm. on Fin.*, 96th Cong. 1326 (1980) [hereinafter *Tax Cut Proposals Hearing*] (statement of John Nesheim, Corp. Treasurer, Nat'l Semiconductor Corp. on behalf of the Semiconductor Industry Ass'n) (quoting Japan's Ministry of International Trade and Industry).

²³⁷ See *id.* at 1321 (noting that "[m]ost of America's current and future export strength depends upon high technology products in which semiconductors are the essential components" and that "[i]f America loses its technological lead in [the semiconductor] industry, it will impair our ability to maintain world leadership in commerce and in defense capability").

²³⁸ See, e.g., Walter W. Heller, *Shying Away from Recovery*, WALL ST. J., Dec. 18, 1975, at 16 (explaining the debate over policy issues like tax cuts and the decisions made by the Federal Reserve); Christopher S. Wren, *Soviet Plans to Cut Economic Lag Behind U.S. by '80*, N.Y. TIMES, Oct. 28, 1976, at 1 (explaining how the Soviet's plans could lead to the Soviet Union surpassing the United States on several economic fronts).

ratios led to increased calls for government involvement.²³⁹ The media reported a growing public fear.²⁴⁰ Traditional trade remedies were viewed as ineffective because they did not address inequalities in international competition.²⁴¹ Industry associations urged the U.S. government to step out of its “neutral corner” and provide effective market incentives to maintain U.S. technological leadership.²⁴² Businesspersons requested that Congress help them compete in the “markets of the future” by investing in research, improved products, and more efficient production facilities.²⁴³

²³⁹ See Bradley Graham, *U.S. Productivity: Golden Days Over*, WASH. POST, Sept. 10, 1978, at F1 (reporting on a slump of U.S. productivity and noting that government agencies tasked with addressing the problem are ineffective); Urban C. Lehner, *Manager's Journal: U.S. Productivity*, WALL ST. J., Nov. 19, 1979, at 22 (discussing the efforts of the Assistant Secretary of Labor to address declining U.S. productivity).

²⁴⁰ See, e.g., Edward P. Foldessy, *Banking Industry in America Is Facing Onslaught of New Foreign Competition*, WALL ST. J., Apr. 12, 1978, at 4 (discussing foreign threats to the U.S. banking sector); James A. Rousmaniere, Jr., *Senate Panel Expands Aid Program Aimed at Foreign Competition*, BALT. SUN, Oct. 4, 1978, at A7 (discussing fears of unemployment arising from foreign competition); Dan Fisher, *Pressure Mounts on Steel Industry in U.S.: Foreign Competition, Profit Squeeze Raise Memories of 1960s Problems*, L.A. TIMES, Dec. 7, 1975, at F1 (discussing fears from the steel industry concerning foreign competition).

²⁴¹ See, e.g., Richard D. Lyons, *Peterson Urges Research Incentives*, N.Y. TIMES, Apr. 12, 1972, at 59 (discussing the need for new research and development policies due to increasing trade imbalances in high-technology goods); *Executives Urge Tax Incentives and Cut in U.S. Budget, but Congressmen Demur*, WALL ST. J., Sept. 20, 1974, at 3 (discussing debate among Congress members as to effective tax policy to address international competition); Robert W. Tucker, *The International Struggle for Power and the Question, "Does Might Make Right?"*, WASH. POST, Mar. 10, 1977, at A2 (“[T]he prospects for an emergent global community cannot appear promising today.”); Brendan Jones, *U.S.-Japan Report Asks Freer Trade*, N.Y. TIMES, June 17, 1974, at 47 (discussing cooperation between the U.S. and Japan to improve international cooperation).

²⁴² See *Tax Cut Proposals Hearing*, *supra* note 236, at 1310–11 (statement of John Nesheim, Corp. Treasurer, Nat'l Semiconductor Corp. on behalf of the Semiconductor Industry Ass'n) (“[W]e face a major challenge in this decade from foreign governments . . . to maintain America's technological leadership.”); Leonard Silk, *The 'Secular Slowdown' Thesis*, N.Y. TIMES, Oct. 21, 1976, at 67 (noting the need to employ new measures to stimulate more research and development); Richard Foster, Letter to the Editor, *Proper Support for Lagging R.&D.*, N.Y. TIMES, July 18, 1979, at A22 (noting that a fundamental R&D problem is a long term investor behavior).

²⁴³ *President's 1963 Tax Message*, *supra* note 233, at 2601 (statement of The Fountain Pen & Mech. Pencil Mfrs. Ass'n); see also *id.* at 2690 (statement of William M. Horne, Jr., Chairman, Tax Policy Committee, The Manufacturing Chemists' Ass'n, Inc.) (encouraging the Kennedy Administration to incentivize industry to adopt new technological equipment); *id.* at 2801 (statement of Paul Robbins, Exec. Dir., Nat'l Soc'y of Professional Engineers) (same).

During that period, American culture began to glorify technology as an American ethos and as a key to achieving a competitive advantage. More and more people linked technological advances and investments in research to spurring economic growth.²⁴⁴

Several routes existed to improve the U.S. position in the worldwide technological race. Some options included direct and indirect subsidies for research and development. Foreign governments already established subsidy models for domestic technological advancements. For example, during the 1960s and 1970s, Canada, Japan, the United Kingdom, and West Germany provided various tax credits and cash grants to qualifying research expenditures, including capital outlays for buildings and other assets.²⁴⁵ The Japanese Ministry of International Trade and Industry implemented laws and policies that allowed U.S. firms to invest in Japan while negotiating patents in return.²⁴⁶ The Japanese government directly spent over \$250 million on large-scale tech programs and various incentives.²⁴⁷ The Japanese government was not unique. Many other foreign governments

²⁴⁴ See, e.g., Wren, *supra* note 238 (“The Soviet leadership . . . announced production goals for 1977 that it hoped would help significantly narrow the Soviet Union’s economic gap with the United States . . .”); Tucker, *supra* note 241 (discussing international cooperation around modern technologies); Jones, *supra* note 241 (reporting on statements from economic development experts that investment in energy development is needed to improve growth).

²⁴⁵ Such subsidies included special depreciation allowances for property devoted to R&D. See *Tax Cut Proposals*, *supra* note 236, at 1626 (statement of The Ass’n of American Railroads) (“[M]ajor world competitors . . . provide much more favorable depreciation allowances than our own system of taxation. Japan, West Germany, France, Australia, and Canada provide capital cost allowances permitting the write-off of investments at a rate 2 to 10 times faster than our present law.”).

²⁴⁶ This tactic helped Japanese companies such as Hitachi, Toshiba, Mitsubishi, and Fujitsu to sustain domestic competition. See JACK BARANSON, *THE JAPANESE CHALLENGE TO U.S. INDUSTRY* 40 (1981) (detailing the Japanese license technology approach with foreign companies compared to domestic competitors).

²⁴⁷ See *Tax Cut Proposals Hearing*, *supra* note 236, at 1326 (statement of John Nesheim, Corp. Treasurer, Nat’l Semiconductor Corp. on behalf of the Semiconductor Industry Ass’n) (“Over the last four years the Japanese Government spent \$250 million on the well publicized Very Large Scale Integration (VLSI) program.”); CHALMERS JOHNSON, *MITI AND THE JAPANESE MIRACLE: THE GROWTH OF INDUSTRIAL POLICY, 1925–1975*, at 16 (1982) (describing the way Japan imported a great proportion of its technology from the United States).

provided research assistance to domestic technological advancements that amounted up to \$2 billion.²⁴⁸

Other direct stimuli paths included establishing a military research and development agency, similar to the Atomic Energy Commission, that would hire civilian and military scientists in a mixed organization and report to the Secretary of Defense.²⁴⁹ Proposals suggested providing incentives for private research expenditures to develop defense weapons.²⁵⁰ Others recommended stimulating investment in basic research science by providing incentives to corporations to collaborate with universities on developing basic research.²⁵¹ Legislators and scholars called for not only reexamination of the support granted for basic and military research, but also for the ability to translate such research into economic activity and increased productivity.²⁵²

The growing concern for technological competitiveness and the emerging culture that glorified scientific innovations marked a critical point in time. Faced with a crossroad, decisionmakers needed to determine which route to adopt to keep pace with the worldwide technological race to the top.²⁵³ Among the indirect alternatives, economists called on changes to taxation to encourage the broadening of research efforts and more participation by both

²⁴⁸ See *Tax Cut Proposals Hearing*, *supra* note 236, at 1313 (statement of John Nesheim, Corp. Treasurer, Nat'l Semiconductor Corp. on behalf of the Semiconductor Industry Ass'n) ("The Japanese, and other countries, . . . are providing government support in the form of subsidies and tax incentives to attract the capital needed As much as two billion dollars is being spent on this effort . . .").

²⁴⁹ See *Research and Development Hearings*, *supra* note 227, at 324 (statement of T.F. Walkowicz, New York City, Military Research and Development Management) (discussing "the proposed Advanced Research Projects Agency, ARPA, in the Department of Defense").

²⁵⁰ Horne, *supra* note 234, at 1115.

²⁵¹ See *Tax Incentives for Exports: Hearing Before the Subcomm. on Taxation & Debt Mgmt. of the S. Comm. on Fin.*, 96th Cong. 48, 50 (1979) [hereinafter *Tax Incentives for Exports*] (statement of Emil M. Sunley, Deputy Assistant Secretary of the Treasury for Tax Policy) (discussing a bill that would provide corporations with basic research credit).

²⁵² *Destinies for American Research: Hearing Before the Subcomm. on Energy Research & Prod. & the Subcomm. on Sci., Research & Tech. of the H. Comm. on Sci. & Tech.*, 96th Cong. 6, 11 (1979) [hereinafter *Destinies for American Research*] (statements of Rep. Donald Ritter and Nobel Laureate Dr. Burton Richter, Stanford Linear Accelerator, Stanford University).

²⁵³ See Michael Homberg, *Who Is Leading Innovation? German Computer Policies, the 'American Challenge' and the Technological Race of the 1960s and 1970s*, MEDIA IN ACTION (May 26, 2017), <https://www001.zimt.uni-siegen.de/ojs/index.php/mia/article/view/4/2> (discussing the worldwide technological race to the top).

the private and public sector.²⁵⁴ Specifically on the table was the creation of a temporary research credit shaped after another temporary provision, as will be explained in the following Section.

A. POSITIVE FEEDBACK FOR A NEW ROUTE

Providing indirect subsidies to stimulate private investment was not a new idea. The United States already used tax incentives for similar purposes, such as immediate expensing²⁵⁵ and the temporary “investment tax credit.”²⁵⁶ The research tax credit garnered more positive feedback than previous programs, which often provided lackluster benefits to constituents. As opposed to limited government grants, companies did not compete with each other for the credit as the program had no cap. Thus, the increasing support for the research credit amplified its advantages as more knowledge, experience, and involvement promoted that route.

The National Association of Manufacturers conducted independent studies on the benefits of capital tax incentives for economic growth and encouraged the government to provide additional tax incentives for product development in the form of a new investment credit focused on research.²⁵⁷ While the

²⁵⁴ See Gerhard Colm, *The Economics of the Current Fiscal Policy Proposals in the United States*, 23 PUB. FIN. ANALYSIS 82, 93 (1963) (discussing tax reform measures to broaden research efforts and market opportunities).

²⁵⁵ See, e.g., 26 U.S.C. §§ 179, 174 (2018) (providing immediate expensing of capital expenditures in qualified property and property used for research respectively).

²⁵⁶ See Stanley S. Surrey, *Federal Tax Policy in the 1960's*, 15 BUFF. L. REV. 477, 478 (1966) (“The investment tax credit, designed to encourage investment through an increase in the rate of return on investment in machinery and equipment and also in cash flow, was introduced in 1961 and adopted in 1962.”). Congress added § 38 to the Internal Revenue Code to provide a new temporary investment tax credit of seven percent of the cost of qualified property with at least four years of useful life. See 26 U.S.C. §§ 38, 46(a)(1), 46(c)(2) (Supp. IV 1958). The credit was limited to 100% of the tax liability up to \$25,000, plus 25% of any tax liability in excess of \$25,000. *Id.* § 46(a)(2). The credit aimed to encourage private investments in qualified property and to stimulate the modernization of plants and equipment. See Surrey, *supra*, at 478 (stating that the credit’s purpose was to “provid[e] in the tax system a solid support for investment in machinery and equipment”).

²⁵⁷ See generally NORMAN B. TURE, NAT’L ASS’N OF MFRS., TAX POLICY, CAPITAL FORMATION, AND PRODUCTIVITY: A STUDY PREPARED FOR THE COMMITTEE ON TAXATION, reprinted in *General Tax Reform: Pub. Hearings Before the H. Comm. on Ways & Means*, 93d Cong. 178 (1973).

association's overreaching proposal was not enacted into law until almost a decade later, it planted the idea to repeat the path of another temporary tax program in years to come. In 1978, Senators John Danforth (R-MO) and William Bradley (D-NJ) proposed an investment credit focused on research and development designed after the general investment credit precursor.²⁵⁸ They justified selecting that route by relying on studies that, at the time, predicted "the positive impact" of such an apparatus on research "spending, productivity[,] and inflation."²⁵⁹ The proposed new research credit, they contended, would offset the ongoing reluctance of many companies to bear the significant costs of research.²⁶⁰ The new credit aimed to do for research investment what the investment credit purportedly did for capital investment—namely to reverse stagnant research trends.²⁶¹ Yet, it took over three years for Congress to agree on a proper route and enact the measure because, among other possible options, the new research credit came with much uncertainty and a high price tag.²⁶²

Treasury remained doubtful about the efficacy of yet another version of the investment credit for two main reasons.²⁶³ First and foremost, a credit imposes a high burden on the U.S. budget, and it was not clear how Treasury could offset such an expensive tax expenditure.²⁶⁴ Second, Treasury officials questioned utilizing the tax system, rather than direct government funding routes, to spur research investments.²⁶⁵ They tried to divert attention to different

²⁵⁸ S. 700, 96th Cong. (1979), reprinted in *Tax Incentives for Exports*, supra note 251, at 6.

²⁵⁹ See *Tax Incentives for Exports*, supra note 251, at 54 (statement of Mark Shepherd, Jr., Chairman and Chief Executive Officer, Texas Instruments, Inc.) (describing a study).

²⁶⁰ See *id.* at 53 (noting declining investments in research activity).

²⁶¹ *Id.*

²⁶² The Finance Subcommittee on Taxation estimated the revenue cost of Senate bill S. 700 and its "10 percent investment tax credit for R&D expenditures" to be \$1.872 billion in 1980, \$2.227 billion in 1981, \$2.516 billion in 1982, \$2.767 billion in 1983, and almost \$3 billion in 1984. *Id.* at 47, 50 (statement of Emil M. Sunley, Deputy Assistant Secretary of the Treasury for Tax Policy).

²⁶³ See *id.* at 29 (describing the Treasury Department's doubts about the proposed investment credit).

²⁶⁴ See *id.* at 32 ("[I]f we seek to promote investment through a special tax program, the offsetting revenue cost must be weighed in the balance. To realize the desired economic objectives, any such tax program must be consistent with continued improvement in the budget position").

²⁶⁵ See *id.* at 31–32 ("[T]he direct expenditure alternative may be more efficient.").

paths by calling on agencies that were more familiar with administering research activities, such as the NSF or the Commerce Department, to take on the endeavor of stimulating increased research efforts.²⁶⁶

Notable academics, including Nobel Laureate in Physics Dr. Burton Richter of Stanford University, supported using the new credit for research.²⁶⁷ Dr. Richter stressed the importance of government policies that would encourage people to take more risks, not just in connection with capital, but also with research.²⁶⁸ Nobel Laureate Dr. Melvin Calvin also believed that providing a credit for research would encourage firms to innovate.²⁶⁹ Representatives from the National Academy of Sciences also recommended this path and emphasized that implementing it instantaneously was critical because the U.S. tax structure had remained unchanged over the previous twenty-five years.²⁷⁰ Likewise, the American Association for the Advancement of Science endorsed the proposed new research credit because it believed that it would increase returns for investors and the attractiveness of research investments.²⁷¹ Representatives of nonprofit organizations such as the Midwest Research Institute, a large research organization that specialized in environmental research, raved about the bill, noting, “It is exactly

²⁶⁶ See *id.* at 32 (“Agencies familiar with research activities such as the [NSF] or the Commerce Department, would have more expertise in identifying basic research than would the Internal Revenue Service.”).

²⁶⁷ See *Destinies for American Research*, *supra* note 252, at 70 (statement of Nobel Laureate Dr. Burton Richter, Stanford Linear Accelerator, Stanford University) (“Maybe you can do something about tax policy that lets people make a bundle more money if they innovate than if they go on in the present directions.”).

²⁶⁸ See *id.* (“[I]t seems to me that there clearly is a problem. It is just as advantageous in the short run to continue in an industry with present technology as it is to really innovate.”).

²⁶⁹ See *id.* at 71 (statement of Nobel Laureate Dr. Melvin Calvin, Chemistry Department, University of California, Berkeley) (“[O]ne way of perhaps inducing industry to increase its rate and take bigger risks is to have some tax way of providing an incentive for them.”).

²⁷⁰ See *id.* at 78 (statement of Dr. Philip Handler, President, National Academy of Sciences) (explaining how it was difficult to blame the lag in innovation on the tax system because it had remained constant for twenty-five years).

²⁷¹ See WORK GRP., RECOMMENDATIONS FOR CREATING JOBS THROUGH THE SUCCESS OF SMALL, INNOVATIVE BUSINESSES: A REPORT TO THE ASSISTANT SECRETARY OF COMMERCE FOR SCIENCE AND TECHNOLOGY (1978) (advocating for the ability of small firms to deduct the costs of regulatory compliance and citing to a report on the state of research), *reprinted in Tax Incentives for Exports*, *supra* note 251, at 122 & n.13.

the kind of help that the Federal Government should be providing to aid the economy.”²⁷²

Many businesspersons who had already gained administrative experience with the current format of the investment credit hoped to preserve its existing structure and merely expand it to include research expenditures.²⁷³ While the consensus seemed to favor new incentives, specifically for research, business leaders kept pushing for utilization of the existing credit structure and expansion of its application to research activities.²⁷⁴ Yet, as will be demonstrated next, the investment credit had a troublesome history that pushed Congress away from simply adding “research” to its existing ambit.

Much of the backlash the investment credit route received was due to its unstable lifecycle. During the 1960s and 1970s, the U.S. government utilized the investment credit as part of its “New Economics” policy and took affirmative fiscal actions to achieve economic growth while responding to recurring cycles of recession and recovery.²⁷⁵ As opposed to the neoclassical economics idea of free markets adjusted by an invisible hand,²⁷⁶ New Economics²⁷⁷

²⁷² *Tax Incentives for Exports*, *supra* note 251, at 226 (statement of John McKelvey, President, Midwest Research Institute).

²⁷³ *See id.* at 55 (statement of Mark Shepherd, Jr., Chairman and Chief Executive Officer, Texas Instruments, Inc.) (“Among many proposals for financial incentives, we feel the most effective would be based on a change in the investment tax credit.”).

²⁷⁴ *See id.* at 40–41 (statement of Emil Sunley, Deputy Assistant Secretary of the Treasury for Tax Analysis) (noting that the business community argued that “additional tax incentives for R. & D. would be a ‘mere tinkering at the margin’”).

²⁷⁵ *See* Eyal-Cohen, *supra* note 25, at 878 (detailing the historical circumstances of the birth and death of the investment credit). The investment credit conceptually relied on New Economics, Functional Finance, and Neo-Keynesian theories of government manipulation of market positions. *See* JOHN MAYNARD KEYNES, *THE GENERAL THEORY OF EMPLOYMENT INTEREST AND MONEY* 175–77 (1936) (drawing a connection between increasing savings to more employment and advocating for a better understanding of ways to influence market demand); GEORGE TERBORGH, *THE NEW ECONOMICS* 8 (1968) (discussing the New Economics theory from a critical point of view); Abba P. Lerner, *The Essential Properties of Interest and Money*, 66 Q.J. ECON. 172, 192 (1952) (advocating the use of monetary and fiscal measures as an employment policy).

²⁷⁶ *See* ADAM SMITH, *AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS* 48–56 (J.M. Dent & Sons Ltd. 1910) (1776) (discussing the tendency of market prices to reach natural balance).

²⁷⁷ *See, e.g.*, Franco Modigliani, *The Monetarist Controversy or, Should We Forsake Stabilization Policies?*, 67 AM. ECON. REV. 1, 3 (1977) (pointing to the effect of “fiscal policy as the main tool to keep the economy at near full employment”).

and Functional Finance²⁷⁸ theories relied on Neo-Keynesian theories of government manipulation of market positions.²⁷⁹ The doctrines prescribed increased use of fiscal,²⁸⁰ monetary,²⁸¹ and expenditure policies in a flexible manner²⁸² to moderate and manage the economy.²⁸³ They viewed fiscal policy as a flexible tool along with interchangeable budget position as a form of functional calibration.²⁸⁴ Focused on the potential of the economy,²⁸⁵ the federal budget began to include statistical calculations and predictions that allowed economists of the Council of Economic Advisors to foresee market behavior and respond to it beforehand via various apparatuses such as tax policy.²⁸⁶

New Economics shifted the focus from a passive tax policy to a more active fiscal agenda. Using measures such as the investment credit, the government anticipated variable budget positions to be

²⁷⁸ See Abba P. Lerner, *Functional Finance and the Federal Debt*, 10 SOC. RES. 38, 38–39 (1943) (explaining how fiscal policy that anticipates outcomes can direct the economy).

²⁷⁹ See generally KEYNES, *supra* note 275 (demonstrating a mathematical correlation between increasing savings to increased employment and market demand).

²⁸⁰ See, e.g., SEYMOUR E. HARRIS, ECONOMICS OF THE KENNEDY YEARS AND A LOOK AHEAD 88–97 (1964) (explaining the effect of increasing federal expenditures and tax incentives on the economy by spurring investments).

²⁸¹ See, e.g., David Meiselman, *The New Economics and Monetary Policy*, 23 FIN. ANALYSTS J. 95, 95–97 (1967) (discussing how increasing credit and restricting borrowing can influence inflation); Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 387, 388 (1954) (noting the importance of government expenditure in economic calculations).

²⁸² See *President's 1967 Tax Proposals: Hearings Before the H. Comm. on Ways & Means*, 90th Cong. 518–24 (1967) [hereinafter *President's 1967 Tax Proposals*] (statement of Joseph A. Pechman, Dir. of Economic Studies, The Brookings Institution) (discussing flexible tax policy and stating that tax increases during inflation can reduce spending).

²⁸³ See Lerner, *supra* note 275, at 192 (advocating the use of monetary and fiscal measures to control inflation and spur economic growth).

²⁸⁴ See TERBORGH, *supra* note 275, at 8 (discussing the effect of taking certain budget positions as an economic stabilizer); see also Alvin H. Hansen, *Inflation and the New Economics*, CHALLENGE, Nov./Dec. 1966, at 5, 6 (discussing the correlation between monetary policy and fiscal policy).

²⁸⁵ See Walter W. Heller, *Adjusting the "New Economics" to High-Pressure Prosperity* (May 1966) (noting how New Economics utilizes the full potential of the economy), *reprinted in* COMM. FOR ECON. DEV., *MANAGING A FULL EMPLOYMENT ECONOMY* 8, 9 (1966).

²⁸⁶ See SUBCOMM. ON FISCAL POLICY, J. ECON. COMM., 90TH CONG., *REVENUE SHARING AND ITS ALTERNATIVES: WHAT FUTURE FOR FISCAL FEDERALISM?* 1205, 1207–08 (Comm. Print 1967) (discussing models of revenue growth and probable effects of tax policies).

modified as needed.²⁸⁷ Consequently, the U.S. government utilized the investment credit sporadically: suspended it in 1966, reinstated it in 1967, repealed it in 1969, reinstated it in 1971, increased it in 1975, and rescinded the investment credit altogether in the tax reform of 1986.²⁸⁸ The investment credit never reappeared despite many proposals over the years to restore this temporary legislation.²⁸⁹

The evaluations of the investment credit's efficacy were, at best, mixed.²⁹⁰ Many objected to the credit on account of contracyclical fiscal theory.²⁹¹ Critics thought that this path of functional finance policy relied on speculative forecasts with long time lags.²⁹² Thus,

²⁸⁷ See Walter W. Heller, *What's Right with Economics?*, 65 AM. ECON. REV. 1, 24 (1975) (“[G]overnment action to stimulate supply and suppress demand at certain pressure points in the economy might well pass the test of economic efficiency.”).

²⁸⁸ Eyal-Cohen, *supra* note 25, at 878.

²⁸⁹ *Id.*

²⁹⁰ Some believed the investment credit was a productive economic tool that helped businesses obtain capital. See, e.g., *Nomination of David A. Stockman: Hearing Before the S. Comm. on Governmental Affairs*, 97th Cong. 45 (1981) (statement of Senator John Glenn) (“I think it is one of our more productive economic tools, and I think [investment credits] should be expanded instead of criticized as leading to lower income and lower employment.”). Yet, Assistant Treasury Secretary Stanley Surrey was one of the biggest critics of temporary provisions, including the investment credit, and the use of the tax system to maneuver the market using New Economics theory. See J. Clifton Fleming, Jr. & Robert J. Peroni, *Reinvigorating Tax Expenditure Analysis and Its International Dimension*, 27 VA. TAX REV. 437, 497 n.194 (2008) (mentioning Surrey’s dislike of the investment tax credit as an expensive and unnecessary expenditure); see also *Tax Changes for Shortrun Stabilization: Hearings Before the Subcomm. on Fiscal Policy of the J. Econ. Comm.*, 89th Cong. 238 (1966) [hereinafter *Tax Changes for Shortrun Stabilization*] (statement of Hon. Stanley S. Surrey, Assistant Secretary of the Treasury) (expressing skepticism regarding “the economic effectiveness of temporary individual income tax changes”).

²⁹¹ See Mortimer M. Caplin, *Federal Tax Policy—The Need for Reform*, 56 GEO. L.J. 880, 895 (1968) (noting many were not accepting of the New Economics theory); Leo J. Raskind, *The Federal Reserve System: An Administrative Agency for Contemporary Monetary Policy?*, 35 GEO. WASH. L. REV. 299, 313 (1966) (questioning the significance of the New Economics theory).

²⁹² See *President’s 1967 Tax Proposals*, *supra* note 282, at 598 (statement of Joseph A. Pechman, Director of Economic Studies, The Brookings Institution) (predicting a lag of six to twelve months for economic changes to follow fiscal action); TERBORGH, *supra* note 275, at 21–22, 97 (noting that the twelve month forecast does not take into account legislative lag of fiscal actions); Robert E. Lucas, Jr., *Econometric Policy Evaluation: A Critique*, 1 CARNEGIE-ROCHESTER CONF. SERIES ON PUB. POL’Y 19, 30 (1976) (arguing that econometric estimates ignore the time it takes to accomplish fiscal action and various other lags affecting taxpayer’s perception).

there was a buildup of public dislike of “functional finance” policy.²⁹³ The media reported that the scope and magnitude of the chosen fiscal action was theoretical and subject to various biases.²⁹⁴ Short-term forecasting made determining the scope of the fiscal action extremely uncertain.²⁹⁵ In the midst of this complex account, a new path took an unusual turn.

B. THE BIRTH OF A NEW TEMPORARY PATH

There were plenty of reactive sequences and critical junctures in the path of the temporary investment credit. Nevertheless, its on-and-off again history, lagging effect, and high budgetary price tag did not cultivate inertial forces and path dynamics that were strong enough to maintain its route. Rather, the investment credit was sought to manipulate and influence market behavior and created mixed public reaction.²⁹⁶ The investment credit was viewed as a failed experiment and a form of direct government intervention in market forces.²⁹⁷ A new device disconnected enough from this

²⁹³ See Eyal-Cohen, *supra* note 25, at 879 (“The failure of the investment credit was greatly attributed to its complexity, and to a build-up of public disdain for cyclical legislation and fiscal activism.”); Richard A. Musgrave, *Cost-Benefit Analysis and the Theory of Public Finance*, 7 J. ECON. LITERATURE 797, 798 (1969) (“When ‘functional finance’ reintroduced taxation as a policy tool, it was as an agent of deflation only, with the balanced-budget theorem the symbol of the both-sides approach.” (citation omitted)); Richard J. Cebula, *Deficit Spending, Expectations, and Fiscal Policy Effectiveness*, 28 PUB. FIN. 362, 363 (1973) (discussing Lerner’s “functional finance” theory and arguing that hostility towards debt increases may constrain effective fiscal policy).

²⁹⁴ See Lucas, *supra* note 292, at 30 (“Insofar as this assumption is false over the sample period, the econometric estimates are subject to bias.”); Meiselman, *supra* note 281, at 100 (noting there is “essentially no tested knowledge” to be able to assess the merits of the New Economics’ policy proposals).

²⁹⁵ See Lucas, *supra* note 292, at 30 (“It should be clear that the forecasting methods . . . cannot be expected to yield even order-of-magnitude estimates of the effects of explicitly temporary tax adjustments.”).

²⁹⁶ See *supra* notes 287–295 and accompanying text.

²⁹⁷ See Eyal-Cohen, *supra* note 25, at 878 (describing the failed arc of the investment credit). Assistant Treasury Secretary Stanley Surrey was one of the biggest critics of the investment credit and the use of the tax system to maneuver the market using New Economics theory. See *Tax Changes for Shortrun Stabilization*, *supra* note 290, at 238 (statement of Stanley S. Surrey, Assistant Secretary of the Treasury) (criticizing the investment credit); Raskind, *supra* note 291, at 313 (questioning the significance of the New Economics theory).

unsuccessful policy experiment was needed. At this critical juncture, the research credit originated as an offshoot of that path.

By the end of the 1970s, the U.S. economy was in a tailspin. Combined double-digit inflation and unemployment brought a peak in the “Misery Index.”²⁹⁸ Hopes for a research upsurge became the panacea for economic recovery at that time.²⁹⁹ In his State of the Union message, President Jimmy Carter supported extensive government action to encourage investments in research activities.³⁰⁰ The emerging high-tech industry—specifically the integrated circuits, telecommunications, and computer industries—greatly facilitated the enactment of the research credit. American Electronics Association representatives strongly favored a new research credit as a way to stimulate long-term research growth.³⁰¹ The American Marketing Association,³⁰² leading aerospace manufacturing companies,³⁰³ and the Semiconductor Industry Association³⁰⁴ all recommended a similar route.

²⁹⁸ See *United States Misery Index: How Miserable do you Feel?*, U.S. MISERY INDEX, <http://www.miseryindex.us/indexbyyear.aspx> (last visited Mar. 14, 2021) (showing that during the 1960s, the Misery Index averaged 7.1% but rose to an average of 13.3% during the 1970s).

²⁹⁹ The Joint Economic Committee stated: “we urge that consideration be given to . . . broadening investment tax credits to include private [research and development].” *The 1979 Economic Report of the President: Hearings Before the J. Econ. Comm.*, 96th Cong. 22 (1979) (report of the Williamsburg Assembly on Anti-Inflation Policy).

³⁰⁰ See *The State of the Union*, 15 WEEKLY COMP. PRES. DOC. 105 (Jan. 23, 1979) (calling on Congress “to take other anti-inflation action . . . to reassess our Nation’s technological superiority”); *The State of the Union*, 15 WEEKLY COMP. PRES. DOC. 140 (Jan. 25, 1979) (emphasizing that “research and development is an investment in the Nation’s future”).

³⁰¹ See *Tax Cut Proposals*, *supra* note 236, at 1302 (statement of Herbert M. Dwight, American Electronics Ass’n) (recommending bills that would encourage research and development, including a bill providing tax credits).

³⁰² *Tax Incentives for Research: A Public Policy Statement by the American Marketing Association*, *MARKETING NEWS*, June 20, 1975, at 4 (publishing a statement of the National Task Force on Tax Credits and coming out in favor of a federal tax credit for research).

³⁰³ See, e.g., *Tax Incentives for Exports*, *supra* note 251, at 311–25 (statement of John F. McDonnell, Executive Vice President of the McDonnell Douglas Corp.) (noting that the McDonnell Douglas Corporation was a leading aerospace manufacturing company that strongly advocated for creating incentives for research and arguing that it would contribute to the accomplishment of important national goals).

³⁰⁴ See *Tax Cut Proposals*, *supra* note 236, at 1301 (statement of John Nesheim, Corp. Treasurer, Nat’l Semiconductor Corp. on behalf of the Semiconductors Industry Ass’n) (dramatizing the need for the credit stating: “We are ready to go. We have got the ideas, and the innovations. We need the cash flow.”).

At that critical juncture in 1981, Congress enacted a new temporary research credit to stimulate private sector research and development.³⁰⁵ By applying only to incremental research expenditures, the credit aimed to incentivize increases in research and development and further expansion of research spending.³⁰⁶ The Joint Committee on Taxation explained that the main reason for the research credit was the *temporary* need to reverse a decline in private research activities, which remained at a low, stable level in real terms in preceding years.³⁰⁷ But once this route was created, strong path dependence forces led to corresponding cycles of extensions. These unique conditions paved the research credit's unique road. Positive feedback and self-reinforcing dynamics created strong inertial forces that helped cement that route toward enactment and future renewals. Industrial associations played a central role in encouraging Congress to extend, expand, and perpetuate the research credit program.³⁰⁸ In these sequences, initial strides made it difficult to divert from that path.

C. REACTIVE SEQUENCES OF RENEWALS

Why was the research credit maintained as a temporary provision over so many years? Much of it was priority-driven inertia.³⁰⁹ First, the temporary label offered budgetary flexibility and the opportunity to look for offsetting mechanisms to the high

³⁰⁵ See Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, § 221, 95 Stat. 172, 241–47 (codified as amended at 26 U.S.C. § 44F (1982)).

³⁰⁶ Under the program, firms were, and still are, allowed a dollar-for-dollar offset of income taxes for additional investment in research. 26 U.S.C. § 44F (1982); 26 U.S.C. §§ 38(c), 46 (2018) (stating how to calculate the credit).

³⁰⁷ See STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 119 (Comm. Print 1981) (“[T]he ‘civilian’ research/GNP ratio for the United States is 1.5 percent, compared with 1.9 percent for Japan and 2.3 percent for West Germany.”).

³⁰⁸ For example, small business tried to expand the new research credit route even further by making it refundable. See *The Role of Small Business in the Nation’s Economic Recovery: Hearing Before the S. Select Comm. on Small Bus.*, 97th Cong. 71 (1981) (statement of David Tonneson, Certified Public Accountant, Tonneson, Mela, Curtin & Co., Wakefield, Mass.) (“[The Smaller Business Association of New England, Inc.] endorses a refundable tax credit of at least 10 percent against any incremental expenditures for research and development.”).

³⁰⁹ See *supra* notes 66–73 and accompanying text.

fiscal price tag that came with it.³¹⁰ Second, the government needed to evaluate the operation and efficacy of the research credit and assess whether it indeed stimulated additional research expenditures or simply rewarded firms for their everyday research efforts.³¹¹ Lastly, the research credit was rather complex and required policy expertise.³¹² The periodic review gave legislators opportunities to appraise the credit, receive input from constituents, and refine the legislation.³¹³ Yet, the temporary marker incentivized legislators to “kick the can down the road” and simply renew this intricate fiscal mechanism rather than terminate or permanently add it to the U.S. Code.

A path of reactive sequences—casually connected renewals, each a reaction to a temporally antecedent expiration event—ensued and created a legislative inertial process of multiple mechanical extensions. The 1981 Act set the original research credit to expire at the end of 1985.³¹⁴ Yet, soon after, the program lapsed in anticipation of comprehensive reform. Congress made the first significant set of changes to the original credit in the 1986 reform (the biggest tax reform to this day), which marked another “critical juncture” in the history of the temporary legislation.³¹⁵ The 1986

³¹⁰ See *supra* notes 262–264 and accompanying text.

³¹¹ See DAVID L. BRUMBAUGH, CONG. RESEARCH SERV., IB92039, THE RESEARCH AND EXPERIMENTATION TAX CREDIT 2–3 (1993) (discussing what led up to the Congressional action taken on the Research and Experimentation tax credit); STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 121 (Comm. Print 1981) (maintaining the temporariness of the credit as a way to test its efficiency).

³¹² See STAFF OF THE J. COMM. ON TAXATION, 97TH CONG., GENERAL EXPLANATION OF THE ECONOMIC RECOVERY TAX ACT OF 1981, at 121 (Comm. Print 1981) (noting that the expiring nature of the law would give Congress the opportunity to assess whether taxpayers and the IRS were “able accurately to distinguish qualifying research expenditures from nonqualifying research-related expenditures”).

³¹³ In the case of the research credit, it allowed for periodic examination and review of categories of qualifying research expenditures and base period, as well as controversies between taxpayers and the IRS. *Id.*; see BRUMBAUGH, *supra* note 311, at 2 (discussing amendments to the research and experimentation tax credit).

³¹⁴ Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, § 221, 95 Stat. 172, 241–47. For a detailed legislative history of the research credit, see *infra* Appendix.

³¹⁵ Tax Reform Act of 1986, Pub. L. No. 99-514, § 231, 100 Stat. 2085, 2173; see also NONNA A. NOTO, CONG. RESEARCH SERV., IB87010, TAX REFORM EFFECTS 2 (1987) (surveying the impact of the 1986 reform); Rodger A. Bolling, Surendra P. Agrawal & Thomas G. Hodge, *The Tax Reform Act of 1986: Simplification or Complication?*, 39 TAX EXECUTIVE 235, 239 (1987)

reform was portrayed as revenue-neutral as it lowered the individual income tax and offset it with increased revenues from the repeal of many business incentives.³¹⁶ Surprisingly, the 1986 Reform did not repeal the research credit but extended it retroactively through December 31, 1988.³¹⁷ While the research credit survived the far-reaching 1986 Reform, its distant temporary relative, the investment credit, did not. The reason for abolishing the investment credit was neutrality.³¹⁸ The investment credit “favored investment in machines with relatively short useful lives.”³¹⁹ Thus, it encouraged businesses to invest in equipment rather than other more economically efficient technologies.

The repeal of the investment credit served as an important turning point for the research credit program. Technology and innovation assumed a central position in tax policy discourse due to their assumed contribution to economic development and the rise in the standard of living. Accordingly, it appears Congress acknowledged, for the first time, that the culture of research and experimentation was prioritized over other policies, including the goal of maintaining tax neutrality. The research credit portrayed the improved “2.0” model of the investment credit targeting a more direct, long-term effect on the economy. The choice not to divert from the research credit’s initial path in the 1986 reform underscored the importance of maintaining a culture of technological innovation. Once a culture that glorified scientific

(“[T]he 1986 Act is the most sweeping tax legislation in the 73-year history of the Internal Revenue Code.”).

³¹⁶ The main aspects of the 1986 reform included lowering income tax rates and broadening the tax base by eliminating or restricting deductions, exclusions, and credits. See Ajay K. Mehrotra & Joseph J. Thorndike, *From Programmatic Reform to Social Science Research: The National Tax Association and the Promise and Perils of Disciplinary Encounters*, 45 LAW & SOC’Y REV. 593, 620–21 (2011) (describing the public atmosphere regarding the 1986 reform).

³¹⁷ Tax Reform Act of 1986, Pub. L. No. 99-514, § 231, 100 Stat. 2085, 2173 (amending the credit through 1988). The Tax Reform made the credit part of the general business credit, thereby subjecting it to a yearly cap. *Id.* § 231, 100 Stat. at 2173. In addition, it lowered the credit to 20% and modified the definition of qualified research expenses. *Id.* The 1986 reform also created a separate 20% incremental tax credit for corporate expenditures to support basic research payments to universities and non-profit organizations. *Id.* § 231, 100 Stat. at 2175.

³¹⁸ See NOTO, *supra* note 315, at 5 (“A major reason the investment credit was repealed was to eliminate its distortions of investment choices.”).

³¹⁹ *Id.*

research was established, corresponding industrial associations self-reinforced the path of the research credit program, as the next Part demonstrates.

V. SELF-REINFORCED INERTIA

The research credit was extended for one more year by the Technical and Miscellaneous Revenue Act of 1988.³²⁰ A year later, the research credit was further prolonged in the Omnibus Budget Reconciliation Act of 1989, which also made the research credit more accessible for start-up firms.³²¹ Congress routinely continued the research credit's temporary inertial route using extensions and renewals.³²² As this Part will reveal, these reactive sequences became locked-in and resistant to change through the efforts of organizations and associations that self-reinforced the program's expansion. The wide support given to the research credit prior to its creation did not dwindle but grew and encompassed additional supporters as its path expanded. New coalitions encouraged shifting government funds to commercialize science and technology.³²³ Organizations delivered positive feedback via collective action and strong rhetoric to encourage more participants to utilize the program. The research credit's path perpetuated itself with the utmost inertial strength.

Accordingly, over the years, the research credit received bipartisan support in spite of its high budgetary price tag.³²⁴ While

³²⁰ Technical and Miscellaneous Revenue Act of 1988, Pub. L. No. 100-647, § 4007, 102 Stat. 3342, 3652. In addition, it curtailed the benefit to firms by obligating them to reduce their expensing claimed under § 174 by fifty percent of the combined amount of the credits. *See id.* at § 1002(h)(1), 102 Stat. at 3370.

³²¹ Pub. L. No. 101-239, § 7110(a)(1)–(c)(3), 103 Stat. 2106, 2322–23 (extending the research credit from January 1, 1990 to December 31, 1990 and providing a special provision for start-ups).

³²² *See infra* Appendix.

³²³ *See* Sheila Slaughter & Gary Rhoades, *The Emergence of a Competitiveness Research and Development Policy Coalition and the Commercialization of Academic Science and Technology*, 21 SCI. TECH. & HUM. VALUES 303, 304 (1996) (comparing the historical support for research granted by the defense and health coalitions).

³²⁴ *See* Exec. Office of the President, *Statement of Administration Policy: H.R. 880 – American Research and Competitiveness Act of 2015* (May 19, 2015), https://obamawhitehouse.archives.gov/sites/default/files/omb/legislative/sap/114/saphr880r_

both political parties supported extending the credit, disagreement between Republicans and Democrats arose often over whether and how to offset the revenue cost of this expensive measure.³²⁵ No party dared to repeal a popular apparatus to support “white-coats” engaged in scientific advancements that drive future economic growth.³²⁶ Technology and innovation, by that time, were deeply embedded values in the American culture. Self-reinforcement dynamics of coalitions, professional organizations, and industrial associations engaged in paving the path for the research credit and, once it was created, molded it over the years toward permanency.³²⁷ While such overreaching inertial forces existed in the case of the research credit, they did not in circumstances surrounding other temporary legislation, such as the late investment credit.³²⁸

A. NON-PROFIT ORGANIZATIONS AND FEDERAL AGENCIES

In 1993, the Economic Strategy Institute (ESI), a non-partisan public policy research organization dedicated to assuring minimal market distortions,³²⁹ reported to the President that government-spending priorities should focus on providing more incentives for private investment in research.³³⁰ ESI also reiterated the

20150519.pdf (rejecting a permanent extension unless the cost will be offset with other revenue measures).

³²⁵ See GARY GUENTHER, CONG. RESEARCH SERV., RL31181, RESEARCH AND EXPERIMENTATION TAX CREDIT: CURRENT STATUS AND SELECTED ISSUES FOR CONGRESS 12–14 (2008) (describing how Republican leadership retroactively extended the research credit and certain other preferences through 2009).

³²⁶ See Martin A. Sullivan, *Research Credit Hits New Heights, No End in Sight*, 94 TAX NOTES 801, 801–03 (2002) (describing the fluctuating regulations on the research credit over time, and specifically, the shift between the Clinton Administration’s regulations and the Bush Administration’s regulations).

³²⁷ See *id.* at 802 (describing the involvement of businesses in advocating for specific changes in the research credit’s regulation with Congress and executives both during the Clinton Administration and the Bush Administration).

³²⁸ For a short list of temporary legislation that did not survive, see *supra* note 17.

³²⁹ See *Who We Are*, ECON. STRATEGY INST., <https://www.econstrat.org/about-us/who-we-are> (last visited Apr. 21, 2021) (“[ESI] is a private, non-profit, non-partisan public policy research organization dedicated to assuring that globalization works with market forces to achieve maximum benefits rather than distorting markets, and imposing costs.”).

³³⁰ See *The 1993 Economic Report of the President: Hearings Before the J. Econ. Comm.*, 103d Cong. 17 (1993) [hereinafter *The 1993 Economic Report of the President*] (statement of Lawrence Chimerine, Senior Economic Counselor, DRI/McGraw Hill and Fellow, Economic

importance of encouraging more public-private partnerships to fund research collaboration in government-owned facilities.³³¹ The Committee for Economic Development (CED)—a non-partisan, business-led, public policy organization—prioritized federal spending programs during the 1990s.³³² While scrutinizing other programs, CED reaffirmed the research credit, citing studies showing that technology is a major source of improved living standards.³³³ The CED acknowledged that civilian research expenditures, as a percent of GNP, had been quite weak during the last decade.³³⁴ It advocated using the federal deficit to reverse the low savings rate via the research credit program.³³⁵ Steven A. Zimmer, a senior economist at the N.Y. Federal Reserve Bank, discussed the cost of technology capital before the House Subcommittee on Technology and Competitiveness in 1992.³³⁶ Zimmer recounted that firms were disadvantaged when investing in research projects, which tend to have a higher cost of capital.³³⁷ Thus, in his eyes, a research credit program was important to eliminate most of such hindrances.³³⁸

Indeed, the periodic expiration of the research credit provided opportunities for government and industry to question and

Strategy Institute) (“R&D . . . means providing more incentives for private investment through more tax credits . . .”).

³³¹ See *id.* at 50 (“Combined public-private investment initiatives could also provide an immediate boost to the economy.”).

³³² See *Investment Incentives and Capital Costs: Hearing Before the Subcomm. on Tech. & Competitiveness of the H. Comm. on Sci., Space, & Tech.*, 102d Cong. 25 (1992) [hereinafter *Investment Incentives and Capital Costs*] (statement of William Beeman, Vice President and Director of Economic Studies, Committee for Economic Development) (describing the priorities of the CED).

³³³ See *id.* at 21, 25 (opposing “fiscal stimulus” but stating that “[i]nadequate investment in productive physical capital, education and training, and scientific research and technology have been major contributing factors to the slowdown in the growth of productivity”).

³³⁴ See *id.* at 25 (discussing the reasons for “unsatisfactory” economic performance).

³³⁵ See *id.* at 29 (stating that, among other programs, “CED has placed the highest priority on . . . [m]easures that encourage research and development”).

³³⁶ *Id.* at 69 (statement of Steven A. Zimmer, Senior Manager, Warburg Investment Management International).

³³⁷ See *id.* at 71 (noting that smaller firms “have a tough time supporting the fixed cost of something like research and development spending”).

³³⁸ See *id.* at 72 (claiming that the cost of capital for research and development can be reduced with an effective tax credit of twenty percent).

reexamine the program's efficacy.³³⁹ Was the research credit indeed effective in spurring investments in research that otherwise would not have occurred? Throughout the years, those in favor, and the few that criticized the research credit, used various empirical studies regarding the credit's effectiveness.³⁴⁰ For example, the U.S. General Accounting Office published a study concluding that the credit positively increased research spending.³⁴¹ The NSF followed suit, emphasizing the beneficial patterns of amplified research expenditures in government, civilian, and university sources since the enactment of the research credit program.³⁴² Yet, the

³³⁹ See U.S. GEN. ACCT. OFFICE, GGD-89-114, TAX POLICY AND ADMINISTRATION: THE RESEARCH TAX CREDIT HAS STIMULATED SOME ADDITIONAL RESEARCH SPENDING 3 (1989) (concluding that the research credit economically justifies its cost); Martin A. Sullivan, *The Research Credit: A Perfect Example of an Imperfect Code*, 85 TAX NOTES 128, 130 (1999) (citing to a list of economists that claim to prove the research credit's efficiency); Philip G. Berger, *Explicit and Implicit Tax Effects of the R&D Tax Credit*, 31 J. ACCT. RES. 131, 167 (1993) (finding that the research credit incentivized additional spending above its cost to the government); Nick Bloom, Rachel Griffith & John Van Reenen, *Do R&D Tax Credits Work? Evidence from a Panel of Countries 1979–1997*, 85 J. PUB. ECON. 1, 2 (2002) (finding that the research credit is effective in increasing R&D intensity); Robert D. Atkinson, *Expanding the R&E Tax Credit to Drive Innovation, Competitiveness and Prosperity*, 32 J. TECH. TRANSFER 617, 619 (2007) (“[A]lmost all scholarly studies . . . have found that the credit is an effective tool and that at minimum it produces at least one dollar of research for every tax dollar forgone.”); BRONWYN H. HALL, EFFECTIVENESS OF RESEARCH AND EXPERIMENTATION TAX CREDITS: CRITICAL LITERATURE REVIEW AND RESEARCH DESIGN 24 (1995), <https://eml.berkeley.edu/~bhhall/papers/BHH95%20OTArtax.pdf> (arguing that the research credits induce R&D that covers their cost); see also Emily Chasan, *CFOs Warn Investors on Impact of Expired R&D Tax Credit*, WALL ST. J. (Jan. 22, 2014, 5:00 PM), <https://www.wsj.com/articles/BL-CFOB-5087> (reporting that the temporary credit had a positive effect on the firm's earnings); Joe Harpaz, *R&D Tax Credit Expiry Rears Its Head in Corporate Earnings Reports*, FORBES (May 1, 2014, 1:39 PM), <https://www.forbes.com/sites/joeharpaz/2014/05/01/rd-tax-credit-expiry-rears-its-head-in-corporate-earnings-reports/?sh=4f836e0f5716> (same). But see Robert Eisner, Steven H. Albert & Martin A. Sullivan, *The New Incremental Tax Credit for R&D: Incentive or Disincentive?*, 37 NAT'L TAX J. 171, 181 (1984) (finding no “positive impact” between the research credit and R&D expenditures).

³⁴⁰ See *supra* note 339.

³⁴¹ See U.S. GEN. ACCT. OFFICE, GGD-89-114, TAX POLICY AND ADMINISTRATION: THE RESEARCH TAX CREDIT HAS STIMULATED SOME ADDITIONAL RESEARCH SPENDING 3 (1989) (“[E]ach dollar of taxes foregone stimulated between 15 and 36 cents of research spending.”).

³⁴² See *National Patterns of R&D Resources: 1994*, NAT'L SCI. FOUND., <https://wayback.archive-it.org/5902/20150629163238/http://www.nsf.gov/statistics/s2194/highlig3.htm> (last visited Mar. 14, 2021) (quantifying R&D spending in each sector). The NSF reported that after a long-time stagnation in research expenditures during the 1970s, the

Congressional Research Service (CRS) challenged the credit's effectiveness.³⁴³ CRS staff economists doubted whether the program was the best way to support research: they believed that direct funding of research projects could be more cost-effective than the research credit itself.³⁴⁴ Moreover, research conducted by firms whose research expenditures were shrinking, and were not entitled to claim the credit, might have been equally valuable to firms that were eligible to utilize it.³⁴⁵ The CRS maintained that the non-refundability of the credit restricted its effect to large, established firms with positive tax liabilities, viewing the multiplicity of benefits for research as unwarranted.³⁴⁶

With the commencement of a new century, the growth of e-commerce continued to cultivate the status of scientific advancements and global technological competitiveness.³⁴⁷ This culture was imperative in cementing the inertial path of the research credit. Representatives across the political spectrum emphasized the importance of maintaining the U.S. position in

1980s marked a significant increase in industry research expenditures. *National Patterns of R&D Resources: 1994*, NAT'L SCI. FOUND., <https://wayback.archive-it.org/5902/20150628165518/http://www.nsf.gov/statistics/s2194/conten1.htm> (last visited Mar. 14, 2021). In ten years, private research outlays in 1990 doubled from their 1980 level. *National Patterns of R&D Resources: 1994*, NAT'L SCI. FOUND., <https://wayback.archive-it.org/5902/20150629163247/http://www.nsf.gov/statistics/s2194/conten1b.htm> (last visited Mar. 14, 2021).

³⁴³ See DAVID L. BRUMBAUGH, CONG. RESEARCH SERV., 92-273 E, TAX PROVISIONS EXPIRING IN 1992, at 3 (1992) (arguing that "a tax credit may not be the best way" for the government to support research).

³⁴⁴ See *id.* ("Some have argued that direct funding of research projects may be more cost effective than the R&E credit.").

³⁴⁵ See GUENTHER, *supra* note 325, at 20 (finding that the research credit "was most beneficial to firms whose research intensities had grown since their base periods and least beneficial to firms whose research intensities had changed little, not at all, or shrunk since their base periods").

³⁴⁶ Firms were already permitted to use immediate expensing of their research outlays in the same year those expenses were incurred. *Id.* at 7.

³⁴⁷ See generally Henry Kissinger, *Making a Go of Globalization: For Free Trade to Work, Political Imagination Must Match Economic Growth*, WASH. POST, Dec. 20, 1999, at A33 (discussing how to attain economic growth in a time of growing globalization); Ann Scott Tyson, *Should World Wide Web Be a Tax-Free Zone?*, CHRISTIAN SCI. MONITOR (Feb. 28, 2000), <https://www.csmonitor.com/2000/0228/p3s1.html> (quoting e-commerce advocates claiming that a ban on Internet taxes is critical for growth).

international competition.³⁴⁸ Policymakers from both parties believed technology would enable the United States to compete in the future global market.³⁴⁹ This ethos facilitated a bipartisan agreement that maintaining the research credit program was essential.³⁵⁰ For example, by the start of a new millennium, House Speaker Dennis Hastert (R-IL), Minority Leader Dick Gephardt (D-MO), Senate Majority Leader Trent Lott (R-MS), Minority Leader Tom Daschle (D-SD), Vice President Al Gore (D), and Governor George W. Bush (R-TX) all endorsed continuing the research credit and expanding its scope.³⁵¹ The Joint Committee on Taxation routinely supported extending the research credit program for its purported benefits in reversing declining research trends.³⁵² The Joint Committee even went as far as encouraging legislators to make the research credit program permanent in order to increase certainty for firms currently utilizing it.³⁵³

³⁴⁸ See, e.g., Alison Mitchell, *White House and Senate in Trade Accord*, N.Y. TIMES, May 10, 2002, at A30 (discussing Democrats' proposal to provide health insurance subsidies for workers who lost jobs because of international competition); Sander Levin, *Derailing a Consensus on Trade*, WASH. POST, Dec. 5, 2001, at A29 (reporting a House Republican leadership initiative on a trade bill that handled international trade standards).

³⁴⁹ See Anne Swardson, *A Better Blend of Transatlantic Competition*, WASH. POST, July 2, 2000, at B1 (discussing the EU and U.S. relationship over technological disputes); Bob Davis & Gerald F. Seib, *Technology Will Test a Washington Culture Born in Industrial Age*, WALL ST. J., May 1, 2000, at A1 (citing the President's agenda under the New Economy policy to break concentration of technological power); Bill Joy, *Technology Check*, WASH. POST, Apr. 18, 2000, at A29 (suggesting policies to handle rapidly accelerating technological progress).

³⁵⁰ See *Investment Incentives and Capital Costs*, supra note 332, at 115 (statement of Peter Friedman, President, Photonics Imaging, Inc., representing the American Electronics Association) ("In a business environment where R&D cycles are calculated in years, and products lives are calculated in months, a permanent [Research and Development Tax Credit] is essential.").

³⁵¹ See *The Tax Code and the New Economy: Hearing Before the Subcomm. on Oversight of the H. Comm. on Ways & Means*, 106th Cong. 101 (2000) [hereinafter *The Tax Code and the New Economy*] (statement of R. Randall Capps, Corporate Tax Director, and General Tax Counsel, Electronic Data Systems Corporation, Plano, Texas) (noting that these politicians "have all endorsed the permanent R&D credit").

³⁵² See STAFF OF THE J. COMM. ON TAXATION, 106th CONG., DESCRIPTION OF REVENUE PROVISIONS CONTAINED IN THE PRESIDENT'S FISCAL YEAR 2000 BUDGET PROPOSAL 114-22 (Comm. Print 1999) (advocating for the extension of the research tax credit to encourage incremental research projects with increased long-term financial risk).

³⁵³ See *id.* at 123 ("A credit of longer duration may more successfully induce additional research than would a temporary credit, even if the temporary credit is periodically renewed.").

B. INDUSTRY LEADERS AND PROFESSIONAL TRADE ASSOCIATIONS

Over the years, the path of the research credit became more stable and harder to divert.³⁵⁴ Industry leaders and professional organizations played a key role in sustaining increasing returns and positive feedback dynamics for repeated extensions of the research credit program.³⁵⁵ Their member firms came to rely on the research subsidy, and as more firms utilized the program, its path entrenched and expanded. These organizations used three main justifications for the need to make the research credit permanent: First, the temporary nature of the program increased its uncertainty and made relying on it difficult because projects were multi-year commitments.³⁵⁶ Managers and decisionmakers needed assurance that the credit would be available during the upcoming years as the research would continue.³⁵⁷ Second, due to their long-term nature, research projects have stretched schedules that develop over several years. Accordingly, firms faced long lags in harvesting returns on their research investments compared to ordinary investments in capital; they demanded stability rather than the practice of periodically extending the credit for short periods or allowing it to lapse.³⁵⁸ Lastly, assuring the research credit would be available past administrative audit was a big hurdle. The

³⁵⁴ See NORTH, *supra* note 220, at 100 (describing the interaction between organizations and institutions (rules and procedures)).

³⁵⁵ See, e.g., Peter Passell, *The Tax Credit for Research and Development: Free Lunch*, N.Y. TIMES, Feb. 5, 1998, at D2 (“[T]he academy is solidly behind the tax credit for research and development because it offsets what is widely viewed as the systemic failure of free markets to allocate adequate resources to research and development. Study after study has found that corporations capture only about half of the gain from in-house innovation, with the rest going to other businesses or to consumers.”); John Markoff, *U.S. Planning to Extend Tax Credit for Research*, N.Y. TIMES, Jan. 29, 1998, at A21 (“While economists have said that the effects of the tax credit have been diminished because the yearly extensions have made it difficult for companies to plan, studies have shown that the credit does have a significant effect on the economy.”).

³⁵⁶ See *supra* note 353.

³⁵⁷ See STAFF OF THE J. COMM. ON TAXATION, 106TH CONG., DESCRIPTION OF REVENUE PROVISIONS CONTAINED IN THE PRESIDENT’S FISCAL YEAR 2000 BUDGET PROPOSAL 122–23 (Comm. Print 1999) (“If a taxpayer considers an incremental research project, the lack of certainty regarding the availability of future credits increases the financial risk of the expenditure.”).

³⁵⁸ See *supra* note 350.

credit's temporary nature and transitional rules increased its (already high) complexity and its surrounding controversy.³⁵⁹ Thus, managers sought to resolve these major issues while Congress considered making the credit permanent.

Newspaper articles reinforced these points by noting the uncertainty and shortage in long-term capital investments in research.³⁶⁰ Congress needed to redesign research incentives to spur savings over consumption and provide productive investment over speculation.³⁶¹ *Fortune Magazine* published a cover article that compared the competitiveness of firms in thirteen key industries in the United States, Japan, and Europe.³⁶² The United States was ranked last in electronics.³⁶³

The government justified continuing research subsidies under the claim that the market fails to allocate resources for research efficiently.³⁶⁴ This was said to cause the level of private spending on research to fall short of the amount that is warranted by the social benefits of research.³⁶⁵ Patents that protect developers' investments

³⁵⁹ See Passell, *supra* note 355 (“The . . . uncertainty has made it harder for companies to forecast their costs, net of credits, on long-term research projects. And while the impact on private research budgets is unclear, uncertainty has probably cut outlays.”).

³⁶⁰ See, e.g., *supra* notes 238–241, 355, 359 and accompanying text.

³⁶¹ See *Executives Urge Tax Incentives and Cut in U.S. Budget, but Congressmen Demur*, WALL ST. J., Sept. 20, 1974, at 3 (describing a potential tax imposed on profits “unless a concern diverts profits to research and development or capital spending projects”).

³⁶² Andrew Kupfer & Jessica Skelly von Brachel, *How American Industry Stacks Up*, FORTUNE, Mar. 9, 1992, at 30.

³⁶³ See *id.* (describing the U.S. consumer electronics industry as sinking “[l]ike a rock”).

³⁶⁴ See U.S. CONG. BUDGET OFFICE, FEDERAL SUPPORT FOR R&D AND INNOVATION xi (1984) (“[T]he government seeks to foster innovation by establishing conditions conducive to innovative activity, . . . R&D provides the scientific and technical advances needed to sustain rapid rates of innovation.”); *id.* at 10 (“The . . . argument favoring governmental funding of R&D is based on the alleged inadequacy of the R&D carried out by the private sector, mainly because private businesses are generally unable to retain all the economic benefits of the R&D that they fund.”); U.S. GEN. ACCT. OFFICE, GGD-89-114, TAX POLICY AND ADMINISTRATION: THE RESEARCH TAX CREDIT HAS STIMULATED SOME ADDITIONAL RESEARCH SPENDING 2 (1989) (“Lawmakers wanted to provide an incentive for businesses to invest in research because they were concerned about the competitiveness of American firms.”).

³⁶⁵ The reason given for such market shortage was that some types of research required immense sums of capital, were too uncertain, or were difficult to evaluate accurately due to lack of information or expertise. See BRUMBAUGH, *supra* note 343, at 3 (“[W]ithout government support private industry invests less in research than is warranted by society’s needs.”).

in knowledge ultimately expire, and others reproduce the invention and appropriate part of its return.³⁶⁶ Accordingly, the total return to society from research is often greater than the return that accrues to the firm that originated the investment in research.³⁶⁷ This form of market failure for innovations was said to preclude firms from undertaking research even though it is warranted by its immense return to society.³⁶⁸

The Semiconductor Industry Association was particularly conducive in endorsing renewals of the research credit. While doing so, it self-reinforced its own existence by encouraging more participation in the program and preserving important benefits to its members.³⁶⁹ After the collapse of the Soviet Union, Japan's high-technology sector continued to pose the greatest competitive challenge to the telecommunications and computer industries.³⁷⁰ To

³⁶⁶ See Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 991 (1997) (providing an overview of the relationship "between the rights of original developers and the rights of subsequent improvers"); see also A. Samuel Oddi, *Un-Unified Economic Theories of Patents—The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 273–85 (1996) (discussing the various theories on how patent rights serve as incentives for innovative activity).

³⁶⁷ See BRUMBAUGH, *supra* note 343, at 3 (explaining that markets "may not function optimally in the case of research"). On the uncertainty that is involved in innovation, see Mirit Eyal-Cohen, *Through the Lens of Innovation*, 43 FLA. ST. U. L. REV. 951, 978–81 (2016).

³⁶⁸ See BRUMBAUGH, *supra* note 343, at 3 ("[W]ithout government support private industry invests less in research than is warranted by society's needs. The shortfall can be important. The advances in technology spawned by R&D can result in increased productivity—a leading source of gains in the Nation's standard of living."); see also U.S. CONG. BUDGET OFFICE, *supra* note 364, at xi ("The substantial government subsidies provided for research and development are justified on the grounds that the government should support R&D projects that are socially desirable but that are unlikely to be funded by private firms."); U.S. GEN. ACCT. OFF., GGD-89-114, TAX POLICY AND ADMINISTRATION: THE RESEARCH TAX CREDIT HAS STIMULATED SOME ADDITIONAL RESEARCH SPENDING 22 (1989) ("R&E expenditures may generate benefits to society beyond those realized by companies that make these expenditures. If the activities encouraged by the credit are more beneficial to society than the activities discouraged by the additional taxes needed to fund the credit, then the credit is acceptable tax policy.").

³⁶⁹ See *Tax Incentives for Exports*, *supra* note 251, at 202 (statement of John Nesheim, Treasurer, National Semiconductor Corp., Santa Clara, Calif.) ("New products, new technological innovations and, indeed, whole new industries might well be created as a result of increased research. . . . [P]roviding an investment tax credit for R. & D. expenditures will help to make available to U.S. businesses some of the capital which will enable the businesses to modernize and maintain our all-important technology lead.").

³⁷⁰ Structural differences between the countries' economic environments provided Japan significant export competitive advantages over the United States and other nations. See U.S.-

survive, semiconductor companies had to innovate and invest in high levels of research and development.³⁷¹ Yet, such investments, the Association noted, were highly uncertain, while new facilities quickly became obsolete.³⁷² Self-funding was the industry's main problem. Three quarters of American tech companies' new capital at that time came from the reinvestment of after-tax earnings.³⁷³ Most companies paid "little or no dividends."³⁷⁴ They sought tax reductions to generate new capital to reinvest in new technology rather than to transfer to investors.³⁷⁵ Such testimonies and statements were instrumental in reinforcing the research credit's path. Congressional representatives acknowledged the challenges of the semiconductor industry and committed to advocate for government support of technological research.³⁷⁶

Consequently, the inertial path of the research credit persisted vigorously into its second decade of its existence. Congress extended the research credit in the Omnibus Budget Reconciliation Act of 1990³⁷⁷ and the Tax Extension Act of 1991.³⁷⁸ Delegates from the American Electronics Association (AEA)—a trade association

Japanese Economic Relations: Hearings Before the Subcomm. on Int'l Trade, Fin., & Security Econ. of the J. Econ. Comm., 97th Cong. 81–82 (1981) [hereinafter U.S.-Japanese Economic Relations] (statement of George Scalise, Senior Vice President, Advanced Micro Devices Inc., in Sunnyvale, Calif.) ("[T]hese structural differences constitute the greatest threat to long-term viability of the U.S. industry.").

³⁷¹ See *Tax Cut Proposals*, *supra* note 236, at 1324 (statement of John Nesheim, Corp. Treasurer, Nat'l Semiconductor Corp. on behalf of the Semiconductors Industry Ass'n) ("In order to survive, a semiconductor company must innovate and invest for the future. The industry must support very high levels of research and development.").

³⁷² See *id.* at 1324 ("[T]he new facilities will be obsolete in just a few years.").

³⁷³ *Id.* at 1332.

³⁷⁴ *Id.*

³⁷⁵ See *id.* ("If Congress would provide us the kinds of incentives through the tax system that other countries provide . . . , we would overcome much of our growing competitive disadvantages as we seek to retain the U.S. lead in semiconductor technology. More needs to be done—especially in capital formation and trade policy—and tax reform is needed promptly in this aggressive, fast moving industry.").

³⁷⁶ See, e.g., *U.S.-Japanese Economic Relations*, *supra* note 370, at 81 (statement of Rep. Frederick W. Richmond) ("I . . . would like to do everything that we possibly can to help keep the semiconductor business here in the United States. After all, we invented it; didn't we?").

³⁷⁷ Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, § 11402 (a), 104 Stat. 1388, 1388–473 (extending the research credit for one more year).

³⁷⁸ Tax Extension Act of 1991, Pub. L. No. 102-227, § 102(a), 105 Stat. 1686, 1686 (extending the research credit for six more months).

founded in 1943 to represent the technology industry, including firms like IBM, AT&T, Motorola, and others—testified before the House Committee on Science, Space, and Technology.³⁷⁹ The AEA delegates reinforced the Association’s own existence by claiming that high-technology companies were being hindered by the short-term mentality of investors when these companies required long-term capital investments, especially those involving research.³⁸⁰ The great uncertainty surrounding long-term research investments made it virtually impossible to raise large sums of capital.³⁸¹ The AEA went on to fault the United States for being “the only country that does not protect industries which have some strategic value.”³⁸² Three months before its scheduled expiration, the AEA urged Congress not only to continue the research credit’s path but to expand it. It advocated for the adoption of a permanent and more aggressive research credit program to prevent American companies from moving research overseas.³⁸³

Yet, some managers, such as Hewlett Packard, admitted that they considered the research credit so unusable that they no longer calculated it into their long-range cost analyses.³⁸⁴ Similarly, industry leader George Hatsopoulos—chairman of Thermo-Electron (today Thermo-Fisher Scientific)—confessed that, for his firm, the effect of the research credit was like a drop in the sea.³⁸⁵ While he appreciated the extra tax savings, he admitted the credit really did

³⁷⁹ See *Investment Incentives and Capital Costs*, *supra* note 332, at 102–17 (statement of Peter Friedman, President, Photonics Imaging, Inc.) (testifying on behalf of the AEA).

³⁸⁰ See *id.* at 112 (“Instead of being challenged on how we can bring our R&D to the marketplace, we are being dismissed by Wall Street . . . because we cannot promise returns before the next quarterly statement.”).

³⁸¹ See *id.* (explaining that, for high-tech companies, “it is virtually impossible to raise money on Wall Street” due to investors’ “short-term mentality”).

³⁸² *Id.* at 103.

³⁸³ See *id.* at 113 (“[T]he AEA . . . strongly supports tax policies that encourage investment in R&D and manufacturing.”). The AEA advocated for a fifty-percent credit, claiming such an increase was necessary to ensure the program’s effectiveness. *Id.*

³⁸⁴ See Rick Wartzman, *Whether or Not They Benefit, Companies Decry Instability in Tax Law as a Barrier to Planning*, WALL ST. J., Aug. 10, 1993, at A16 (citing managers responding to the extension of the research credit).

³⁸⁵ See *Investment Incentives and Capital Costs*, *supra* note 332, at 71 (statement of Steven A. Zimmer, Senior Manager, Warburg Investment Management Int’l) (stating that he met with Mr. Hatsopoulos and recorded his reaction).

not “enter into [the firm’s] marginal decision to invest at all.”³⁸⁶ The reasons for that were twofold: First, the credit’s small size made it less relevant to company executives.³⁸⁷ Second, the credit involved much uncertainty as a temporary provision.³⁸⁸ Even if a firm claimed the credit in one year and included it as a base year for the future, it could harm the firm in the long run. Therefore, some firms’ decisionmakers disregarded the research credit. Hatsopoulos proposed to alter the path and provide a five percent credit on *total* research spending, which would have far more impact than the existing *incremental* twenty percent research credit.³⁸⁹ He also supported a refundable research credit.³⁹⁰ These proposals did not gain traction.³⁹¹

During the 1990s, the research credit continued its inertial path despite its high fiscal price and severe budgetary pressures during that period.³⁹² In 1992, President George H.W. Bush vetoed a bill that included an extension of the research credit for reasons that had nothing to do with the credit.³⁹³ President Bush proposed an

³⁸⁶ *Id.*

³⁸⁷ *Id.*

³⁸⁸ *See id.* at 71 (“[He] was worried if he brought it up this year, this year might be included as a base year for the future and it could hurt them in the long run.”); *id.* at 76 (“Managers can’t be sure how the rules are going to be changed, and additional R&D spending now could reduce eligibility for credits later.”).

³⁸⁹ *See id.* at 71 (stating that Hatsopoulos said, “[A] 5 percent tax credit on total research and development spending would have far more impact than an incremental 20 percent credit”).

³⁹⁰ *See id.* (“Hatsopoulos said that they appreciate any research and development tax credit . . .”).

³⁹¹ *See* Jonathan Talley, Note, *The Research and Development Tax Credit: Moderately Effective but Hampered by Politics*, 10 DEPAUL BUS. & COM. L.J. 77, 80 (2011) (“[N]o Congress and President have been able to agree on a permanent extension due to the difficulty of reconciling the revenue cost of a permanent extension with other budget priorities.”); Wartzman, *supra* note 384 (citing managers’ responses to the extension of the research credit).

³⁹² *See* Talley, *supra* note 391, at 79–80 (discussing Congress’s trend in the 1990s of continuously extending the research credit only on yearly bases because of “the difficulty of reconciling the revenue cost of a permanent extension with other budget priorities”).

³⁹³ *See* GEORGE BUSH, MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TRANSMITTING HIS VETO OF H.R. 4210, THE “TAX FAIRNESS AND ECONOMIC GROWTH ACCELERATION ACT OF 1992,” H.R. DOC. NO. 102-206, at 1 (1992) (relaying presidential veto of the Act because it would increase taxes for “[m]ore than two-thirds of all taxpayers”); *see*

economic growth program but claimed that Congress had “produced partisan, flawed legislation” that would not create incentives for long-term investment and would increase income taxes for more than two-thirds of taxpayers.³⁹⁴ As a result, the research credit expired on June 30, 1992, and lapsed for the first time, underlining its temporary nature. But it did not lapse for long. Once the political crisis was negotiated, so were the terms of the program extension, and the research credit was retroactively reinstated through June 30, 1995.³⁹⁵ Retroactive renewals are extreme statutory measures, and their repeated practice in the case of the research credit emphasizes the ultimate inertial forces that fueled it.³⁹⁶

In his initiative titled “Rebuild America,” President Clinton made it clear that he prioritized support for the high-tech sector by including an investment program of \$17 billion devoted partly to technology funding for the NSF but mostly to the extension of the research credit program.³⁹⁷ President Clinton also put forth a proposal to bring back the late investment credit again in the form of a temporary program.³⁹⁸ During 1993, the Joint Economic Committee reported another decline in research investments in the United States.³⁹⁹ It warned about a widening gap between U.S.

ECONOMIC GROWTH ACCELERATION ACT OF 1992, H.R. REP. NO. 102-432, at 29 (1992) (proposing a permanent extension of the research credit).

³⁹⁴ GEORGE BUSH, MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TRANSMITTING HIS VETO OF H.R. 4210, THE “TAX FAIRNESS AND ECONOMIC GROWTH ACCELERATION ACT OF 1992,” H.R. DOC. NO. 102-206, at 1 (1992).

³⁹⁵ Small Business Job Protection Act of 1996, Pub. L. No. 104-188, § 1204, 110 Stat. 1755, 1773.

³⁹⁶ See Kysar, *supra* note 138, at 1065 (“[R]etroactive renewals create heavy administrative costs to taxpayers and may even jeopardize financing arrangements.”).

³⁹⁷ See *The 1993 Economic Report of the President*, *supra* note 330, at 133 (statement of the Hon. Laura D’Andrea Tyson, Chair, Council of Economic Advisers) (describing the Rebuild America initiative, including the funding for “the [NSF], science, engineering, and technology grants, . . . and extension of the research and development tax credit”).

³⁹⁸ See *id.* at 131 (proposing the tax credit last for approximately two years). The proposal was meant for businesses with “over \$5 million in gross receipts . . . on all equipment investment above 70% of a historical base (a three-year average).” *Id.* President Clinton proposed a simpler version of that credit for small business. See Sullivan, *supra* note 339, at 128 (describing “the proposed \$10.5 billion extension of the research credit”).

³⁹⁹ See *The 1993 Economic Report of the President*, *supra* note 330, at 5–7 (statement of Rep. David R. Obey, Chairman, J. Econ. Comm.) (illustrating a decline in public and private research investment in the United States).

research outlays compared to the West Germans and Japanese.⁴⁰⁰ The enactment of the Omnibus Budget Reconciliation Act of 1993 (1993 Act) was a response to such concerns, resulting in extending the research credit retroactively once more until June 30, 1995.⁴⁰¹ President Clinton's proposal for the 1993 Act was to make the credit permanent.⁴⁰² The House approved and passed the proposal, but the Senate version of the 1993 Act contained only an extension.⁴⁰³ According to scholars, this was a result of political struggle over the Republican campaign pledge to create a balanced budget.⁴⁰⁴ Notwithstanding its irregular extension cycles and, at times, its utility as a political negotiating tool, the credit's inertial path steadily continued to build due to its increasing return and positive feedback dynamics as more companies used it and called for its permanence.

Congressional delay caused the research credit to expire again on June 30, 1995. Although small mom-and-pop shops did not use the program as often as large high-technology firms, Congress placed the next extension of the research credit in the Small Business Job Protection Act of 1996.⁴⁰⁵ The Act extended the credit and retroactively reinstated it but only from July 1, 1996, leaving the first and last one-year gap in the credit's operation since its inception in 1981. This was a critical juncture that could have ended the path of the research credit. Yet, the inertial forces that maintained the credit since its inception continued its route forward. The reactive sequences of the research credit returned, and although the credit expired in 1997 and 1998, it was extended

⁴⁰⁰ *Id.* at 7.

⁴⁰¹ Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 13111(a)(1), 107 Stat. 312, 420 (extending the research credit from July 1, 1992 to June 30, 1995).

⁴⁰² See BRUMBAUGH, *supra* note 311, at 4 ("President Clinton's budget proposals that were announced in 1993 proposed to make the R&E credit permanent.").

⁴⁰³ Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 13111(a)(1), 107 Stat. 312, 420.

⁴⁰⁴ See Rebecca M. Kysar, *Tax Law and the Eroding Budget Process*, 81 LAW & CONTEMP. PROBS. 61, 65 (2018) (describing the political circumstances around the enactment of the Omnibus Budget Reconciliation Act of 1993).

⁴⁰⁵ Small Business Job Protection Act of 1996, Pub. L. No. 104-188, § 1204(a), 110 Stat. 1755, 1773 (extending the research credit from July 1, 1996 to May 31, 1997).

retroactively once again by the Taxpayer Relief Act of 1997⁴⁰⁶ and the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1998.⁴⁰⁷ The legislative packages in which Congress placed the program serve as evidence of the status quo bias and the length to which legislators went to extend the research credit's inertial path rather than to let it die. Once more, the credit expired in 1999 because of coalition-related priorities and political divide. It was retroactively reinstated and extended until 2004 in the Ticket to Work and Work Incentives Improvement Act of 1999, which Republicans advanced.⁴⁰⁸ That year, Congress emphasized extending expiring provisions, such as the research credit,⁴⁰⁹ and commentators at that time opined that this political push for the five-year extension of the research credit was meant to provide businesspersons certainty.⁴¹⁰

During the years that the credit was due to expire, Congress introduced a dozen bills to permanently extend the credit.⁴¹¹ These cycles and reactive sequences began with organizations, economists, and supporters of the credit emphasizing the importance of technological innovation to the economy.⁴¹² Presidential candidates

⁴⁰⁶ Taxpayer Relief Act of 1997, Pub. L. No. 105-34, § 601(a)(1), 111 Stat. 788, 861 (extending the research credit from May 31, 1997 to June 30, 1998).

⁴⁰⁷ Act of Oct. 21, 1998, Pub. L. No. 105-277, § 1001(a)(1), 112 Stat. 2681, 2681-888 (extending the research credit from June 30, 1998 to June 30, 1999).

⁴⁰⁸ Ticket to Work and Work Incentives Improvement Act of 1999, Pub. L. No. 106-170, § 502(a)(1), 113 Stat. 1860, 1919 (extending the credit from June 30, 1999 to June 30, 2004); see Sullivan, *supra* note 339, at 128 (briefly discussing the political economy of 1999 around the research credit and arguing that the extension of the research credit was closer to a "sure bet" than other options).

⁴⁰⁹ See, e.g., H.R. 2923, 106th Cong. §§ 101-05 (1999) (providing for a five-year extension of research credits).

⁴¹⁰ See, e.g., John M. Bixler & Ronald D. Aucutt, *Washington Report*, 25 ACTEC NOTES 190, 190 (1999) (describing the "ironies of the 1999 long-term extension of the research credit and other expiring provisions"); Ryan J. Donmoyer, *U.S. Senate Finance Committee Prepares to Mark Up Extended Extenders Bill*, TAX NOTES TODAY (Oct. 21, 1999) (explaining the inclusion of "special-interest provisions" in order to pass a package renewing expired tax breaks).

⁴¹¹ See GUENTHER, *supra* note 325, at 31 (illustrating that, in the 110th Congress, twelve bills were introduced to permanently extend the research credit, and another seven would have extended it temporarily).

⁴¹² See, e.g., *id.* at 14 ("Beginning in the mid-1990s, a cycle emerged every time the credits were about to expire. The cycle commences when congressional and business supporters of the credit issue public statements calling for a permanent extension . . ."); Passell, *supra* note 355 (pointing to the political consensus of lobbying to advancing the research credit).

supported a permanent enactment of the research credit ceding to the rhetoric focused on high-technology, science, and innovations.⁴¹³ Eventually, for budgetary reasons, Congress preserved the program but limited its extension to one or two more years.⁴¹⁴

The inertial path of the research credit became locked-in—in cycles of renewal and extensions—because a sufficient number of market players had invested resources in, and became reliant on, the program.⁴¹⁵ It was simply too costly at this point to revert to any alternative route such as competitive grants, private-public collaborations, or the expansion of basic research programs. As time passed, the research program benefitted from greater positive feedback.⁴¹⁶ The more that constituents used the research credit subsidy and supported it, the more the program received backing for its alleged success in spurring additional research. With every cycle of extension and renewal, the program enjoyed increasing returns of its path. As more taxpayers claimed the research credit, their tax professionals became familiar with its intricacies, thus helping to improve its operation.⁴¹⁷ While other programs for direct funding and research collaborations also competed for the same government allocation of funding, high switching costs from the research credit path prioritized it over other alternative options.

Path dependence scholars prescribe that organizations often exercise their influence to prevent change.⁴¹⁸ When organizations represent only certain groups of constituents, they focus on

⁴¹³ See, e.g., Joel Kurtzman, *A Fed Chairman in Search of His Economic Leviathan*, N.Y. TIMES, July 26, 1992, at A2 (“The Perot plan proposed a bullish-on-business five-year moratorium on taxes for startup businesses and a permanent research and development tax credit.”); *supra* note 351.

⁴¹⁴ See GUENTHER, *supra* note 325, at 14 (“[I]n the end, Congress and the President can agree only on a relatively short extension of the credit, stymied by the difficulty of reconciling the revenue cost of a permanent extension with their other budget priorities.”); GARY GUENTHER, CONG. RESEARCH SERV., RL31181, RESEARCH TAX CREDIT: CURRENT STATUS, LEGISLATIVE PROPOSALS, AND POLICY ISSUES 12 (2005) (explaining the “cycle” of credit expiration and extension).

⁴¹⁵ See *supra* notes 354–355 and accompanying text.

⁴¹⁶ See *supra* Section IV.A.

⁴¹⁷ See, e.g., *supra* notes 339–341, *infra* notes 422–424 and accompanying text.

⁴¹⁸ See generally N

orth, *supra* note 220 (providing an account of political evolution from an institutional perspective); NORTH, *supra* note 220, at 92–104 (considering the structure of institutions (rules) and their impact on the organizations that operate according to them).

maintaining and reinforcing the path that prioritizes the interests of that group.⁴¹⁹ During 1997, a new player entered the political arena when the R&D Credit Coalition (Coalition) was created to join forces in a cross-industry effort. Although there were already other coalitions that acted on behalf of technology companies, this coalition was the first to name itself after, and design its agenda around, a specific temporary legislation.⁴²⁰ The Coalition aimed to ensure that the research credit became permanent.⁴²¹ This network was comprised of over eighty-seven trade and professional associations;⁴²² several think tanks, professional networks, advocacy and advisory groups;⁴²³ and over 1000 companies, including major conglomerates such as Microsoft, Apple, and Oracle.⁴²⁴

⁴¹⁹ See, e.g., Greg Hitt, *Businesses Bet Dollars-to-Doughnuts That Tactics Win Tax Breaks*, WALL ST. J., Mar. 29, 2001, at A16 (noting the groups advocating for a permanent extension of the research credit similar to other nations).

⁴²⁰ See *Savings and Investment Provisions in the Administration's Fiscal Year 1998 Budget Proposal: Hearing Before the H. Comm. on Ways & Means*, 105th Cong. 263–72 (1997) [hereinafter *Savings and Investment Provisions in the Administration's Fiscal Year 1998 Budget Proposal*] (statement of Patrick Brennan, Vice President, Pericom Semiconductor Corp., San Jose, California; on Behalf of the R&D Credit Coalition) (listing other coalitions that followed their agenda such as the Savings Coalition of America, the Blue Dog Coalition, the Family Business Estate Tax Coalition, Silicon Valley Software Industry Coalition, and Software Industry Coalition).

⁴²¹ See *R&D Coalition Rebranding Statement*, R&D COALITION, <https://investinamericasfuture.org/rd-coalition-rebranding-statement/> (last visited Mar. 15, 2021) (stating that the R&D Coalition supports “a fair and robust R&D Tax Credit and making policymakers aware of the overall importance of research and development investments to the U.S. economy”).

⁴²² See *Savings and Investment Provisions in the Administration's Fiscal Year 1998 Budget Proposal*, *supra* note 420, at 263–72 (discussing the associations within the R & D Coalition, such as U.S. Chamber of Commerce, the Aerospace Industries Association, National Association of Manufacturers, Pharmaceutical Research & Manufacturers of America, and Semiconductor Industry Association, among others).

⁴²³ For a list of think tanks, professional networks, advocacy, and advisory groups—such as Business Roundtable, Financial Executives International, and Silicon Valley Leadership Group—who supported the R&D Coalition, see *Participating Associations*, R&D CREDIT COALITION, https://web.archive.org/web/20060719042307/http://www.investinamericasfuture.org/member_associations.html (last visited Mar. 15, 2021).

⁴²⁴ Other companies—including HP, Texas Instruments, Honeywell, Boeing, Lockheed Martin Corporation, DuPont, Exxon Mobil Corporation, Johnson & Johnson, and even motorcycle manufacturer Harley Davidson—participated in the R&D Credit Coalition. See *Participating Companies*, R&D CREDIT COALITION, <https://web.archive.org/web/20060422210>

The Coalition strongly reinforced the narrative that technological competitiveness is an integral part of economic growth. It advocated for extending and reshaping the rules governing the research credit.⁴²⁵ It argued that while the research credit was made temporary so that industry and government could evaluate its operation, the program had long proven to be an effective incentive for companies to increase their domestic research.⁴²⁶ The Coalition emphasized that the transient nature of the program and the many gaps in its extension reduced the program's certainty and incentivizing effect.⁴²⁷ In 2000, Bill Sample, Senior Tax Director at Microsoft and Chairman of the Coalition, testified about growing controversies in the administration of the research credit.⁴²⁸ He argued that compliance disagreements were caused by the Department of the Treasury taking unreasonable positions during examination, litigation, and the proposed regulations.⁴²⁹ Congressional representatives reiterated these concerns about the difficulty of administrating the research credit

408/http://www.investinamericasfuture.org/member_companies.html (last visited Mar. 15, 2021).

⁴²⁵ See Letter from R&D Coalition to the Hon. Bill Thomas, Charles Grassley, Charles Rangel, & Max Baucus (Feb. 9, 2004), <https://web.archive.org/web/20060721120837/http://www.investinamericasfuture.org/PDFs/230615.pdf> (urging the enactment of a permanent research credit).

⁴²⁶ See *The Tax Code and the New Economy*, *supra* note 351, at 95 (statement of Bill Sample, Chairman, R&D Credit Coalition, Redmond, Washington, and Senior Director, Domestic Taxes and Tax Affairs, Microsoft Corporation) (“While it is understandable that the Congress in 1981 would want to adopt this new credit on a trial basis, the credit has long since proven . . . to be an excellent investment of government resources to provide an effective incentive for companies to increase their U.S.-based R&D.”).

⁴²⁷ See *id.* at 100 (stating that, to maximize the program's effectiveness and to sustain global technological competitiveness, the U.S. research community needs a stable, consistent research credit).

⁴²⁸ *Id.* at 93–100.

⁴²⁹ See *id.* at 98 (stating that IRS regulations pertaining to research expenditures were extremely controversial and had increased uncertainty for firms and the IRS during the process). The Coalition cited litigation to show that courts supported its position and admonished the IRS for using “positions that were clearly unsupported by the law.” *Id.* at 99; see, e.g., *Tax & Accounting Software Corp. v. United States*, 111 F. Supp. 2d 1153, 1157 (N.D. Okla. 2000) (applying 26 U.S.C. § 41 to software which has been created to be licensed commercially for the first time).

as a temporary program.⁴³⁰ Sample highlighted that research outlays are primarily spent on salaries for engineers, researchers, and technicians; thus, the benefits derived from successful new products trickle to higher salaries for employees and a higher standard of living.⁴³¹ In 2005, Ernst & Young conducted a study on behalf of the Coalition that measured the effect of the research credit on firms that claimed it.⁴³² They found that most companies utilizing the research credit were large, established conglomerates.⁴³³ These studies proved that the research credit program was a meaningful, market-driven tool that allowed firms to make the choice about the types of products and technology investments that would heighten their competitiveness in the world marketplace.⁴³⁴ Similar studies also posited that “a one-dollar reduction in the after-tax price of R&D stimulates approximately one dollar of additional private R&D spending in the short-run, and about two dollars of additional R&D in the long run.”⁴³⁵

⁴³⁰ See *The Tax Code and the New Economy*, *supra* note 351, at 98 (statement of Bill Sample, Chairman, R&D Credit Coalition) (“This reliance by the IRS on proposed rules, which are subject to further administrative actions, evidences a disregard for the administrative rulemaking process and inappropriate tax administration of the statutory provisions of section 41.” (quoting a letter from Representatives Johnson and Matsui)).

⁴³¹ See *id.* at 97 (“The R&D credit and investment in R&D is ultimately an investment in people, their education, their jobs, their economic security, and their standard of living.”).

⁴³² See generally ERNST & YOUNG LLP, SUPPORTING INNOVATION AND ECONOMIC GROWTH: THE BROAD IMPACT OF THE R&D CREDIT IN 2005 (2008) [hereinafter ERNST & YOUNG REPORT] (on file with author).

⁴³³ See *id.* at 5 (“[T]he amount of tax credit claimed by corporations is concentrated among the largest firms . . .”). In 2005, 17,700 corporations claimed \$6.6 billion in research credits on their tax returns. *Id.* at 1. Of these firms, 29% had \$1 million in assets or less, 25% had assets of \$1–\$5 million, 25% had assets of \$5–\$25 million, and 21% percent had assets of \$25 million or more. *Id.* Of these corporations, 14,953 had less than \$50 million in total assets and claimed more than \$891 million in research credit. Of these corporations, 71.2% had a Standard Industrial Classification in some type of manufacturing; the remaining 28.8% included Services, Information, and Agriculture. *Id.* at 4, 6.

⁴³⁴ See *The Tax Code and the New Economy*, *supra* note 351, at 96 (statement of Bill Sample, Chairman, R&D Credit Coalition) (“The U.S. research community needs a stable, consistent R&D credit in order to maximize its incentive value and its contribution to the nation’s economic growth and sustain the basis for ongoing technology competitiveness in the global arena.”).

⁴³⁵ See *id.* at 96–97 (citing to a study by Coopers & Lybrand estimating that a permanent extension of the research credit would create “\$58 billion of economic growth over the 1998–2010 period, including \$33 billion of additional domestic consumption and \$12 billion of additional business investment”).

The Coalition was an instrumental player in the research credit path and led the way for other legislation-oriented coalitions.⁴³⁶ Its self-reinforcement efforts were fruitful in upholding the credit's inertial path in the 2003⁴³⁷ and 2004⁴³⁸ Tax Cuts Acts. The Working Families Tax Relief Act of 2004 extended the credit again until the end of 2005,⁴³⁹ and the Tax Relief and Health Care Act of 2006 prolonged the credit until the end of 2007.⁴⁴⁰ This pattern repeated until 2014.⁴⁴¹ At that time, the research credit was the largest and most popular part⁴⁴² of a group of about fifty temporary provisions set to expire.⁴⁴³ Certain policymakers objected to an extension without offsetting the corresponding budgetary cost through budget cuts or other means.⁴⁴⁴ They argued that the price tag of a permanent extension of the research credit was too high and “would

⁴³⁶ See Michael J. Graetz & Rachael Doud, *Technological Innovation, International Competition, and the Challenges of International Income Taxation*, 113 COLUM. L. REV. 347, 393 (2013) (“[T]he R&D Credit Coalition has become legendary for its ability to maintain R&D tax incentives.”); see, e.g., *Legislative, Regulatory, and Legal Issues Tracking*, ASS'N NAT'L ADVERTISERS, <https://www.ana.net/content/show/id/advocacy-issues-tracking> (last visited Mar. 15, 2021) (describing the advocacy activities of the Association of National Advertisers, a legislation-oriented coalition).

⁴³⁷ Jobs and Growth Tax Relief Reconciliation Act of 2003, Pub. L. No. 108-27, §§ 301–03, 117 Stat. 752, 758–64 (reducing taxes on dividends and capital gains).

⁴³⁸ American Jobs Creation Act of 2004, Pub. L. No. 108-357, § 422, 118 Stat. 1418, 1514 (amending incentives to reinvest foreign earnings in U.S. markets).

⁴³⁹ Working Families Tax Relief Act of 2004, Pub. L. No. 108-311, § 301(a)(1), 118 Stat. 1166, 1178 (extending the research credit from June 30, 2004 to December 31, 2005).

⁴⁴⁰ Tax Relief and Health Care Act of 2006, Pub. L. No. 109-432, § 104(a)(1), 120 Stat. 2922, 2934 (extending research credit through 2007). The Act also added a simpler alternative method that firms could use to calculate the credit. See *id.* § 104(c), 120 Stat. at 2935–36.

⁴⁴¹ See Jackie Calmes, *Obama to Pitch Permanent Tax Credit*, N.Y. TIMES, Sept. 5, 2010, at 22 (“As part of his pre-election push to spur the slumping economy . . . President Obama this week will ask Congress to increase and permanently extend a popular but costly tax credit for businesses’ research expenses . . .”).

⁴⁴² See John D. McKinnon, *House Votes to Permanently Extend Research Tax Credit*, WALL ST. J. (May 20, 2015, 7:27 PM), <https://www.wsj.com/articles/house-votes-to-permanently-extend-research-tax-credit-1432164443> (“Starting last year, congressional Republicans sought to extend a few of the largest and most popular ones on a permanent basis, without offsetting the budgetary cost through budget cuts or other means.”).

⁴⁴³ See Tax Increase Prevention Act of 2014, Pub. L. No. 113-295, 128 Stat. 4010, 4014 (extending multiple deductions and credits).

⁴⁴⁴ See McKinnon, *supra* note 442 (describing the political scuffle in 2015 surrounding the research credit).

cost the government about \$180 billion over the next decade.”⁴⁴⁵ The year 2015 was prime for an election-year showdown. The White House threatened to veto a permanent research credit if funding was not found for highways and health care.⁴⁴⁶ Each party accused its rival of irresponsible legislation. Democrats blamed the GOP for creating a massive budget deficit.⁴⁴⁷ Republicans accused Democrats of driving research jobs overseas.⁴⁴⁸ The research credit was in the midst of this power struggle. After some arm twisting, a vote of 274 to 145 made the research credit permanent for the first time in its long, transient life.⁴⁴⁹

For over three decades, a temporary mechanism intended to battle entrenchment and allow legislative flexibility formed an inertial path that ultimately culminated in lock-in. The research credit was not created to allow repeated rent-extracting mechanisms; it was intended as a legislative experiment in research incentives. Indeed, its legislative history reveals that its existence was often questioned and necessitated extreme measures, such as retroactive enactments and reinstatements. Nevertheless, this temporary credit program involved dynamics that reinforced its path as a superior route, among other alternatives, to encourage research and experimentation. Thus, viewing the history of the research credit through the lens of path dependence theory illustrates that legislative inertia persists or dissipates not necessarily due to legislative intent or design, but via reactive path forces or lack thereof.

⁴⁴⁵ *Id.*

⁴⁴⁶ See Stephen Ohlemacher, *House Votes to Make Research Tax Credit Permanent*, N.Y. DAILY NEWS (May 9, 2014, 10:01 AM), <https://www.nydailynews.com/sdut-house-votes-to-make-research-tax-credit-permanent-2014may09-story.html> (noting that the White House threatened to veto the House bill because “if all the 50-plus temporary tax breaks were made permanent, it would ‘add \$500 billion or more’ to the deficit”).

⁴⁴⁷ *Id.*

⁴⁴⁸ *Id.*

⁴⁴⁹ In 2015, President Obama signed into law the Protecting Americans from Tax Hikes (PATH) Act of 2015, Pub. L. No. 114-113, § 121, 129 Stat. 2242, 3040, 3049–50 that made the credit permanent and, for the first time, permitted small businesses to use the credit to offset both their regular, Alternative Minimum Tax and payroll tax liabilities.

VI. CONCLUSION

Legislative inertia has come to reflect a malfunction of democracy.⁴⁵⁰ Insufficient legislative time and priorities prevent legislatures from considering the efficacy of existing statutes in attaining their goal.⁴⁵¹ A presumption in favor of the status quo creates an extensive barrier for statutory action because upholding legislative action is more time-consuming and politically costly than inaction.⁴⁵² The result is legislative stagnation and numerous obsolete rules that do not accord with present-day social practices.⁴⁵³ In the search for optimal legislation, the last few decades saw an increasing use of temporary legislation that expires on its own after a set period of time.⁴⁵⁴

Temporary legislation is one of the most confounding issues for constituents, lawmakers, and professionals.⁴⁵⁵ Every year, Congress adds new expiring provisions and extends existing ones. Despite its vast economic impact, our understanding of expiring legislation is limited by explanations that rely primarily on rent-seeking, leaving key questions about the life cycle of temporary legislation unaddressed. This Article provides the first comprehensive explanation of this phenomenon by drawing on path-dependence

⁴⁵⁰ See Waldron, *supra* note 1, at 1389 (“Of course, in the real world, the realization of political equality through elections, representation, and legislative process is imperfect.”).

⁴⁵¹ See Dixon, *supra* note 66, at 2210 (“Capacity constraints of this kind will mean that there is little reason—or space—for legislative majorities to give priority to rights-based claims which are advanced by a relatively small minority, if those claims do not command strong majority support.”).

⁴⁵² See Listokin, *supra* note 9, at 530 (arguing that high “transaction costs” hinder constitutional policy change).

⁴⁵³ See *supra* note 2 and accompanying text.

⁴⁵⁴ See *supra* note 31.

⁴⁵⁵ See, e.g., Ian Ayres, *Extempore*, 81 U. CHI. L. REV. DIALOGUE 72, 74, 76 (2014) (suggesting a variety of existing practices and “contexts in which temporary law might provide a net benefit”); see also *Joint Letter: Don't Revive the Expired Tax Extenders*, COMM. FOR RESPONSIBLE FED. BUDGET (May 6, 2019), <https://www.crfb.org/papers/joint-letter-time-end-costly-temporary-tax-provisions> (describing a letter urging Congress not to extend temporary legislation by a coalition of twelve organizations from across the political spectrum). Recently, scholars have also demonstrated empirically the increasing practice of temporary legislation. See, e.g., Ittai Bar-Siman-Tov, *Temporary Legislation, Better Regulation, and Experimentalist Governance: An Empirical Study*, 12 REG. & GOVERNANCE 192, 211 (2018) (finding that temporary legislation in Israel is an “increasingly prevalent” legislative tool).

theory. It reveals that the path-dependent dynamics of temporary legislation often result in their own inertial force that can explain why some temporary provisions enjoy many decades of extensions and renewals, while others are kept in place for only a few years. By offering a deeper understanding of temporary legislation and its evolutionary path, this Article contributes to ongoing debates about the optimal design of present-day policies and the ability of legislatures to resist status quo bias and bring about legal change.

Like other meta-legal theories, path dependence does not prescribe “mystical aphorisms of the fortune cookie.”⁴⁵⁶ Rather, it can inform legislatures about important facets of legal reality. This Article urges policymakers and scholars in diverse areas of the law to consider the ways our legal system employs path-dependence dynamics. In the case at hand, path-dependence theory demonstrates that a legal apparatus did not reduce—but rather exacerbated—unintended legal inertia, thus reinforcing the status quo bias in our legal system. It confirmed that path dynamics can create high switching costs that eventually achieve the opposite result and can entrench policies and programs regardless of their efficacy.

Path-dependent dynamics may also provide normative insights for achieving flexible lawmaking while averting inaction. Surprisingly, the solution may lie in adding more expiring limitations rather than abolishing them. For example, Congress can create a new expiring rule that sets a “three strikes and you’re out” policy by which temporary legislation cannot be extended more than three times.⁴⁵⁷ In the search for optimal statutory change, lawmakers can adopt default rules that cause enacted, temporary legislation to revert to a previous iteration of law, bringing back the alternatives that were available before choosing that particular policy route. Though, this may not be desirable for either party because it imposes high switching costs on the legislature and constituents relying on the current policy. At the same time, these kinds of default rules may pressure legislators to reach a

⁴⁵⁶ *Obergefell v. Hodges*, 576 U.S. 644, 719 n.22 (2015) (Scalia, J., dissenting).

⁴⁵⁷ *Cf.* Sunstein, *supra* note 37, at 43 (proposing a mechanism of “active choosing” as a default rule, which would require people to overcome procrastination and incur effort costs that might otherwise lead them to focus on other matters).

consensus.⁴⁵⁸ Lastly, when choosing between several policy alternatives, legislators can adopt a temporary rule that enables experimentation with policy alternatives. If one policy option is deemed unsuccessful by predetermined objective measures, the law can default to any number of set alternatives. If it is evident (via predetermined measures) that the first enacted policy is effective in achieving its goal, it should be made permanent. These solutions can potentially enable policymakers to gain the benefits of learning and experimenting with different policies while avoiding path dependence through irreversible switching costs. They may enable programs and policies to entrench due to their merits, rather than historical accidents.

⁴⁵⁸ See Listokin, *supra* note 9, at 536 (“A penalty sunset would introduce an unpleasant final law that would strongly encourage future legislators to overcome policymaking inertia. Once legislators overcome this inertia, it is likely (though far from guaranteed) that the lessons learned through this statutory optimal search would be heeded.”).

VII. APPENDIX: LEGISLATIVE HISTORY

Year	Legislative Change
1981	Creation of the R&D tax credit scheduled to expire December 31, 1985. ⁴⁵⁹
1986	Credit lapsed but was retroactively extended and the rate cut from 25% to 20%. ⁴⁶⁰
1988	Credit extended for one year, but its effectiveness was reduced by decreasing the deduction for R&D expenditures by 50% of the credit. ⁴⁶¹
1989	Credit extended for another year, further reducing the effectiveness of the credit by decreasing the deduction for R&D expenditures by a full 100% of the credit and introducing a focus on start-up companies. ⁴⁶²
1990	Credit extended for fourteen months through the end of 1991. ⁴⁶³
1991	Credit extended through June 30, 1992. ⁴⁶⁴
1993	Credit was retroactively extended through June 30, 1995. ⁴⁶⁵
July 1, 1995 to June 30, 1996	Credit lapsed. ⁴⁶⁶

⁴⁵⁹ Economic Recovery Tax Act of 1981, Pub. L. No. 97-34, § 221, 95 Stat. 172, 241–47.

⁴⁶⁰ Tax Reform Act of 1986, Pub. L. No. 99-514, § 231, 100 Stat. 2085, 2173–75.

⁴⁶¹ Technical and Miscellaneous Revenue Act of 1988, Pub. L. No. 100-647, § 4008, 102 Stat. 3342, 3652.

⁴⁶² Omnibus Budget Reconciliation Act of 1989, Pub. L. No. 101-239, § 7110, 103 Stat. 2106, 2322–25.

⁴⁶³ Omnibus Budget Reconciliation Act of 1990, Pub. L. No. 101-508, § 11402, 104 Stat. 1388, 1388-473.

⁴⁶⁴ Tax Extension Act of 1991, Pub. L. No. 102-227, § 102, 105 Stat. 1686, 1686.

⁴⁶⁵ Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 13111, 107 Stat. 312, 420.

⁴⁶⁶ See GUENTHER, *supra* note 325, at 18 n.25 (“The R&E tax credit has been in effect for each year between July 1, 1981, and the present except for period from July 1, 1995, to June 30, 1996, when it expired.”).

Year	Legislative Change
1996	Credit extended for eleven months, through May 31, 1997, but was not extended retroactively. The elective Alternative Incremental Research Credit (AIRC) added, increasing its flexibility and making the credit available to R&D-intensive industries that could not qualify for the credit under the regular criteria. ⁴⁶⁷
1997	Credit extended for thirteen months and made available for expenditures incurred from June 1, 1997 through June 30, 1998, with no gap between this and the previous extension. ⁴⁶⁸
1998	Credit extended for one year until June 30, 1999. ⁴⁶⁹
1999	Credit extended until June 30, 2004 and a modest increase in the AIRC rates was adopted. ⁴⁷⁰
2004	Credit extended through December 31, 2005. ⁴⁷¹
2005	Credit revised by adding a 20% credit of payments for energy research by certain qualified groups. ⁴⁷²
2006	Credit extended retroactively through the end of 2007, increased the AIRC rates, and established the alternative simplified credit. ⁴⁷³
2008	Credit extended retroactively through 2009. ⁴⁷⁴
2010	Credit extended through 2011. ⁴⁷⁵

⁴⁶⁷ Small Business Job Protection Act of 1996, Pub. L. No. 104-188, § 1204, 110 Stat. 1755, 1773–74.

⁴⁶⁸ Taxpayer Relief Act of 1997, Pub. L. No. 105-34, § 601, 111 Stat. 788, 861.

⁴⁶⁹ Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999, Pub. L. No. 105-277, § 1001, 112 Stat. 2681, 2681-888 (1998).

⁴⁷⁰ Ticket to Work and Work Incentives Improvement Act of 1999, Pub. L. No. 106-170, § 502, 113 Stat. 1860, 1919.

⁴⁷¹ Working Families Tax Relief Act of 2004, Pub. L. No. 108-311, § 301, 118 Stat. 1166, 1178.

⁴⁷² Energy Policy Act of 2005, Pub. L. No. 109-58, § 1351, 119 Stat. 594, 1056–58.

⁴⁷³ Tax Relief and Health Care Act of 2006, Pub. L. No. 109-432, § 104, 120 Stat. 2922, 2934–36.

⁴⁷⁴ Tax Extenders and Alternative Minimum Tax Relief Act of 2008, Pub. L. No. 110-343, § 301, 122 Stat. 3765, 3865.

⁴⁷⁵ Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, Pub. L. No. 111-312, § 731, 124 Stat. 3296, 3317.

Year	Legislative Change
2012	After a one-year lapse, the credit extended retroactively through 2013. ⁴⁷⁶
2014	All four components of the credit extended through 2014. ⁴⁷⁷
2015	PATH Act of 2015 retroactively extended the credit, made it permanent, and expanded credit provisions by allowing small businesses to take the credit against their Alternative Minimum Tax (AMT) liability for tax years beginning after December 31, 2015 and allowing startup businesses with no federal tax liability and gross receipts of less than \$5 million to take the credit against their payroll taxes for tax years beginning after December 31, 2015. ⁴⁷⁸
2017	Credit preserved and enhanced ⁴⁷⁹ while eliminating Section 199 incentives and reducing the value of the Orphan Drug Credit. ⁴⁸⁰

⁴⁷⁶ American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, § 301, 126 Stat. 2313, 2326 (2013).

⁴⁷⁷ Tax Increase Prevention Act of 2014, Pub. L. No. 113-295, § 111, 128 Stat. 4010, 4014.

⁴⁷⁸ Protecting Americans from Tax Hikes Act of 2015, Pub. L. No. 114-113, § 121, 129 Stat. 2242, 3049–52.

⁴⁷⁹ Act of Dec. 22, 2017, Pub. L. No. 115-97, § 13206, 131 Stat. 2054, 2111–13.

⁴⁸⁰ *Id.* §§ 13305, 13401, 131 Stat. at 2126, 2133–34.

1276

GEORGIA LAW REVIEW

[Vol. 55:1193