The Faux Scholarship Foundation of the Regulatory Rollback Movement

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With the full participation and consent of Congress, President Trump has embarked upon a radical project to freeze and roll back federal regulations that protect public health, safety, the environment, and the economy. The principal justification for this project, publicly announced by both Congress and President Trump, is the claim that regulations are costing the American economy $2 trillion per year, thereby destroying jobs. This claim derives from two studies that have received wide and credulous circulation in the media, on Capitol Hill, and in the White House. This Article accordingly undertakes a comprehensive evaluation of these two studies. It will show that their methods are deeply flawed and their results far too weakly grounded to serve as the basis for a major policy shift. It also will examine the techniques used in these studies to give ungrounded numbers the veneer of credibility. The goal of this exercise is to equip the lay reader with insights needed to spot similar deceptions in the future. This Article will demonstrate that, ultimately, the "aggregate cost of regulation" is at once unknown, unknowable, and unnecessary to sound regulatory policy. The studies examined in this Article do not establish that regulations are costing more jobs than they create, or reducing the U.S. Gross Domestic Product by any amount close to $2 trillion per year. They do, however, highlight the impact of an archipelago of antiregulatory advocacy groups and policy centers that regularly sponsor and issue studies that overstate the cost of regulation using methods that seem plausible on a quick read but that do not withstand close scrutiny. For better or worse, such studies—and the centers that issue them—form a part of

our national discourse. Policy makers, judges, scholars, and journalists should be aware, and wary, of them. Meanwhile, the fact that the House of Representatives explicitly relied on bogus studies to justify a radical set of de-regulatory proposals is itself a reason for alarm: it demonstrates that Congress lacks any reliable mechanism for data quality assurance or truth-check in its legislative process. Given the complexity of most issues and Congress' vast power to legislate for good or ill, this is a serious institutional deficiency.

Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority . . . are distilling their frenzy from some academic scribbler of a few years back.

— John Maynard Keynes[1]

Falsehood flies and the truth comes limping after it, so that when men come to be undeceived, it is too late; the jest is over, and the tale hath had its effect.
— Jonathan Swift[2]

INTRODUCTION

"My economic agenda can be summed up in three very beautiful words. Jobs. Jobs. Jobs. We have to bring our jobs back . . . . Excessive regulation costs our economy two trillion dollars a year. Can you believe that? Two trillion dollars per year!"[3] Thus spoke Candidate Trump in Toledo, Ohio in September 2016, as he promised to roll back regulations if elected.

He is making good on that pledge. On January 30, 2017, newly elected President Donald J. Trump issued Executive Order 13,771, decreeing that agencies must repeal two rules for every new rule they issue, and completely offset the costs of any new rule with cost savings from repealed requirements—a radical experiment never before tried in the United States.[4] A few days later President Trump issued Executive Order 13,777 ordering each and every Executive Branch agency to establish both a Regulatory Reform Task Force and a process to identify rules to be repealed.[5] In 2017, sixty-seven regulatory

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1.   JOHN MAYNARD KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY 383 (1936).

2.   Jonathan Swift*, The Examiner No. XIV* (November 9th, 1710) (quoted in Dana Milbank, *The Truth Comes Limping After*, WASH. POST, Feb. 11, 2018, at A21).

3.   DONALD J. TRUMP, DONALD TRUMP CAMPAIGN RALLY IN TOLEDO, OHIO (Sept. 21, 2016), available online at https://www.c-span.org/video/?c4785991/trumps-2-trillion-regcost-claim [https://perma.cc/A8YH-H7W7].

4.   Reducing Regulation and Controlling Regulatory Costs, Exec. Order No. 13,771 § 2, 82 Fed. Reg. 9,339 (Feb. 3, 2017), available online at https://www.gpo.gov/fdsys/pkg/FR-2017-02-03/pdf/2017-02451.pdf [https://perma.cc/WM35-EBNX] [hereinafter EO 13,771] ("Unless prohibited by law, whenever an executive department or agency . . . publicly proposes . . . or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed.") It also establishes a regulatory budget of "zero" for FY 2017, meaning that all costs of any new regulation issued by executive branch agencies must be offset by "the elimination of existing costs associated with at least two prior regulations." § 2(c). For ensuing years, the Order decrees that the Office of Management and Budget (OMB) will dictate to each agency the "total amount of incremental costs" that it may impose on society with rules issued in that fiscal year. § 3(d). That increment may be zero, greater than zero, or less than zero (meaning net deregulation in that year). *Id.* Subject agencies are prohibited from issuing rules expected to impose costs in excess of their regulatory cost quota, unless expressly required by law. *Id.*

5.   Enforcing the Regulatory Reform Agenda, Exec. Order No. 13,777, 82 Fed. Reg. 12285 (Mar. 1, 2017), available online at https://www.federalregister.gov/documents/2017/03/01/2017-04107/enforcing-the-regulatory-reform-agenda [https://perma.cc/QF7P-244U] [hereinafter EO 13,777].

requirements proposed or recently finalized by the Obama Administration were withdrawn or reversed by Congress or the Trump Administration.[6] In Fiscal Year 2018, the Trump Administration claimed 176 deregulatory actions of which fifty-seven were deemed significant, compared to only fourteen new regulatory actions.[7] The pace of new rule issuance has slowed to a crawl,[8] while enforcement of existing rules is being defunded and de-emphasized.[9] Congress,

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6. Speaking on camera beside several tall stacks of paper, President Trump recently claimed, "[w]ithin our first 11 months, we cancelled or delayed over 1,500 planned regulatory actions—more than any previous President by far . . . . And instead of eliminating two old regulations, for every one new regulation we have eliminated 22." Pres. Donald Trump, Remarks by President Trump on Deregulation (Dec. 14, 2017), transcript available at https://www.whitehouse.gov/briefings-statements/remarks-president-trump-deregulation/ [https://perma.cc/MWG4-QBDP]. The ratio of twenty-two comes from dividing sixty-seven deregulatory actions by the three new regulatory actions finalized during the period. *See* OFFICE OF INFO. AND REGULATORY AFFAIRS, REGULATORY REFORM: COMPLETED ACTIONS FISCAL YEAR 2017 (last visited Feb. 13, 2018), https://www.reginfo.gov/public/do/eAgendaEO13771 [https://perma.cc/4AJU-JJE4]. President Trump appears to have exaggerated a bit. Bloomberg reporters have disclosed that "[a]t least 22 of the 67 deregulatory actions . . . were adapted from efforts begun under Obama, often with little or no change." *See* Alan Levin & Ari Natter, *Trump Stretches Meaning of Deregulation in Touting Achievements*, BLOOMBERG NEWS (Dec. 29, 2017) https://www.bloomberg.com/news/articles/2017-12-29/trump-stretches-meaning-of-deregulation-in-touting-achievements. [https://perma.cc/447E-LUBP]. Moreover, they found that only 469 draft regulations had been "withdrawn." Of these, 42 percent (or 197 rules) had already been effectively killed in the Obama Administration. *See* Alan Levin & Jesse Hamilton, *Trump Takes Credit for Killing Hundreds of Regulations That Were Already Dead*, BLOOMBERG NEWS (Dec. 11, 2017) https://www.bloomberg.com/news/features/2017-12-11/trump-takes-credit-for-killing-hundreds-of-regulations-that-were-already-dead. [https://perma.cc/K5G7-6STM]. What these claims of Trump Administration exaggeration overlook, however, is that repealing forty-three rules (sixty-seven minus twenty-two) and withdrawing 272 draft rules in the pipeline (469 minus 197) is still a potentially significant achievement. Moreover, it is not the number of repealed or withdrawn rules, but the magnitude of their foregone costs and benefits that matter most to regulatory policy. On this score the sixteen major rules repealed by Congressional Review Act plus the repeal of the Clean Power Plan—and nothing else—would constitute a signal accomplishment for year one. To this must be added the impact of additional repeals likely to follow in later years.

7. OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. & REGULATORY AFFAIRS, REGULATORY REFORM REPORT: COMPLETED ACTIONS FOR FISCAL YEAR 2018, https://www.reginfo.gov/public/pdf/eo13771/EO_13771_Completed_Actions_for_Fiscal_Year_2018.pdf [https://perma.cc/Y3NV-AMHV]. For an interactive overview of 145 major deregulatory actions begun, in-process, or completed during the first two years of the Trump Presidency *see* BROOKINGS, TRACKING DEREGULATION IN THE TRUMP ERA (2019), https://www.brookings.edu/interactives/tracking-deregulation-in-the-trump-era/ [https://perma.cc/4VAX-7RCU]. For a conservative take on these developments, *see* Dan Bosch & Dan Goldbeck, *2018: The Year in Regulation*, AMERICAN ACTION FORUM (Jan. 8, 2019), https://www.americanactionforum.org/research/2018-the-year-in-regulation/ (celebrating $7.8 billion in regulatory cost savings expected to result from Trump Administration regulations and deregulations in 2018, without mention of the lost regulatory benefits for human health, safety, or the environment.).

8. The October 2017 Unified Agenda of Federal Regulation reveals that the number of rules at all stages of issuance (pre-rule, proposed, and final) in 2017 was less than half the 2016 level. OFFICE OF INFO. AND REGULATORY AFFAIRS, CURRENT UNIFIED AGENDA OF REGULATORY AND DEREGULATORY ACTIONS (Fall 2017), https://www.reginfo.gov/public/do/eAgendaMain?operation=OPERATION_GET_AGENCY_RULE_LIST&currentPub=true&agencyCode=&showStage=active&agencyCd=0000&Image58.x=62&Image58.y=26 [https://perma.cc/ZV4G-N87E] (last visited Feb. 13, 2018).

9. *See, e.g.*, Memorandum from Susan Shinkman, Director, EPA Office of Enf't and Compliance Assurance, on Interim Procedures for Issuing Information Requests Pursuant to Clean Air Act § 114, Clean Water Act § 308, and RCRA § 3007 to Regional Counsel, Regional Enforcement Directors, Regional Enforcement Coordinators, OCE Division Directors (May 31, 2017) (available at

meanwhile, has repealed sixteen major Obama era rules under the Congressional Review Act, along with the health, safety, and environmental protections the rules would have afforded the American people.[10] Congress is considering a raft of new legislative proposals that, if enacted, would virtually paralyze federal agency efforts to issue new rules.[11]

Like President Trump, critics of regulation in Congress have predicated their regulatory rollback initiatives on the belief that regulations are costing the economy $2 trillion per year. House Concurrent Resolution 125, a hitherto obscure resolution enacted in the summer of 2016 prior to the election of Donald Trump is, in retrospect, an important bellwether document that merits closer attention:

"(a) Findings.—The House finds the following:

  (1) Excessive Federal regulation—

    (A) has hurt job creation, investment, wages, competition, and economic growth, slowing the Nation's recovery from the economic recession and harming American households;
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    (3) The estimated cost of Federal regulations are as high as $1.88 to $2.03 trillion per year."[12]

The resolution went on to propose a deregulatory "reform" agenda that foreshadows the regulatory rollback bills mentioned above.[13]

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https://www.documentcloud.org/documents/4324892-EPA-Clean-Air-Act-and-Its-Power-to-Request .html#document/p60/a392202 [https://perma.cc/YPF2-PJB5]) (removing the authority of EPA enforcement officers in regional offices to independently order air and water pollution tests and gather other information relevant to compliance without permission from Washington); Eric Lipton & Danielle Ivory, *Under Trump, E.P.A. Has Slowed Actions Against Polluters, and Put Limits on Enforcement Officers*, N.Y. TIMES (Dec. 10, 2017), https://www.nytimes.com/2017/12/10/us/politics/pollution-epa-regulations.html (reporting that "[d]uring 266 days under its administrator, Scott Pruitt, the agency has filed about a thousand fewer cases and sought almost $9 billion less in those cases, including environmental repairs and fines, than during the same period in the Obama Administration").

    10.   *Congressional Review Act: The Case for Repeal*, CENTER FOR PROGRESSIVE REFORM, http://www.progressivereform.org/CRA_numbers.cfm#CRANumbers (last visited Jan. 7, 2019) (listing and providing links to repealed rules).

    11.   Among the bills pending before the last Congress were proposals to impose a congressionally-mandated regulatory budget, H.R. 2623, 115th Cong. (2017), require formal rulemaking, H.R. 5, 115th Cong. § 103 (2017), require affirmative congressional approval of every major rule before it can take effect, H.R. 26, 115th Cong. § 3 (2017), require retrospective cost-benefit review of rules every five years (with no additional resources), H.R. 5, 115th Cong. § 103 (2017), and/or statutorily reverse the judge-made Chevron doctrine, which calls for judicial deference to reasonable agency interpretations of ambiguous statutory provisions, H.R. 5, 115th Cong. § 202 (2017).

    12.   H.R. REP. NO. 114-470, at 315 (2016).

    13.   *Id.* at 316–17 ("(b) Policy on Federal Regulatory Budgeting and Reform.—It is the policy of this concurrent resolution that the House should, in consultation with the public, consider legislation that . . . (3) requires—"(A) an annual, congressional regulatory budget that establishes annual costs of regulations and allocates these costs amongst Federal regulatory agencies; "(B) cost-benefit and regulatory impact analysis for new regulations proposed and promulgated by all Federal regulatory agencies; "(C) advance notice of proposed rulemaking and makes evidentiary hearings available for critical disputed issues in the development of new major regulations; "(D) congressional approval of all new major regulations before the regulations can become effective, ensuring that Congress can better prevent the

What is driving this regulatory rollback movement? While some of the backers of the movement may be cynical rent-seekers, there is no reason to doubt that many proponents of such reforms genuinely believe that the regulatory state has run amok, that it is imposing huge costs—upwards of $2 trillion per year—on the American economy, and that those horrendous costs are making America uncompetitive and killing jobs.

Where does this seminal belief—that federal regulations are costing the economy between $1.88 and $2.03 trillion per year—come from? House Concurrent Resolution 125 offers no citations, but we can trace the provenance of its numbers through the numerical fingerprints supplied by the Resolution's use of three significant digits in presenting its findings. The upper-bound *$2.03 trillion* figure almost certainly comes from a 2014 study for the National Association of Manufacturers by W. Mark Crain and Nicole Crain, which offered an estimate of $2.028 trillion.[14] The lower bound of *$1.88 trillion* in the concurrent resolution almost certainly derives from an estimate of $1.885 trillion in *Ten Thousand Commandments (2016)*, an Annual Report by Clyde Wayne Crews, Jr.[15]

These studies, like predecessor studies by the same authors, have received wide and credulous circulation in the media and in numerous congressional hearings.[16] It seems fair to conclude that their main conclusions are widely accepted. Yet, remarkably, while external scholars have thoroughly reviewed and debunked an earlier (2010) study by the Crains,[17] Crews's *Tip of the*

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imposition of unsound costly new regulations; and "(E) post-implementation cost-benefit analysis of all new major regulations on at least a decennial basis, to ensure that regulations operate as intended and impose no more costs than necessary.'").

14.   W. MARK CRAIN & NICOLE V. CRAIN, THE COST OF FEDERAL REGULATION TO THE U.S. ECONOMY, MANUFACTURING AND SMALL BUSINESS: A REPORT FOR THE NATIONAL ASSOCIATION OF MANUFACTURERS 1 (Sept. 10, 2014) [hereinafter Crain (2014)].

15·   CLYDE WAYNE CREWS, JR., TEN THOUSAND COMMANDMENTS: AN ANNUAL SNAPSHOT OF THE FEDERAL REGULATORY STATE 2 (2016) [hereinafter Crews, *Commandments* (2016)].

16.   A recent Lexis search revealed that the Crain (2014) study has been cited in at least twenty-one separate congressional hearings, committee reports and/or floor debates. Its 2010 predecessor, which used similar methods to reach similar conclusions, was cited in twenty congressional hearings, while the Crews study was cited at least nine times before Congress. The full list of congressional testimony and media citations is available on demand from the author. One can only imagine how many times the statistic featured in unpublished speeches, and trade association letters to members (the 2014 Crain study was sponsored by the National Association of Manufacturers). Of course the most important evidence of these studies' impact is the official use of their numbers *by* congressional leadership and the President. *See supra* notes 3 and 13 and accompanying text.

17.   *See* Lisa Heinzerling & Frank Ackerman, *The $1.75 Trillion Lie*, 1 MICH. J. ENV'T & ADMIN. L. 127, 150 (2012) [hereinafter, Heinzerling & Ackerman (2012)]; Sidney A. Shapiro et al., *Setting the Record Straight: The Crain Report on Regulatory Costs* (Center for Progressive Reform White Paper #1103, Feb. 2011) at 2–3 [hereinafter Shapiro (2011)]; CURTIS W. COPELAND, CONG. RESEARCH SERV., R41763, ANALYSIS OF AN ESTIMATE OF THE TOTAL COSTS OF FEDERAL REGULATIONS 12, 23 (Apr. 6, 2011) [hereinafter CRS (2011)]; MAEVE P. CAREY, CONG. RESEARCH SERV. R44348, METHODS OF ESTIMATING THE TOTAL COST OF FEDERAL REGULATIONS (Jan. 21, 2016) [hereinafter CRS (2016)].

Costberg study has not been reviewed at all, and the 2014 Crain and Crain study has not been closely examined.[18]

This Article fills that void by offering a detailed assessment of the two main empirical studies whose sensational findings are now fueling the regulatory rollback movement. The most common and obvious rejoinder to these regulatory cost estimates—and to the regulatory rollback movement generally—has been that such estimates ignore the *benefits* of regulation.[19] Common sense tells us that one cannot rationally judge the value of any good or service (public or private) without weighing costs against benefits of the thing being evaluated. Moreover, for over forty years the federal government has required a Regulatory Impact Assessment, which accomplishes that cost-benefit balancing for most major rules issued by executive branch agencies.[20] The fundamental objection that cost-only estimates ignore benefits is clearly valid, but it has been well-made by others and will not be explored further here.[21] The focus of this Article is on whether even the cost estimates can be trusted.

Part I will examine the *provenance* of these seminal studies: i.e., the scholarly bona fides of the authors, their financial and/or contractual independence, and the credibility of the venue in which they published their results. It turns out that both studies were sponsored by organizations with a strong financial and organizational stake in the outcome of the studies. Neither study was peer reviewed. In fact, neither study was even published in an external journal that might have provided an external filter for quality or veracity. The 2014 Crain and Crain study was a successor to a 2010 report by the same authors that was panned by academic critics, the Government Accountability Office (GAO), and the Congressional Research Service, and dismissed as "deeply

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18.   Remarkably, despite the inaccuracies of their 2010 study, the Crains received a new research contract from the Small Business Administration (SBA) on September 21, 2017 for yet another study of the same topic. Letter from Sen. Jeanne Shaheen, Ranking Member, Senate Comm. on Small Bus. & Entrepreneurship, & Sen. Heidi Heitkamp, Ranking Member, Senate Comm. on Small Bus. & Entrepreneurship, to Major L. Clark III, Chief Counsel, Office of Advocacy, Small Bus. Admin. (Dec. 22, 2017) (available at https://perma.cc/VVV5-4MXW). In response, the ranking members of two subcommittees of the Senate Committee on Small Business and Entrepreneurship sent a letter to the Chief Counsel of the SBA's Office of Advocacy inquiring about the protocols that allowed the Crains to receive another research contract. *Id.* The senators who authored the letter were particularly concerned about this contract because the 2010 Crain study was faulted for "using unreliable methodology and flawed data," which resulted in an "erroneous and overstated cost estimate." *Id.* The senators also noted that the 2014 study was similarly critiqued and, when challenged, the Office of Advocacy was unable to substantiate its findings. *Id.* Under pressure, SBA cancelled the Crain contract in May 2018. *See* Cheryl Bolen, *Small Business Office Ends Controversial Consultants' Contract*, BLOOMBERG NEWS, May 24, 2018.

19.   *See,* e.g., Complaint at ¶¶ 4–5, Public Citizen, Inc. v. Trump, No. 1:17-cv-00253 (D.D.C. Feb. 8, 2017); Shapiro (2011), *supra* note 17, at 2–3.

20.   CRS (2011), *supra* note 17. *See* Exec. Order No. 12,291 § 2, 46 Fed. Reg. 13,193 (Feb. 17, 1981), available online at https://www.archives.gov/federal-register/codification/executive-order /12291.html [https://perma.cc/BS9G-BL7Y] [hereinafter EO 12,291]; Regulatory Planning and Review, Exec. Order No. 12,866 § 1, 58 Fed. Reg. 51,735 (Sept. 30, 1993), available online at https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.html [https://perma.cc/2EAD -C6GJ] [hereinafter EO 12866].

21.   *See* sources cited *supra* note 17.

flawed" by the Administrator of Office of Management and Budget's (OMB) Office of Information and Regulatory Affairs (OIRA).

Part II will examine the transparency and reproducibility of these studies and supporting documentation. The Crains have refused to disclose their source data, a refusal that in itself should have raised serious questions about the study's methods. Efforts by this author (working with a trained statistician) to reproduce their regression analysis using publicly available data from the sources they say they used, using their stated methods of calculation, produces a regulatory cost estimate that is $500 billion lower than theirs. Crews, by contrast, has abundantly documented his immediate sources, with hundreds of footnotes. But his citations are not probative for reasons that will become manifest in Part III: his immediate sources often simply snatch a number without validation from earlier sources, which cite still prior sources, again without validation, and so on. The original source, once unearthed, often turns out to be decades old and/or lacking in credibility itself.

Part III will examine the *methodology* employed in the Crain and Crews studies, respectively, to assess the cost of four separate types of "regulation" covered by those reports: economic regulation, social regulation, tax compliance (including time spent preparing tax returns), and homeland security (including time spent waiting in line in airport security).

Part III.A will examine the methods used by the Crains, and by Crews, to estimate the cost of "economic regulation." The Crains derive nearly $1.5 trillion in estimated "costs of economic regulation" (over 70 percent of their $1.9 trillion estimate) from a statistical regression of per capita Gross Domestic Product (GDP) against a self-styled "Economic Regulation Index" drawn from an opinion poll of business executives in thirty-four Organization for Economic Cooperation and Development (OECD) countries. This unlikely approach yielded regression results that proved impossible for this author to replicate with public data from the sources cited by the Crains. Moreover, their regression model lacks theoretical foundation and seems to have little to recommend it beyond the fact that it allegedly produced a statistical fit.[22]

How were the Crains able to generate large and "highly significant" statistical results with an invalid proxy and a nonsense regression equation? Subpart A.1 of Part III will explain this paradox in simple layman's terms. It turns out to be rather easy to produce "statistically significant" coefficients in a regression if one uses flawed methods. Indeed, the same regression model and data that the Crains used (substituting only the main variable of interest) can be used to demonstrate that the comparative lack of judicial independence in the United States "costs" the U.S. economy $1.5 trillion per year; that a dearth of

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22. The Crains' refusal to release their source data made exact reproduction of their results impossible. However, since their ERI and control variables are based on public data, we were able to construct our own data set and run their regression using publicly-sourced data for the variable in their equation. *See* discussion *infra* at Part III.A.1 and Annex. The exact number, however, is less important than the validity of their methodology discussed in Part III.A.1.

trust in politicians costs $1.9 trillion; and that government favoritism costs $1.1 trillion.

The ease with which regression analysis can produce "statistically significant" yet bogus findings makes external validation by neutral experts particularly important where such techniques are used to generate findings on which major policy decisions will be based. No such validation occurred in this case.

Subpart A.2 of Part III will examine the methodology used by Clyde Wayne Crews in *Ten Thousand Commandments* and *Tip of the Costberg* to estimate the cost of "economic" regulations as he defines that term. Crews's numbers are supplied by a simple technique that he uses with telling effect throughout his study. That technique can best be described as snatching a number from a prior study without validating its credibility and continued relevance to the current environment. For economy of words, we will refer to this practice simply as "*number snatching*."

Crews's method for generating his $400 billion estimate for the cost of economic regulation offers a fine illustration of number snatching and its pitfalls. Crews lifts a number without analysis from a 2001 study by Crain and Hopkins, which lifts a number without analysis from a 1999 OECD report, which cites a 1997 OECD report, which derives its number without analysis from a 1995 Council on Economic Advisor's report, which estimated the costs of the then-existing regulatory regime for telecommunications *in support of a telecommunications deregulatory bill that passed in 1996,* thereby mooting the entire estimate. The only alteration to any number along this number-snatching chain is a three-fold multiplication of cost applied by Crain and Hopkins in 2001 to account for "transfer costs," a practice that also turns out to be taken out of context and is unjustified in the context of an estimate of costs to GDP.

Subpart B of Part III will turn to an examination of the methodology that both the Crain and Crews studies use to estimate costs of "social regulations," i.e., health, safety, and environmental regulations enacted by executive branch agencies. Both studies use similar sources and methods to derive their respective numbers for social regulations, so we will examine them together. Within this category the Crains tally only Environmental Protection Agency (EPA) and Occupational Health and Safety Administration (OSHA) regulations to yield an estimate of $401 billion per year, while Crews sweeps more broadly to include other agency regulatory costs summing to $904 billion a year. Due to space limitations, the discussion will focus on the sources and methods used to estimate costs of the regulatory categories that the Crain and Crews studies both cover: (1) occupational safety and health regulations and (2) environmental regulations.

Here, once again, we find number snatching at work, this time practiced by both the Crain and Crews studies. Subpart B.1 will show that 99 percent of the $71 billion in occupational safety and health regulatory costs estimated in the Crain and Crain study and 45 percent of the counterpart costs in the broader Crews compilation are accounted for by a single, Mercatus Center-funded study

that involves inflating OMB-reported agency-generated cost estimates by a factor of 5.5. That multiplier is itself lifted without critical scrutiny from a prior, unpublished working paper that employs an arbitrary assumption to reach an unsupported conclusion.

Subpart B.2 of Part III will report the results of a similar audit of the environmental regulatory cost estimates in the Crain and Crews studies. Once again we see number snatching in action. In this case, the number in question is taken from a 1991 study of pre-1988 environmental regulations, which drew its number from an earlier general equilibrium modeling exercise that has since been thoroughly examined and debunked by outside scholars (though that did not stop either Crews or the Crains from using the discredited number *again* in their most recent studies).

One might expect to find firmer methodological footing in the seemingly benign practice of simply adding up agency estimates of the cost of new regulations issued each year—estimates which OMB has tallied on an annual basis since 1995 and reported in its Annual Report to Congress on the Costs and Benefits of Federal Regulations. Even this practice, it turns out, is fraught with methodological peril. The figures that enter into each OMB annual report are *ex ante* estimates, not *ex post* measures of actual cost. Moreover, the newly promulgated rules listed in OMB reports each year are not always implemented exactly as planned. Such rules may be later withdrawn by agencies, overturned by courts, modified by subsequent rules, clarified by guidance, or softened by waivers and variances granted after the fact or by enforcement policy or neglect. Tabulating *ex ante* regulatory cost predictions snatched from old OMB reports without checking to see whether the rules tallied in those reports have been overturned, withdrawn, modified, clarified, or enforced turns out to be just another instance of misleading number snatching. Studies have shown that tens of billions of dollars in phantom costs can be generated in this manner.[23]

Subpart C of Part III will conclude the methodological discussion with an examination of the sources and methods that both the Crain and Crews studies used to project enormous estimated costs of tax compliance and homeland security, respectively. It turns out that most of these costs are of questionable relevance to the contemporary debate over regulation, and appear to be greatly exaggerated in any case.

Part IV will show that the "aggregate cost of regulation" is unknown, unknowable, and unnecessary to sound regulatory policy. In fact, OIRA came to this realization and abandoned the quest to develop such a number over a decade ago. Yet the most powerful leaders of our country continue to imbibe, and act upon, these imaginary numbers as if they were somehow real.

Part V will step back to look at the larger picture in search of an answer to the overarching question posed by the Crain and Crews studies and the galaxy of similar studies that they inhabit: what is driving the proliferation and credulous

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23. Heinzerling & Ackerman (2012), *supra* note 17, at 155. *See also* discussion *infra* Part III.B.3.

reception of a raft of studies that focus exclusively on cost with little or no regard for the benefits of regulation, or even an accurate estimation of cost? This Part will suggest that a plausible explanation may be found in a coalition of (a) major business lobbies such the Chamber of Commerce and National Association of Manufacturers who understandably want to minimize regulatory cost and nuisance for business, with (b) very wealthy and ideologically driven donors (led by the Koch brothers) who hold strongly libertarian views and who have founded and funded a bevy of think tanks and advocacy centers aimed at reshaping public policy to reflect their libertarian viewpoint.   It would appear that the "scholarship" produced by this movement is not primarily fact-driven. It is agenda-driven. Conservatives and libertarians may argue that liberal proponents of regulation play the same game on the other side, and there may be some truth to such claims. But, if so, that situation simply exacerbates the dilemma facing Congress, the White House, agencies, and the media (a dilemma highlighted but not resolved by this Article): how does one ensure the truthfulness, the reliability, and the credibility of the information and analysis on which major public policy decisions are made?

I. The Dubious Provenance of the Crain and Crews Studies

This Part will examine what I will call the "provenance" of the Crain and Crews studies from which the House of Representatives drew its regulatory costs in House Concurrent Resolution 125. The provenance criterion offers a simple and useful screening tool that journalists, editorial writers, and congressional staff might have applied in assessing the credibility of these analyses, by asking the following simple questions: (1) Was the authors' work published in a credible journal? Was it otherwise peer reviewed or quality-controlled by an external party under an arrangement that requires that errors identified by reviewers be corrected? (2) Are the authors financially and/or contractually independent, in the sense that they do not receive funding from interests who have a stake in the outcome? (3) Have the authors done reputable work in the past?

This Part will show that the provenance criterion alone should have raised red flags about both studies.

A. Crain & Crain (2014)

The 2014 Crain and Crain study has never been published in an outside journal, nor was it ever peer reviewed. It was written under contract to a client, National Association of Manufacturers (NAM), which obviously has a strong institutional interest in the outcome of the study.[24] Moreover, the 2014 study

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24.   *See* Crain (2014), *supra* note 14. The NAM website reports that the Board of Directors of NAM "comprises more than 200 of the nation's top manufacturing executives representing large and small companies alike across all industrial sectors." *See* http://www.nam.org/About/Board-of-Directors/. These

follows closely (with slightly different data and methods) a 2010 study of regulatory costs by the same authors. The predecessor study likewise was not externally published, received only perfunctory peer review, and was heavily criticized for shoddy methods. Indeed, GAO chastised the Small Business Administration's (SBA's) Office of Advocacy, which commissioned the 2010 study, for failing to secure meaningful peer review for that and other studies.[25] In 2012, a published study by Heinzerling and Ackerman, *The $1.75 Trillion Lie*, devoted thirty-two pages to exposing fundamental flaws in the methodology of the 2010 Crain and Crain study.[26] Several other studies, including two by scholars at the Congressional Research Service, also raised serious doubts about the study's methodology.[27] Cass Sunstein, a renowned scholar and then-Administrator of OMB's Office of Information and Regulatory Affairs, dismissed the study in congressional testimony as an "urban legend" while the SBA distanced itself from the study on its website.[28]

Such criticisms did not come in time to stop the 2010 Crain and Crain study and its sensational $1.75 trillion regulatory cost claim from being widely and

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are, obviously, all regulated entities who thus bear the cost of regulations. NAM directly cites the Crain (2014) study on their website as one of their "Top 20 Facts About Manufacturing." *Top 20 Facts About Manufacturing*, (July 28, 2018), http://www.nam.org/Newsroom/Facts-About-Manufacturing/. NAM's website also features and links to the study on a page titled "The Cost of Federal Regulation." *The Cost of Federal Regulation*, (July 28, 2018), http://www.nam.org/Data-and-Reports/Reports/Cost-of-Federal-Regulations/The-Cost-of-Federal-Regulation/ and on its page devoted to "Regulatory Reform." *See* http://www.nam.org/Issues/Regulatory-Reform/.

25. U.S. GOV'T ACCOUNTABILITY OFFICE, SMALL BUSINESS ADMINISTRATION: OFFICE OF ADVOCACY NEEDS TO IMPROVE CONTROLS OVER RESEARCH, REGULATORY AND WORKFORCE PLANNING ACTIVITIES: REPORT TO THE CHAIRMAN, SUBCOMMITTEE ON FINANCIAL SERVICES AND GENERAL GOVERNMENT, COMMITTEE ON APPROPRIATIONS, US SENATE 13 (July 2014) [hereinafter 2014 GAO Report on SBA]. ("[Advocacy] does not have policies and procedures that reflect the federal information quality guidelines on retaining data for influential studies or taking other steps to substantiate the quality of information in such studies when they have not retained the data.") The GAO also reported in 2014 that Advocacy's contracts for external research during this period did not even contain a clause requiring the researcher to make significant changes to correct significant deficiencies since that might "result in expanding the scope of the research." *Id.* at 12. Unlike its 2014 successor, the 2010 Crain study was "peer reviewed" by two reviewers. The first raised major concerns about the study's methodology that were ignored in the published version. The other "peer reviewer," Robert Litan, a respected scholar at the conservative American Enterprise Institute, offered two sentences: "I looked it over and it's terrific, nothing to add. Congrats." *See* Shapiro (2011), *supra* note 17, at 3. OFFICE OF ADVOCACY, SMALL BUSINESS ADMINISTRATION, INFORMATION QUALITY PEER REVIEW REPORT FOR THE IMPACT OF FEDERAL REGULATORY COSTS ON SMALL FIRMS 4 (2010), available at http://www.sba.gov/sites/default/files/files/TheImpactofFederalRegulatoryCostsonSmallFirmsPRFY2010.pdf [https://perma.cc/T3F3-QMU3].

26. *See* Heinzerling & Ackerman (2012), *supra* note 17, at 127–38. For additional critiques of the 2010 Crain study, *see also* Shapiro (2011), *supra* note 17; CRS (2011), *supra* note 17; and CRS (2016), *supra* note 17.

27. CRS (2011), *supra* note 17, at 1–2; CRS (2016), *supra* note 17, at 15–17; *see also* Shapiro (2011), *supra* note 17, at 3.

28. *Eliminating Job-Sapping Federal Rules Through Retrospective Reviews—Oversight of the President's Efforts: Hearing Before the Comm. on Small Bus.*, 112th Cong. 12 (2011) (statement of Cass Sunstein, Administrator, Office of Info. and Regulatory Affairs, Office of Mgmt. & Budget).

credulously cited in the news media and in congressional testimony.[29] But these criticisms should have raised questions among Members of Congress and their staff about the reliability of later and similar studies by these same authors.

B. Crews (2017)

The $1.88 trillion annual cost figure featured in *Ten Thousand Commandments* is derived from the 2016 edition of *Tip of the Costberg: On the Invalidity of All Cost of Regulation Estimates and the Need to Compile Them Anyway*, which Crews also updates and issues annually.[30] Again, both are self-published works that, as such, have not been subject to peer review or any other type of external publication filter. The author, Wayne Crews, is a vice president at Competitive Enterprise Institute (CEI), which announces itself (and is celebrated by others) as a zealous advocacy organization dedicated to opposing regulation and government intervention in the economy generally.[31] *Costberg* does not purport to be a scholarly analysis. It is a 140-page polemic that unfolds in sixteen chapters, each of which is prefaced by occasionally witty and often insulting quotes attesting to the evil or folly of government.[32] It offers barely a mention of the benefits of regulation and then only to discount them.[33] In *Principia Bureaucratica*, the online spreadsheet that supplies the tabulation of the numbers that appear in *Costberg* and *Ten Thousand Commandments*, Crews frankly declares that all of his estimates are "subject to change at author's discretion."[34] This is noteworthy because facts—and fact-based estimates—

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29.   *See supra* note 16 and accompanying text.

30.   Clyde Wayne Crews Jr., Tip of the Costberg: On the Invalidity of All Cost of Regulation Estimates and the Need to Compile Them Anyway (Jan. 8, 2017) (Working Paper) (available on Social Science Research Network (SSRN). [hereinafter, Crews, *Costberg* (2017)].

31.   *See, e.g.*, CEI's 2015-2016 Annual Report boasting of endorsements. (Fortune: "While many on the right are lying low while the free market implodes, the Competitive Enterprise Institute isn't backing down, fighting on fronts from the bailout to green energy." The Business Insider: "CEI's Myron Ebell may be enemy #1 to the current climate change community." Steve Forbes: "Over its 25-year history, CEI has played a critical role in preventing the worst of the left's utopian nightmares from becoming reality, and in undoing some of the damage those policies have created." Ron Paul: "CEI is a true asset to the freedom movement, on issues from global warming to financial regulation, I can always count on CEI to effectively make a principled case for liberty." Al Gore on CEI (lamenting): ". . . over 20 years, I have seen them have a tremendous effect.").

32.   For example, Crews writes, "'I have tried to present a factual—data-filled, at any rate—account of how this government works. Which is complicated by the fact that it doesn't.' —P. J. O'Rourke, Parliament of Whores." Crews, *Costberg* (2017), *supra* note 30, at 12. "'I never determined how many sections there really are to the federal system. It probably can't be done. Government is not a machine with parts: it's an organism. When does an intestine quit being an intestine and start becoming an asshole?'— P. J. O'Rourke, Parliament of Whores." *Id* at 43. He further writes, "'I was never molested by any person but those who represented the state.' —Thoreau." *Id.*

33.   *See* Crews, *Costberg* (2017), *supra* note 30, at 15 (claiming that consideration of regulatory benefits is merely a pretext for an "ever expanding government").

34.   Principia Bureaucratica: A Placeholder for the Total Annual Cost of Federal Regulation and Intervention, *reprinted herein* as Appendix B and available online at https://docs.google.com/spreadsheets /d/1R419caJsjzCrUr8SwGo_3nuj5-lnBLUvF18iSkqJF_0/pub?output=html   [https://perma.cc/A9M2-R823] [hereinafter Principia Bureaucratica].

obviously are not subject to change at an author's discretion. This candid caveat does not, of course, appear in Crews's testimony or media mentions of his findings, but it is there in this background document nonetheless, and it is revealing.

II. THE NON-TRANSPARENCY AND NON-REPRODUCIBILITY OF THE CRAIN AND CREWS STUDIES

The reproducibility criterion, in a nutshell, asks whether the underlying sources and data of the study have been published or made available to outside scholars.[35] Experiments and findings that are not reproducible, or for which source data are concealed, should be deemed presumptively not credible unless there is good reason for non-reproducibility in that case, such as individual privacy requirements or the nature of the study itself.[36] This Part will expose major issues with both studies when judged by this criterion.

A. Crain & Crain

The Crains have refused to publish or share the data supporting their 2014 study, despite numerous requests from this author. In so doing they follow the course they adopted with their 2010 study, in which they refused to divulge their study data even to the GAO.[37] Their refusal to disclose their underlying data and analysis to support reproduction efforts violates professional norms and is not explained or excused by any cited proprietary or privacy interest.

The Crains did publish the regression equation they used to estimate the cost of "economic" regulation, and the variables that appear in that equation can be supplied with data available from the public sources they said they used.[38] Working with a trained statistician this author therefore attempted to replicate their regression. The results of that effort are reported in the Annex to this Article. Drawing on published data sets that clearly are not identical to the Crains' data set, but are broadly similar (as indicated by a comparison of mean, standard deviation, and minimum and maximum values for each variable)[39] to supply values for variables in the Crains' regression equation yielded a regression coefficient that is statistically significant. It corresponds to an

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35. Francis S. Collins & Lawrence A. Tabak, *NIH Plans to Enhance Reproducibility*, 505 NATURE 612, 612 (2014) (noting that science "is founded on the replication of earlier work" and that reproducibility is the foundation of the "checks and balances that ensure scientific fidelity").

36. Sometimes the nature of the inquiry inherently precludes reproducibility: to cite an extreme example, one cannot validate the results of a study of the effects of nuclear explosions on human health based on data from the Hiroshima and Nagasaki bombings without dropping another nuclear bomb on another very similar city.

37. 2014 GAO Report on SBA, *supra* note 25, at 14–15.

38. Crain (2014), *supra* note 14, at 31–32.

39. *See* Annex Table 1 and Table 2.

"economic regulatory cost" figure that is about 64 percent of the figure the Crains propose.[40]

Thirty-six percent is a large discrepancy—it implies a regulatory cost that is $500 billion per year less than the Crains' estimate. Nonetheless, the reproduction effort did yield a statistically significant regression coefficient and the results are sufficiently similar to the Crains' results that we cannot reject with confidence the hypothesis that they ran the regression they say they ran, using data obtained from somewhere, and that they somehow obtained the results they report. The larger question explored in Part III is whether their methodology is sound, and their results meaningful.

B. Crews

Crews, unlike the Crains, does explain the derivation of his numbers in considerable detail. He even offers an online spreadsheet, entitled *Principia Bureaucratica: A Placeholder for the Total Annual Cost of Federal Regulation and Intervention* which supplies his specific numerical tallies by category and sub-category.[41] *Costberg* is also supported by 628 endnotes to his various sources.[42]

Inspection reveals, however, that 70 percent of his total $1.902 trillion cost estimate ($1.344 trillion) is accounted for by "Crews mods and supplements."[43] Crews calls these numbers "mods and supplements" to distinguish them from figures drawn from what he claims are OMB sources that presumably offer a firmer foundation for estimation. However, our audit of the largest categories of Crews's costs will reveal a disconcerting pattern and practice: Crews's numbers tend to be extracted from prior sources, which often derive the numbers from still older sources, and so on until the ultimate origin of the numbers has become opaque to the point of near invisibility.[44] This "Russian doll" citation pattern occludes the source, the vintage, and the credibility of the original numbers. When one finally arrives at the original source (the innermost "doll"), one finds an original study that may or may not be credible and may be decades-old and irrelevant to the modern regulatory environment. This pattern will emerge clearly from the discussion of methodology that follows.

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40.   This regression result is displayed in the third column of Table 3 in the Annex.

41.   Principia Bureaucratica, *supra* note 34, at row 171.

42.   Crews, *Costberg* (2017), *supra* note 30, at 143–70.

43.   Principia Bureaucratica, *supra* note 34, at row 167.

44.   *See* discussion *infra* Part III.B. Though Crews does not offer or discuss source-study selection criteria, the discussion that follows will reveal that Crews exhibits a clear preference for studies by authors at the Mercatus Center or other right-leaning centers, and by a group of repeat contributors to the anti-government-regulation literature: e.g., Mark and Nicole Crain, Jerry Ellig, Thomas Hopkins, Robert Hahn, Michael Hazilla, Joseph Johnson, Raymond, Kopp.

III. THE FLAWED METHODOLOGY OF THE CRAIN AND CREWS STUDIES

Neither the Crain nor Crews studies attempt to measure costs by simply adding up the measured cost of individual regulations enacted over the years. This is impossible, as the Crains explain, because no comprehensive tabulation of the costs of federal regulations exists.[45] The OMB's Annual Report on the Costs and Benefits of Federal Regulations estimates costs and benefits only for "significant" rules issued by executive branch agencies over the past ten years.[46] It does not capture the costs of older rules, smaller rules, rules issued by independent agencies, or guidance documents which may have the effect of imposing significant costs informally. Also, agencies typically measure only direct compliance costs, not indirect costs.[47] Most of all, the estimates are *ex ante* predictions generated by regulatory agencies during the rulemaking process, not validated *ex post* measurements.[48]

To fill the void left by the absence of hard data on the measured cost of regulation, Crain and Crews employ a variety of speculative strategies to estimate costs of a potpourri of government interventions that they lump together under the loose rubric of "regulation." Table 1 compares the estimates reached by the Crains and Crews for each of these categories of regulation:

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45.   Crain (2014), *supra* note 14, at 4–6.

46.   OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, 2015 REP. TO CONG. ON THE BENEFITS & COSTS OF FED. REG. & AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT 1 n.4 (2015). As seen below, OMB reports prior to 2002 used to look back more than ten years, and both Crain and Crews rely on these old reports for estimates of older rules, even though OMB's position since 2002 has been that such estimates are unreliable. *See* Crews, *Costberg* (2017), *supra* note 30, at 29–31; *see also* discussion in Part IV *infra*.

47.   Crain (2014), *supra* note 14, at 15–16, 27; Crews, *Commandments* (2016), *supra* note 15, at 9–10.

48.   *See* Crain (2014), *supra* note 14, at 3–6.

Table 1
The Cost of Federal Regulation: Comparison of Crain and Crews
Estimates (billions of current dollars)

Type of Regulation	Crain (2014)[49]	Crews (2017)[50]
All Federal Regulations	$ 2028	$ 1902
"Economic" Regulations	$ 1448	$ 402
"Social" (Health, Safety, and Environmental) Regulations	$ 401	$ 922
Tax Compliance Costs	$ 159	$ 316
Homeland Security Costs	$ 21	$ 57
Independent Agency Costs	No separate estimate	$ 205

Table 1 shows that the Crains and Crews end up with nearly the same total estimated cost, even though their estimates for the individual components of that total are radically different. The two studies define "economic" regulations very differently and employ disparate approaches to estimating their costs. They rely on similar sources and methods to estimate the cost of "social" regulation, but their scope of coverage within that overall category is markedly different: the Crains tally the cost of only EPA and OSHA regulations, while Crews sweeps much more broadly to encompass regulations issued by many other executive branch agencies. Given the size of the discrepancies in the values of individual cost components that comprise their aggregate figure, it seems clear that the congruence of the Crains' and Crews's end results—$2.028 trillion versus $1.902 trillion (a mere 7 percent discrepancy)—is either a remarkable coincidence or the result of an intentional effort to manufacture convergence.

In any case, since the two studies employ radically different methods to estimate the cost of "economic" regulation, the discussion that follows assesses those methods separately, with subpart A.1 devoted to the Crain and Crain study and subpart A.2 to Crews's analysis. For the remaining regulatory cost categories—social regulation, tax compliance, and homeland security—the two studies employ similar methods (though their scope is different) so their sources and methods studies will be assessed in tandem, with subparts B, C.1, and C.2

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49.   Crain (2014), *supra* note 14, at 40 tbl.6. The Crains do not use the term "social regulation." Their categories are "Economic," "Environmental," "Tax Compliance," and "OSHHS" (OSHA plus Homeland Security). *Id.* Since "Environmental" and "OSHA" regulations are included within the category of social regulation in Crews's nomenclature, we added the $330 billion figure that appears in the Crains' Table 6 for "Environmental" to the $71 billion figure for OSHA regulation in Crain (2014) Table 4, p. 37 to yield the $401 billion figure for "Social Costs" in the Crain column.

50.   Figures in this column are derived from Principia Bureaucratica, *supra* note 34. The Total for All Federal Regulations of $1,902 billion is found in Row 162. Source for the remaining figures in the Crews column are as follows: "Economic" Regulations: row 14; "Social" Regulation: sum of numbers in rows 162 through 164 and row 16 plus sum of all Crews mods and supplements for Executive branch agencies (tabulated in rows 21 to 93 of column J); Tax Compliance: row 17; Homeland Security: row 50; Independent Agency Costs: row 165, plus row 166 plus sum of figures appearing as "Crews Mods and Supps" in column J, rows 96 through 159. *Id.*

examining the Crains' and Crews's estimates of annual cost for social regulation, tax compliance, and homeland security, respectively.[51]

A. *"Economic" Regulations*

The Crains' regulatory cost estimate of $1.448 trillion for "economic" regulations is very high, more than three times the magnitude of Crews's estimate of roughly $400 billion.[52] One explanation for the discrepancy may be found in the uniquely broad definition of economic regulations they employed, a usage that departs sharply from Crews's, OMB's, and most other analysts' definition of the term.[53] The standard approach followed by OMB, OECD, and Crews defines "economic" regulation to refer to a particular set of market access and price regulations in (once) pervasively regulated sectors such as airlines, trucking, rail, electricity, and telecommunications.[54] The Crains, by contrast, define "economic" regulations much more broadly to include virtually all regulations of economic activities of any kind.[55] Having chosen an all-encompassing definition, the Crains conclude: "Obviously the reach of economic regulations is vast. This means that an encompassing methodology is required to derive an estimate of these costs."[56]

1. *The Crains' Estimate ($1.448 trillion)*

The "encompassing methodology" the Crains chose for estimating "economic regulatory costs" thus defined is to regress per capita GDP against an index drawn from an opinion poll.[57] This section will demonstrate rigorously what intuition would suggest: there is no statistical abracadabra that allows one to generate objectively reliable measures from a casual opinion poll of nonexperts. We will see that their methodology is invalid and their conclusions meaningless, despite the fact that they managed to find a "statistically significant" correlation between two variables. In fact, we will explore how they accomplished that statistical "rabbit-out-of-the-hat" trick.

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51.   *See* discussion *infra*, Parts III.C–III.E.
52.   Crain (2014), *supra* note 14, at 50; Crews, *Commandments* (2016), *supra* note 15, at 10 fig.1.
53.   Crain (2014), *supra* note 14, at 28.
54.   Crews, *Costberg* (2017), *supra* note 30, at 36 ("Economic regulation, as defined by OMB in that era 'restricts the prince or quantity of a product or service that firms produce including whether firms can enter or exit specific industries.'")
55.   *Id*. The Crains define "economic" regulation to include:

> rules that govern decision-making in market transactions. These include markets for final goods and services; markets for physical and human resources; credit markets; and markets for the transport and delivery of products and factors of production. Economic regulations affect who can produce; what can (or cannot) be produced; how to produce; where to sell; input and product pricing; and what product information must be or cannot be provided.

Crain (2014), *supra* note 14, at 28. This definition sweeps in virtually the entire category of what OMB and Crews term "social" regulation.
56.   *Id.*
57.   *Id.* at 31.

a. Overview of Methodology

The Crains' regression adopts an Economic Regulation Index (ERI) as its main variable of interest. This Index is derived from a much larger opinion survey conducted by the World Economic Forum (WEF), a nonprofit organization based in Switzerland.[58] Each year the WEF compiles a Global Competitiveness Index (GCI) which ranks the overall "competitiveness" of 148 countries based upon their score (on a scale from one to seven) on 114 different criteria grouped into twelve separate "pillars."[59] The ranking on thirty-eight of these criteria is determined largely by objective data drawn from published sources.[60] Scores on the remaining seventy-six criteria are determined by asking an average of ninety-five business executives (of which nearly half are leaders of small businesses) in each country to complete an Executive Opinion Survey that asks one question about each of these eighty-one topics.[61]

From this list of seventy-six questions, the Crains chose the following three questions to serve as the basis for their self-styled ERI:

1.09 Burden of government regulation: In your country how burdensome is it for businesses to comply with governmental administrative requirements (e.g. permits, regulations, reporting?) (1 = extremely burdensome; 7 = not burdensome at all);

1.11 Efficiency of legal framework in challenging regulations: In your country, how easy is it for private businesses to challenge government actions and/or regulations through the legal system? (1 = extremely difficult; 7 = extremely easy);

8.07 Regulation of Securities Exchanges: In your country how effective are the regulation of securities exchanges? (1= not at all effective; 7 = extremely effective).[62]

The remaining seventy-three questions cover the waterfront in much the same fashion, asking each business executive to rate his or her country's performance on matters ranging from the quality of health and primary

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58.   *Id.* at 31–32.

59.   WORLD ECONOMIC FORUM, THE GLOBAL COMPETITIVENESS REPORT 2013-2014: FULL DATA EDITION (Klaus Schwab, ed., 2013), at 49–51, 83–85 and 383 [hereinafter, WEF 2013-2014 Global Competitiveness Report]. The Pillars are: Institutions, Infrastructure, Macroeconomic Environment, Health and Primary Education, Higher Education and Training, Goods Market Efficiency, Labor Market Efficiency, Financial Market Development, Technological Readiness, Market Size, Business Sophistication, and Innovation. Note that "Quality of Government Regulation" is not deemed by the compilers to the Index to be of sufficient importance to national competitiveness to warrant mention as a separate category. There is one question (among eighty-one) devoted to the "Burden of Government Regulation" and two other questions that include the word "regulation." These three questions supply the data for the entirety of the Crains' home-made "Economic Regulatory Index." *Id.* at 401.

60.   *Id.* at 541–45 (listing thirty-two criteria determined by objective data and three criteria determined by subjecting ratings from other, non-WEF polls).

61.   *Id.* at 94.

62.   *Id.* at 418, 420, 506.

education, to tax policy, competition policy, trade policy, quality of scientific research institutions, and the quality of roads, airports, electricity supply, etc.[63]

WEF staff then compute the average value of each country's ranking on each criterion. The final step for WEF is to assign weights to each of these 114 average scores (seventy-six derived from the Executive Opinion Survey and thirty-eight from other sources) and aggregate them into a single GCI score and ranking for each country.[64] This is done year after year, producing time series as well as cross-sectional data on how businessmen rate their country's performance on the factors that WEF staff believe contribute to each country's global competitiveness and hence its national wealth.

The Crains did not use the overall GCI, however. Their sole interest in the WEF study is as a repository of opinion poll ratings from which they can pluck scores for the three poll questions with the word "regulation" in them. These scores are averaged to yield the Crains' self-styled ERI for the United States and for thirty-three other OECD countries each year from 2006 to 2013. They then use these composite ERI scores along with data on their selected control variables for each OECD country in each of the years covered by their regression analysis. This generates a panel of data spanning thirty-four countries and eight years.[65]

They then proceed to conduct their regression using the following regression model:[66]

$$\ln(PCGDP_{i,t}) = \beta(ERI_{i,t-1}) + \varphi(\chi)_{i,t-1} + \alpha_i + \varepsilon_{i,t}$$

where:

PCGDP stands for per capita GDP in country "i" and year "t" ;

ERI stands for Economic Regulation Index for each country *i* in each year *t;*

β is the regression coefficient for ERI. It is calculated by the regression and is the key variable of interest in the equation;[67]

χ represents a "vector" of control variables chosen by the authors to control for factors other than ERI that might influence per capita GDP;[68]

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63.   *Id.* at 383.

64.   WORLD ECONOMIC FORUM, *supra* note 59, at 78–79.

65.   The Crains announce that "GDP per capita" is entered as a logarithmic transformation to permit a comparison between a percentage change in the variable of interest and percentage changes in per capita GDP. Crain (2014), *supra* note 14, at 32.

66.   *Id.* at 31–32. The equation that appears on page 31 of the Crains' unpublished study lacks a logarithmic transformation of the dependent variable. The authors clearly state, however, that "GDP per capita and the size of the labor force are entered into the regression models as natural logarithmic transformations," *Id.* at 32. Moreover, even approximate reproduction of their results is impossible without such a transformation. So we must assume that the equation that appears on page 31 of their report is either an intentional simplification of the equation they actually used, or else a mistake.

67.   Note that they lag the ERI variable by one year so that ERI in year t-1 is correlating with PCGDP in year t. *Id.* at 31.

68.   The control variables chosen by the Crains are: trade/GDP (foreign trade as a share of GDP); dependency ratio (population over 65 relative to population aged 19–65); new capital investments as a share of GDP; size of the labor force; tax revenues as a share of GDP; tax revenues as a share of GDP

$\boldsymbol{\varphi}$ is a "vector" of regression coefficients calculated for each control variable included in the vector of control variables;

$\boldsymbol{\alpha_i}$ is a country-wide fixed effects variable that appears in their regression equation but was not actually used;[69] and

$\boldsymbol{\varepsilon_{i,t}}$ is an error term for each country "i" and year "t" which is assumed to be the product of random factors and thus normally distributed around a correct estimate.

The Crains report that the regression analysis described above yielded a value of *0.081* for β, with a greater-than-95 percent level of statistical significance.[70] They then calculate the mean value of the ERI for the five highest-ranked OECD countries and compare it to the U.S. score on the ERI.[71] For 2012, it turns out that the average score of the five highest-ranked countries was 26 percent higher than the score for the United States, from which the Crains conclude that "if the burden of economic regulations in the United States matched the benchmark countries, U.S. GDP would be $1.439 trillion higher than it was in 2012 (denominated in 2014 dollars)."[72]

b. Critique

To a pundit or policy maker not immersed in the nuances of empirical analysis, a study such as the one done by the Crains might easily pass for sound scholarship. *"Is it likely,"* the lay person may ask, *"that a correlation between two variables would be statistically significant at a 95 percent confidence level if there is no real world relationship between the variables?"*

The answer, in a nutshell, is yes. It turns out to be quite possible to generate regression coefficients that are "statistically significant" and large—and yet specious. There are many ways to accomplish that, but two will be discussed in this Article: (i) mis-specifying the regression model and (ii) choosing an invalid and biased proxy for the main variable of interest. The Crains' model commits both errors.

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squared "to allow for a nonlinear effect of tax policy"; year = 2008 (a dummy variable inserted without explanation); and year = 2009 (another dummy variable inserted without explanation). *See* Crain (2014), *supra* note 14, at 32–34. The unexplained dummy variables for 2008 and 2009 probably reflect the anomalous character of those years which marked the beginning of the Great Recession. *See* discussion *infra* note 82 and accompanying text.

69.   The Crains' published regression model includes the term α_i suggesting that a "fixed-effects" variable unique to each country "i" was used to account for endowment effects in each country. Crain (2014), *supra* note 14, at 31–32. The Crains elsewhere indicate in a footnote, however, that they did *not,* in fact, include country fixed-effects variables in the regression. *See* Crain (2014), *supra* note 14, at 33 n.28. Indeed, the actual use of a fixed-effects variable reduces the regression coefficient of ERI to near zero and eliminates its statistical significance. *See* discussion *infra* at note 89 and accompanying text, and Annex 3 col. 3.

70.   Crain (2014), *supra* note 14, at 33.

71.   *Id.*

72.   *Id.*

i. The Regression Model is Mis-specified

The economic literature is rich with studies of the impact of different variables on national economic performance. Most such studies begin with an effort to ground their selection of a regression model in a plausible causal theory drawn from the economic literature on the determinants of national economic performance.[73] The Crains, however, offer no such explanation of their choice of dependent or independent variables. Indeed, their selection of variables is accompanied by no justification beyond the cursory observation that "control variables are drawn from the empirical literature that examines differences in economic levels across countries and over time."[74]

It turns out, however, that the Crains' choice of dependent variable (per capita GDP, rather than growth rate of per capita GDP) is not only unexplained but also methodologically unsound. Recognizing that the chief determinant of this year's GDP is last year's GDP, the nearly universal practice in published studies examining the influence of factors affecting macroeconomic performance is to use GDP *growth* or per capita GDP *growth* as the dependent variable, rather than per capita GDP.[75] Indeed, all the externally published peer studies cited by the Crains in their own paper use GDP growth rate, not GDP itself, as the dependent variable.[76] Only one study referenced by the Crains uses per capita GDP as the dependent variable, and even that study includes an examination of impacts of the explanatory variables on per capita GDP growth as well, recognizing that "[h]igher income levels are the result of higher past rates of growth. If there is a causal relationship between institutional quality (or any other

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73. *See, e.g.*, Robert J. Barro, *Economic Growth in a Cross Section of Countries*, 106 Q. J. ECON. 407, 407–09 (1991); Ross Levine & Sara Zervos, *Stock Market Development and Long-Run Growth*, 10 WORLD BANK ECON. REV. 323, 323 (1996); Torsten Persson & Guido Tabellini, *Is Inequality Harmful for Growth?*, 84 Am. Econ. Rev. 600, 600–01 (1994); Ross Levine & David Renelt, *A Sensitivity Analysis of Cross-Country Growth Regressions*, 82 AM. ECON. REV. 942, 943–45 (1992) (surveying a large literature examining impacts of various variables on long-term average rates of GDP growth) [hereinafter, Levine (1992)].

74. Crain (2014), *supra* note 14, at 32.

75. *See* sources identified *supra* note 73; *see also* Levine (1992) *supra* note 73, at 962–63 (studies surveyed).

76. *See* Crain (2014), *supra* note 14 at 32 n.26. The sources they cite in footnote 26 are Hall, Robert E. & Charles I. Jones, *Why Do Some Countries Produce So Much More Output Per Worker than Others?*, 114 QUARTERLY J. OF ECON. 83, 108 (1999); Norman V. Loayza et al., Regulation and Macroeconomic Performance (September 2004) (World Bank, unpublished Working Paper), https://openknowledge. worldbank.org/bitstream/handle/10986/8953/wps3469.pdf?sequence
=1&isAllowed=y[https://perma.cc/Q2EK-4G5H; James D. Gwartney et al., *Economic Freedom, Institutional Quality, and Cross-Country Differences in Income and Growth*, 24 CATO J. 205, 210 (2004) [hereinafter Gwartney]; Xavier Sala-i-Martín et al., *Determinants of Long-Term Growth: A Bayesian Averaging of Classical Estimates (BACE) Approach*, 94 AM. ECON. REV. 813, 821 (2004); Fabio Schiantarelli, Product Market Regulation and Macroeconomic Performance: A Review of Cross-Country Evidence (August 4, 2008) (Boston College and IZA) (unpublished manuscript) http://fmwww.bc.edu/ec-p/wp623.pdf [https://perma.cc/A9E6-MYA7] (examining impact of regulation on economic growth and citing to a 2004 IMF study which did the same). All these peer sources cited by the Crains use GDP growth rate as a dependent variable and all but one use it as the sole dependent variable.

independent variable) and per capita GDP, differences in growth rates should also reflect this relationship."[77]

We therefore consider what happens if GDP growth is substituted for GDP as the dependent variable in the Crains' model. When this is done, the regression coefficient loses statistical significance and changes sign to become negative—suggesting a statistically insignificant but *negative* association between ERI and economic growth.[78]

This is not necessarily the end of the story, however. Perhaps there are also errors on the right side of the Crains' regression which, if corrected, would restore ERI to its rightful place as a statistically significant factor shaping of per capita GDP *growth*. As Finkelstein writes in his primer on use of statistics in law, "[i]deally, the choice of explanatory factors would be determined by some relevant theory that provides a basis for selecting factors and does not depend on the particular available data."[79] Again, the Crains offer no such theoretical grounding for their regression conditioning set. However, in an important article published in the American Economic Review in 1992, Levine and Renelt surveyed an already vast literature that "uses cross-country regressions to search for empirical linkages between long-run average growth rates and a variety of economic policy, political, and institutional factors suggested by theory."[80] They distilled from the literature a set of variables (which they dubbed "I-variables") that are frequently included as control variables in regressions of this kind. These variables included investment share of GDP, initial level of real GDP per capita, initial secondary school enrollment rate, and average annual rate of population growth.[81] Levine and Renelt also identified two variables, ratio of trade to output and share of investment in GDP, that have exhibited a robust association with per capita GDP growth across multiple model specifications in prior studies. The Crains' model used these two variables among others.[82] It also added a dummy

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77. *See* Gwartney, *supra* note 76, at 216 (using both GDP growth and GDP as dependent variables).

78. *See* Annex, Table 3, column (4). Since a high ERI corresponds to low burden in the Crains' methodology, their regression (when corrected to substitute per capita GDP growth for per capita GDP on the left side) would suggest that greater regulatory burden correlates with a *higher* rate of economic growth, though the relationship is not statistically significant by conventional measures. Again, because the Crains refused to share their dataset, we were not able to use their exact data for our replication efforts, so we used a data set as similar to theirs as we could find in the public sources they cite. *See* Annex, Tables 1-2.

79. MICHAEL. O. FINKELSTEIN, BASIC CONCEPTS OF PROBABILITY AND STATISTICS IN LAW 145, 145 (Springer 2009) [hereinafter Finkelstein (2009)].

80. *See* Levine (1992) *supra* note 73, at 942 and sources cited therein.

81. *Id.* at 494.

82. Crain (2014) *supra* note 14, at 32–33. The Crains' control variables are trade/GDP, new capital investment, dependency ratio (population over 65 relative to population aged 19–65), tax revenues/GDP, (tax revenues/GDP) "to allow for a non-linear effect of tax policy," and size of the labor force. The first two of these variables are supported by the Levine & Renelt analysis. The next three variables that appear in the Crain regression are not mentioned in Levine (1992) (*see* Levine (1992) *supra* note 73, at 960–61 for a list of variables studied), but may well have emerged as significant factors since 1992. The Crains' decision to use labor force size rather than population growth rate or labor force growth rate is truly difficult to understand. Certainly, population growth rate would be an obvious choice for a model aimed

variable for each of the years 2008 and 2009.[83] While they did not supply their reasoning in print, this presumably was intended to account for the unusual economic conditions that prevailed in those years in the aftermath of the 2008 market crash.

So, as a further test of the robustness of the association the Crains claim to have found between ERI and macroeconomic performance, we explored what happens if one regresses per capita GDP growth against the Crains' ERI, using the standard set of control variables suggested by Levine and Renelt along with the two variables that were shown by those authors to have a stable and robust association with growth (ratio of trade to GDP and capital expenditure to GDP—both also used by the Crains), and the Crains' suggested dummy variables for 2008 and 2009. The results of that effort are displayed in the Annex to this Article, Table 5, column 2. The bottom line is: once again, the regression coefficient changes sign and becomes statistically insignificant by common measures.

The preceding discussion has demonstrated that the Crains' regression coefficient for ERI depends for its statistical significance (and even its correct sign) on the use of a problematic dependent variable, per capita GDP, in the regression. When the dependent variable that conforms to standard practice (per capita GDP growth) is used, the correlation disappears and cannot be resurrected by altering the specification of the model to reflect a reasonably standard and reputable set of control variables. It would appear that the "statistically significant" performance of ERI in the regression depends upon the use of an incorrectly-specified dependent variable.

While the Crains' regression model does not yield a statistically significant association between ERI and economic growth, their unique model employing per capita GDP turns out to be *very* capable of assigning specious "statistical significance" to the regression coefficients for any number of other variables.[84]

Recall, for example, that the ERI index chosen by the Crains is a composite of three scores chosen from a WEF survey of over eighty questions. Each question on the survey was chosen because the WEF study authors regarded it as a potential contributor to national "competitiveness." We now explore what happens if we substitute six of these other variables (chosen without prior knowledge of the results) for ERI one at a time, in the regression model that the Crains actually used.

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at explaining economic growth, so that is the independent variable chosen in our robustness experiment (*see* Annex A Table 5).

83.   *See* Crain (2014), *supra* note 14, at 34 tbl.3.

84.   Indeed, the Crains demonstrate that their model will generate statistically significant and large regression coefficients for the similar, but different, World Bank Regulatory Quality Index they used in their 2010 study as well as the Economic Freedom of the World Index. *See* Crain (2014), *supra* note 14, at 68–71. This magic trick, used to suggest robustness of their estimation method, becomes less impressive when one understands that the Crains' regression model cannot explain per capita GDP *growth* at all, but it can make almost *any* variable look good when regressed against per capita GDP.

The results of that experiment: *all but one* of these factors—when run through the 2014 Crains' regression model—emerge with high regression coefficients that are "statistically significant" at a higher than 95 percent confidence level, just like the ERI index.[85] Indeed, the same regression technique that yields the Crains' $1.43 trillion cost figure for regulation yields the following implicit cost to U.S. GDP of falling short of the benchmark (Top-Five-in-the-World) rating on five other criteria:

Table 2
Implicit Costs to GDP of Sample WEF variables
Substituted for ERI in the Crains' Regression Model

Statistically Significant Indices	Implicit cost
1.04 Public Trust in Politicians	$1.863 trillion
1.06 Judicial Independence	$1.352 trillion
1.07 Official Favoritism	$1.124 trillion
1.08 Wastefulness of Government Spending	$1.507 trillion
1.15 Organized Crime	$1.993 trillion
Total	**$7.839 trillion**

Such results obviously strain credulity. Are we really to believe that failure to achieve "Top-Five" scores on the "judicial independence" survey costs the U.S. economy nearly $1.4 trillion? That the United States could add over $1 trillion dollars per year to the GDP by achieving "Top-Five" standards of avoiding official favoritism in decisions of government officials? That attaining "Top-Five" excellence on these five criteria alone would add, collectively, nearly $8 trillion per year to the U.S. GDP?

While a complete diagnosis of the causes of these spurious correlations are beyond our present scope, one obvious explanation for the Crains' results presents itself. Indeed, CRS hinted at this in its review of the 2010 Crains' study, which employed a similar methodology.[86] Basic statistical theory teaches that omitting key explanatory variables that are correlated with both an included variable and the dependent variable can cause the regression to spit out a regression coefficient for the included variable that is both biased and speciously precise. The intuitive reason is that the explanatory power of the omitted variable(s) gets attributed to the one variable that is included and that correlates with both them and the dependent variable.[87]

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85.   *See* Annex, Table 4, columns (1) through (6).

86.   CRS (2016), *supra* note 17, at 22.

87.   WILLIAM E. GRIFFITHS ET AL., LEARNING AND PRACTICING ECONOMETRICS 307–09 (1993) (discussing causes and consequences of omitted variable bias). CRS researcher, Maeve Carey, speculated as to the possibility of this sort of bias in her review of the Crains' 2010 regression analyses. *See* Maeve P. Carey, CONG. RESEARCH SERV., R44348 METHODS OF ESTIMATING THE TOTAL COST OF FEDERAL REGULATIONS 22 (Jan. 21, 2016), citing Harrington, *infra* note 196, at 12. Here, in fact, the WEF study supplies dozens of candidates for omitted variables that may contribute to GDP quite independently of

In this case, the most likely explanation for the Crains' anomalous results is that they omitted from their regression an array of relevant variables that, together, reflects various countries' levels of development, quality of governance, education system, enterprise system, and infrastructure overall. Moreover, these long-term and slowly-changing or unchanging attributes tend to go together, meaning that countries that score well or poorly on one index in this bundle also tend to do well or poorly on others. Such attributes form a sort of endowment for each country. There is a statistical regression technique that allows researchers to control for such endowment effects. It is called a "fixed effects" model, and it is a widely used and recommended practice in the estimation of panel data such as that which the Crains employ.[88] It would seem particularly appropriate in this case, given the Crains' decision to use per capita GDP rather than per capita GDP growth as the dependent variable, since per capita GDP is itself, in the main, a relatively long-term attribute that in normal times varies only marginally from year to year. The Crains did not use the fixed-effects model, however. When we ran the Crains' regression using their model specification but inserting a fixed-effects parameter, the regression coefficient on ERI once again changed signs and lost its statistical significance.[89]

The anomalies that surfaced with the Crains' regression highlight a larger problem, one that bedevils even studies constructed more rigorously than the Crains' regression. The previously-discussed Levine and Renelt study in 1992 identified "over 50 variables [that] have been found to be significantly correlated with growth in at least one regression."[90] Levine and Renelt then employed a technique known as Extreme Bounds Analysis to test the robustness of the regressions examining these variables. This analysis revealed that only two variables—ratio of trade to output and share of investment in GDP—exhibit a robust relationship to per capita GDP growth, i.e., one whose statistical significance does not depend heavily on particular choice of control variables chosen for the right side of the equation.[91] All other identified relationships "are very sensitive to slight alterations in the conditioning set of variables, and many publicized coefficients change sign with small changes in the conditioning set of

regulatory stringency or quality, and there may be other contributing variables not covered by WEF. Since all these variables are omitted from the regression, their explanatory power would be attributed to the included variable, ERI, along with any other included variable with which the omitted variables may happen to correlate.

88.   Jeffrey M. Wooldridge, *Fixed Effects Estimation,* INTRODUCTORY ECONOMETRICS: A MODERN APPROACH (5th ed.) at 484–99 (2013).

89.   *See* Annex, Table 1 column 3 for that result. The Crains explain in a footnote that they did not use a fixed-effects model because "the number of years in the sample period is somewhat modest (2006 to 2013)." Crain (2014), *supra* note 14, at 33 n.28. The proper response to that problem, however, would have been to expand the sample to include more years, rather than ignoring the model and omitting the effects for which it corrects.

90.   Levine (1992), *supra* note 73, at 942

91.   *Id.* at 943. This author is not aware of any study since the 1992 Levine & Renelt study that has updated their analysis or otherwise identified additional variables that exhibit a robust relationship to per capita economic growth across multiple sets of control variables.

variables."[92] They concluded that "there does not exist a consensus theoretical framework to guide empirical work on growth, and existing models do not completely specify the variables that should be held constant while conducting statistical inference on the relationship between growth and the variables of interest."[93]

In the absence of any clear guidance given by economic theory as to which explanatory control variables should be included in regression analysis, analysts sometimes use statistical regression to test different variables against the data set and then choose the variables that exhibit the best fit. This practice, which some criticize as "data-dredging," can yield valid insights into economic behavior, but *only if* the model thus generated is then tested against a *different* data set (or multiple data sets) and proves itself robust. In most cases, we would expect the model to fail that additional test if the model is, in reality, just the chance artifact of the algorithm and the data set that produced it.[94] There is no evidence that the Crains took this extra step, however.

Though this author is not privy to the Crains' work product, their failure to ground their model in the economic literature or even choose the appropriate dependent variable strongly suggests that the close fit they achieved is best explained by a combination of omitted variable bias, endowment effects, a mis-specified dependent variable and data-dredging.[95] Even if they had been able to show a strong association between ERI and economic *growth*, their results would not have been robust enough to support a major policy shift without an additional demonstration of robustness across multiple data sets (e.g., different years or different choices of countries) and/or a range of plausible alterations in the set of conditioning variables.

This Subpart has shown that the Crains' model is not solidly grounded in a plausible theory of the determinants of economic growth or income, and that it employs an incorrectly-specified dependent variable while omitting important explanatory variables and endowment effects. The model that they use generates impressive results for ERI and for a host of other variables. These impressive results disappear, however, and the regression coefficient becomes insignificant

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92.   *Id.* at 942–43.

93.   *Id.*

94.   For an excellent description of this problem, *see* Finkelstein (2009), *supra* note 79, at 145–46.

95.   Another consideration that supports a hypothesis of data-dredging is their strategic choice of components for ERI. The most straightforward and intuitive indicator of regulatory burden to use in their regression would have been simply "Burden of government regulations." Annex Table 4 columns (7) and (8) show what happens if the Crains' composite index of three indicators—1.09 Burden of Government Regulations; 1.11 Efficiency of legal framework in challenging regulations; and 1.08 Regulation of securities exchanges—is deconstructed into components and substituted in the Crains' regression for ERI. Interestingly, Burden of Government Regulation only has a small value and is not statistically significant by traditional measures, when inserted by itself into the Crains' regression in place of ERI. It gains a statistically significant regression coefficient only when bundled with two other measures that do not directly track regulatory burden.

and changes sign, when the dependent variable is correctly specified as per capita GDP growth.

Such deficiencies are more than enough to disqualify the Crains' study from serious consideration as the basis for a major policy shift. Even looking beyond the shortcomings of their choice of control and dependent variables, however, the Crains' study should be discounted for a second reason: their decision to use an index drawn from a multinational opinion poll as the proxy for regulatory stringency. Because this strategy has been employed in other studies,[96] the next subpart will assess the additional issues raised by that estimation approach.

ii. Pitfalls of Using Opinion Polls as Proxies for Actual Numbers

For a regression equation to supply probative statistical evidence of meaningful correlation between two variables, both theory and common sense instruct that the main variable of interest must provide a reasonable, unbiased measure or proxy of the thing being measured: it should exhibit "construct validity."[97] In this case, that means that ERI must provide a valid proxy for actual regulatory stringency. The WEF opinion poll on which the Crains rely clearly does not meet that condition. Rather than elicit informed measures or estimates of actual regulatory stringency or burden, the WEF poll simply asks respondents to rate on a scale from one to seven the intensity of their disagreement or agreement with a sweeping generality about seventy-six separate topics, only one of which actually mentions regulatory burden.

Using such an index as a proxy for regulatory stringency encounters at least three methodological objections from the standpoint of construct validity.

First, the WEF index is subjective and not necessarily well informed. Given that poll respondents are asked to opine on scores of separate topics ranging from quality of education to the effectiveness of stock market regulation to the honesty of their government, they could not possibly be expected to have a sound empirical grounding for fully informed opinions on all or even most of the questions asked. Nor is it reasonable to assume that their uninformed answers will distribute normally around the "right answer" as the mean. Consider, by way of illustration, the recent "Perils of Perception Poll" conducted by research

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96.   *See, e.g.*, NICOLE V. CRAIN & W. MARK CRAIN, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS, REPORT FOR SBA OFFICE OF ADVOCACY UNDER CONTRACT NUMBER SBAHQ-08_M-0466 (Sept. 2010) [hereinafter Crain (2010)] at 19 (reporting that the authors regress per capita GDP of various countries over time against, inter alia, a "Regulatory Quality Index" drawn from "polls of perceptions [by business leaders] of the ability of governments to formulate and implement sound policies and regulations that permit and promote private sector development." *See also* Gwartney, *supra* note 76, at 216.

97.   PETER KENNEDY, A GUIDE TO ECONOMETRICS (6th ed.) at 281–92 (2008); ROBERT M. LAWLESS ET AL., EMPIRICAL METHODS IN LAW 35–36 (Kluwer 2016) (discussing the concept and requirement of construct validity). Indeed, courts have rejected regression models used to support claims of employment discrimination when confronted with evidence that the measure used as a proxy for labor market experience was biased and inaccurate. *See* Finkelstein (2009), *supra* note 79, at 146–47 (discussing the impact of biased proxies on regression coefficients and describing the court's rejection of a model employing an inaccurate proxy).

company Ipsos Mori.[98] That survey of 27,000 people from forty countries revealed that many people are uninformed about basic facts in their own country. Moreover, Americans were the fifth *least* informed about their own country, and their average guesses were often wildly off the mark and did not disperse around the correct mean value even when many guesses were taken. To take just one example, U.S. respondents were asked "[w]hat percentage of total annual gross domestic product do you think is spent on health expenditures every year?" The mean response is 31 percent. The actual spending ratio, according to the poll is 18 percent, a 72 percent discrepancy.[99] Similar discrepancies surfaced in other questions, even when—unlike the WEF questions—the questions asked were about a number that *someone* knows.[100]

Second, there are strong *a priori* reasons to suppose that the index of American business opinions about the burden of U.S. regulation may be influenced by the messages respondents are getting, directly or indirectly, from Crews, the Crains, and many similar voices. Behavioral economics teaches that causal perceptions are subject to error-inducing "heuristics." One of these, the "availability heuristic," describes the tendency of observers' perceptions of a risk or cost or other factor to be shaped by the availability of vivid illustrations of that factor.[101] For example, estimates of the risk of air travel increase after a widely-publicized air disaster, and assessments of the risks of guns increase after a mass shooting, etc.[102] There is no reason to suppose the logic of the availability heuristic to be limited to perceptions of the risk of mass disasters. Repeated reinforcement of a claim or point of view in speeches, in the news media, at business conferences, in trade association letters, in congressional testimony, etc., may exert a similar biasing influence on the business community via the availability heuristic.

In the U.S. regulatory context, we have seen the media attention given to the Crains' 2010 study of regulatory burden and to the latest edition of Crews's

98.   Elizabeth Chang, *Many Americans have Inaccurate Perceptions about the U.S.*, WASH. POST. MAG., May 21, 2017, at 10.

99.   *Id.*

100.   *See id.* (documenting Americans' erroneous views that the U.S. population is 17 percent Muslim, compared with the actual reality that it is 1 percent Muslim, and the false perception that the least wealthy 70 percent own 28 percent of the total wealth in American while, in truth, that 70 percent of the population only possesses 6 percent of the wealth).

101.   *See* Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1127–28 (1974); Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCHOLOGY 207, 230 (1973), available online at doi:10.1016/0010-0285(73)90033-9; Karyn Riddle, *Always on My Mind: Exploring How Frequent, Recent, and Vivid Television Portrayals Are Used in the Formation of Social Reality Judgments*, 13(2) MEDIA PSYCHOLOGY 155, 159 (2008), available online at doi:10.1080/15213261003800140.

102.   *See* Paul Slovic et al., *Facts Versus Fears: Understanding Perceived Risk,* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 463, 465–66 (Daniel Kahneman et al. eds., 1982); Josh Blackman & Shelby Baird, *The Shooting Cycle*, 46 CONN. L. REV. 1513, 1525–26 (2014).

work.[103] These are only the latest installments of a series of similar studies.[104] Perusing the websites of the National Association of Manufacturers, the Chamber of Commerce, the Competitive Enterprise Institute, the Heritage Foundation, the Cato Institute, the Heartland Institute, the Small Business Administration (SBA) Office of Advocacy, and the Mercatus Center reveals a cottage industry of well-funded advocates dedicated to the mission of highlighting the burden of government and of government regulation in the United States, thus making it "available" to U.S. citizens, including and especially the U.S. business community.[105] Indeed, the SBA and the National Association of Manufacturers (NAM) funded the two Crains' studies.[106] We must presume that the SBA's and NAM's business executive constituents have been made aware of the Crains' findings. That would surely influence their responses to poll questions about the burden of government regulation.

It may be the case, of course, that similarly dedicated efforts to highlight regulatory burden are occurring in all the countries ranked above and below the United States in the WEF poll, such that these biasing influences cancel each other out. While an empirical assessment of that possibility is beyond our present scope, it seems unlikely given the regulatory regimes of the top-ranked countries in the Global Competitiveness survey. That list includes countries such as Germany, Sweden, Austria, Finland, Latvia, Estonia and the Netherlands—all members of a European Union that is not particularly noted for regulatory laxity.[107]

Given the circumstances reviewed above, it would seem difficult for the Crains to establish with a high degree of confidence that the ordinal ranking captured by the WEF is actually an independent variable and not simply a

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103.   *See supra* note 16 and accompanying text.

104.   *See, e.g.*, Crain (2010), *supra* note 96; W. MARK CRAIN & THOMAS D. HOPKINS, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS: A REPORT FOR THE OFFICE OF ADVOCACY, U. S. SMALL BUSINESS ADMINISTRATION RFP NO. SBAHQ-00-R-0027 (2001).

105.   *See* NATIONAL ASSOCIATION OF MANUFACTURERS, https://www.nam.org/About/ (last visited Jan. 25, 2019); U.S. CHAMBER OF COMMERCE, https://www.uschamber.com/about-us/about-us-chamber /policymaking-process (last visited Jan. 25, 2019); COMPETITIVE ENTERPRISE INSTITUTE, https://cei.org /about-cei (last visited Jan. 25, 2019); THE HERITAGE FOUNDATION, https://www.heritage.org/about-heritage/mission (last visited Jan. 25, 2019); CATO INSTITUTE, https://www.cato.org/about (last visited Jan. 25, 2019); THE HEARTLAND INSTITUTE, https://www.heartland.org/about-us/index.html (last visited Jan. 25, 2019); U.S. SMALL BUSINESS ADMINISTRATION, https://www.sba.gov/about-sba/what-we-do/mission (last visited Jan. 25, 2019); MERCATUS CENTER, https://www.mercatus.org/about (last visited Jan. 25, 2019).

106.   Crain (2014), *supra* note 14, at 1 ("The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business: A Report for the National Association of Manufacturers" (Sept. 10, 2014)); Crain (2010), *supra* note 96 (". . . Report for SBA Office of Advocacy under contract number SBAHQ-08_M-0466 (Sept. 2010)").

107.   *See* Jonathan B. Wiener & Michael D. Rogers, *Comparing Precaution in the United States and Europe*, 5 J. RISK RESEARCH 317, 318 (2002) (comparing U.S. and European Union regulatory regimes for degree of "precaution" evident in regulatory regimes and finding rough equivalency overall, with specific differences in individual categories).

reflection of the effectiveness of their own past propaganda operating through the availability heuristic.

Finally, it bears mention that two of the three variables selected by the Crains—*1.11 Efficiency of legal framework in challenging regulations* and *8.07 Regulation of Securities Exchanges*—do not necessarily correlate with regulatory stringency.[108] Lawsuits may be, and regularly are, brought to challenge regulations for being too weak as well as too strong. Regulation of securities exchanges might well find favor with business respondents for effectively protecting against fraud by their competitors. High scores on such indices might correlate with costlier regulation, not less. Such questions raise further doubts as to what it is that ERI actually tracks, and whether it reliably correlates with actual regulatory burden.[109]

The preceding discussion has shown that the Crains' regression model exhibits multiple methodological flaws that preclude confidence in its results. In fairness to the Crains, we have seen that even more sophisticated regression models—models well-grounded in the literature and examining impacts on GDP *growth* (not GDP)—often fail to demonstrate a robust association with per capita GDP growth.[110]

This highlights a general paradox: highly "significant" statistical correlations are much more readily achievable than most statistical laymen are likely to appreciate. This is counterintuitive because impressive results are hard to obtain in most walks of life. Mistakes tend to lead to clear failure. When an airplane is badly designed it never takes off, or it falls out of the sky. Yet a badly done statistical regression may "fly" farther and faster than a better-built study— delivering results that appear more dramatic and achieve more fame than could be achieved by more rigorous methods. This anomaly creates strong temptations to cut corners. It also underscores the importance of ensuring expert, impartial, and external review and validation of any statistical study that is used to shape public policy, particularly in a realm such as regulation, where ideologues and interest groups have a strong interest in generating and promoting studies that will support their position on a controversial issue.

2. The Crews Estimate of Economic Regulatory Costs ($398.75 billion)

Unlike the Crains, Crews follows OMB practice in defining economic regulations as rules governing entry, pricing, and access in the energy,

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108. Crain (2014), *supra* note 14, at 68.

109. This foregoing discussion is not intended as a criticism of the WEF study when used for its intended purpose. The WEF study clearly is meant to offer an index of how business respondents in different countries perceive their government's and their country's performance in a wide variety of categories. In the absence of hard data, that is a highly useful tool. But the WEF poll was never meant to be used as the Crains use it, as a measure of objective reality leveraged to such an extent that every change of one-tenth of a point in the rating (in the case of the U.S.) corresponds to more than $100 billion change in implied regulatory costs.

110. *See supra* discussion accompanying notes 91–92.

transportation (airlines, rail and trucking), and telecommunications sectors.[111] Despite this limitation, and the fact that most of these sectors have been substantially deregulated, Crews tallies $398.75 billion in costs for "economic" regulations.[112] The genesis of that number is important to understand for two reasons: it is a large number, and it aptly illustrates both his overall approach to cost estimation and the drawbacks of that approach.

Crews drew his $398.75 billion figure from a 2001 report by Crain and Hopkins, commissioned by the SBA Office of Advocacy, which estimated the *efficiency* costs of economic regulations in 2000 at $101 billion and transfer costs at $202 billion. This yields a cost estimate of $303 billion per year in 2001 dollars, or $398.75 billion in 2013 dollars.[113]

Crews leaves it at that. But following the trail of footnotes one step further reveals that Crain and Hopkins offered no actual analysis to support their cost estimate. They simply lifted it, with appropriate attribution, from the following two sentences appearing in 1999 study by the OECD: "The OECD estimates that reforms in the transportation, energy and telecommunications sectors would lead to an increase in U.S. GDP of 1 percent. That 1 percent of U.S. GDP in 2000 (equal to $10.1 trillion) yields an efficiency cost of $101 billion."[114]

To this $101 billion, Crain and Hopkins then add on another $202 billion in "transfer costs" using a two-fold multiplier that they derive from a 1991 Hahn and Hird study on the theory (critiqued below) that every dollar efficiency cost is accompanied by two dollars in transfer costs and that all these costs are a drain on GDP.[115]

The question then arises: how does the 1999 OECD derive its $101 billion estimate? It turns out that the 1999 OECD study offers *no analysis* to support a $100 billion cost estimate.[116] It simply refers, in one sentence, to a still-earlier (1997) OECD report for the proposition that further regulatory reform in the transportation, energy, and telecommunications sectors might increase U.S. GDP

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111.   *See* Crews, *Costberg* (2017), *supra* note 30, at 36 (citing OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. AND REGULATORY AFFAIRS, DRAFT REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS 15–24 (2002)).

112.   Crews, *Costberg* (2017), *supra* note 30, at 36–37; Principia Bureaucratica, *supra* note 34, at row 14.

113.   W. Mark Crain & Thomas D. Hopkins, THE IMPACT OF REGULATORY COSTS ON SMALL FIRMS: A REPORT FOR THE OFFICE OF ADVOCACY, UNITED STATES SMALL BUSINESS ADMINISTRATION, RFP No. SBAHQ-00-R-0027, at 11, 25 (2001) [hereinafter, Crain and Hopkins (2001)] ("Table 8. Total Cost of Federal Regulations: By Type and Allocation Between Business and Others (in billions of 2000 dollars)").

114.   *Id.* at 11 n.12 (citing to ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *Regulatory Reform in the United States*, OECD REVIEWS OF REGULATORY REFORM (1999) [hereinafter, OECD Review of U.S. Regulatory Reform, 1999]).

115.   *Id.* at 11 (citing Robert W. Hahn & John A. Hird, *The Costs and Benefits of Regulation: Review and Synthesis,* 8 YALE J. ON REGULATION 233 (1991) [hereinafter, Hahn & Hird (1991)]).

116.   The 1999 OECD Report does note that *past* de-regulatory efforts had been estimated by a prior analyst to have increased U.S. GDP by 1 percent. OECD Review of U.S. Regulatory Reform, 1999, *supra* note 114, at 34 (citing Clifford Winston, *US Industry Adjustment to Economic Deregulation*, 12 J. ECON. PERSPECTIVES 89, 99 (1998)).

by an additional 1 percent.[117] However, the 1997 OECD study contains no mention of any such figure in the main ("synthesis") report.[118] There is a background study for the report, a study urging deregulation of the telecommunications sector, and that background chapter cites a 1995 Report by the Council on Economic Advisers (CEA) in support of the Clinton Administration's then-proposed legislation to open telecommunications markets to more competition. The CEA study predicted in 1995 that enacting that re-regulatory legislation "could add $100 billion to GDP over the next decade."[119] That figure corresponds to roughly 1 percent of U.S. GDP at that time,[120] and it may be the figure to which the 1999 OECD report was referring.

If so, it would appear that OECD staff did not bother, in either 1997 or 1999, to determine whether the legislation that motivated the CEA report in 1995 had passed or failed since the publication of that report. It turns out that Congress enacted the Telecommunications Act of 1996 and it was signed into law, bringing about a sweeping deregulation of the telecommunications industry that presumably reaped whatever GDP gains the CEA believed could be fairly attributed to its passage.[121] With that event, the factual predicate for the Crain and Hopkins (and later) Crews $101 billion regulatory cost estimate simply disappeared.[122]

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117.   OECD Review of U.S. Regulatory Reform, 1999, *supra* note 114, at 36 ("The OECD Report on Regulatory Reform (1997) estimated that the impact of additional sectoral regulatory reforms in transportation, energy and telecommunications would raise labour, capital and total factor productivity in the economy as a whole by one-half percentage point each. This was estimated to increase GDP by an additional one percent.").

118.   *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *The OECD Report on Regulatory Reform: Synthesis* Report 15 (1997) [hereinafter, "OECD Report on Regulatory Reform, 1997"] (suggesting that regulatory reform in these fields *might* increase GDP in more regulated countries without explicitly positing how much the U.S. GDP might increase with regulatory reform).

119.   ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *The OECD Report on Regulatory Reform: Vol. I, Sectoral Studies* (1997) at 48, citing CEA, Economic Benefits of the Administration's Legislative Proposals for Telecommunications (June 1994).

120.   *See* Federal Reserve Bank of St Louis, Economic Research: U.S. Gross Domestic Product in Billions of Chained 2012 Dollars (reporting US GDP of roughly $10.5 trillion in 1995), available online at https://fred.stlouisfed.org/series/GDPC1 [https://perma.cc/C2GB-FSLD].

121.   Telecommunications Act of 1996, S. 516, 105th Cong. (1996) (enacted).

122.   While passage of the Telecommunications Act of 1996 did not completely deregulate the industry, the remaining costs of telecommunications regulation post-dated the turn of the century and were not "legacy" economic regulatory costs. They are counted separately in a separate category of $131.6 billion per year of costs that Crews attributes to the "Federal Communications Commission." *See* Principia Bureaucratica, *supra* note 34, at row 101; Crews, *Costberg* (2017), *supra* note 30, at 122–23. Costberg derives his $131.6 billion figure from Jerry Ellig, *Costs and Consequences of Federal Telecommunications Regulations*," 58 FEDERAL COMMUNICATIONS LAW JOURNAL 37 (2006) at tbl.2, 98–99, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=982574## [https://perma.cc/EHK2-Z6PL], by taking Ellig's estimate of $116.58 billion per year and adding a $15 billion per year placeholder for the supposed cost of net neutrality regulation. Ellig is affiliated with the Mercatus Center. His 2006 study is a comprehensive snapshot of telecommunications regulatory costs as of that year. He estimates $116.58 billion in telecommunications regulatory costs as of 2004, of which $100.8 billion (86 percent) is accounted by transfer payments and foregone consumer surplus, neither of which qualify as costs to GDP. *Id.* at 99 tbl.2. *See* discussion *infra* at note 123 and accompanying text. This means that Ellig's estimated cost to GDP is really, at most, the foregone producer surplus of $41 billion. Even that amount

The disappearance of the predicate for an estimated $101 billion in efficiency costs likewise requires the subtraction of the $202 billion Crain and Hopkins added in associated "transfer costs" by application of a supposed 2:1 transfer cost per efficiency cost multiplier. Moreover, use of such a multiplier would have been inappropriate in any case in a measure of regulatory cost to GDP, since basic macroeconomic theory teaches that transfer payments neither add to nor subtract from GDP, growth, or jobs, but merely transfer wealth from one individual or group to another.[123] Given this fact, OMB's consistent practice accordingly has been to exclude transfer payments from their tally of regulatory costs to the economy. [124]

Crews cites Crain and Hopkins who, in turn, cite Hahn and Hird for the proposition that transfer costs of economic regulations are multiples of efficiency costs.[125] Hahn and Hird themselves, however, separate efficiency costs from transfer costs for the purpose of *excluding* the latter from the social cost calculation.[126] Far from asserting that transfer payments subtract from GDP, Hahn and Hird say precisely the opposite: "[t]ransfer payments are a redistribution of benefits from one group to another that has no impact on total economic output."[127]

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is probably an overestimate since the wealth transfer of $76 billion estimated in Ellig's table is a transfer *to producers*, who will presumably allocate that sum to GDP-enhancing investments that Ellig does not bother to account for. *Id*. In any case, even if one were to tally transfer payments as costs to GDP, telecommunications regulatory costs should not be double-counted: once under the rubric of "telecommunications" regulation and a second time under the rubric of "economic" regulation. Crews's $402 billion "[b]aseline for aggregate annual economic regulation" thus remains unsubstantiated.

123. Paul M. Johnson, *Transfer payment*, A GLOSSARY OF POLITICAL ECONOMY TERMS, http://www.auburn.edu/~johnspm/gloss/transfer_payment (last visited Feb. 10, 2017). Global Economic Intersection, *You Can Thank Transfer Payments for Boosting the U.S. GDP Recovery*, BUSINESS INSIDER (Dec. 27, 2010), http://www.businessinsider.com/we-can-thank-transfer-payments-for-gdp-recovery-2010-12?IR=T. *Economics A-Z terms beginning with T*, THE ECONOMIST, http://www.economist.com/economics-a-to-z/t#node-21529382 [https://perma.cc/LY42-XDXU] (last visited Feb. 10, 2017). The first-order effects of transfer payments are zero-sum. There may be near-term and positive second-order effects on GDP via the multiplier effect, if income is transferred from those less likely to spend it to poorer people who are more likely to spend it on goods and services.

124.   *See* OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. AND REGULATORY AFFAIRS, REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 150 n.248 (2011) (citing an OMB circular that instructs agencies to not consider transfer payments when conducting a regulatory impact analysis).

125.   *See* Crews, *Costberg* (2017), *supra* note 30, at 36–37. Crain & Hopkins (2001), *supra* note 113, at 11.

126.   Hahn & Hird (1991), *supra* note 115, at 249. Hahn & Hird also note that their analysis differed from prior, and higher, estimates of economic regulatory costs because (a) their analysis reflected significant deregulatory measures enacted since those estimates were made and (b) "*our analysis attempts to separate efficiency costs from transfers more carefully.*" *Id*. at 250 (emphasis added). As Hahn & Hird observe: "Our 'bottom line' estimate of the net costs of economic regulation is roughly $46 billion, as the total in Table 1 shows. Annual transfer payments, which we estimate to be between $172.1 billion and $209.5 billion, are much higher." Hahn & Hird (1991), *supra* note 115, at 249.

127.   *See id*. at 237 n.51 ("Transfer payments are a redistribution of benefits from one group to another that has no impact on total economic output.").

What is the more likely cost of economic regulation, based on more or less credible studies that actually undertake analysis opposed to snatching numbers uncritically from other studies? Hahn and Hird noted that their analysis included several sectors—such as agricultural price supports, trade barriers postal rate regulation, and telecommunications—that prior studies had excluded. They observed that if these added sectors are excluded, "the efficiency costs of the remaining regulations fall to between $7.2 billion and $8.5 billion (in 1988 dollars)."[128] Given that the Telecommunications Act of 1996 (which had supported prior estimates) passed after the 1991 Hahn and Hird analysis, and that agricultural price supports and trade barriers are accounted for separately in Crews analysis,[129] it would appear that the Hahn and Hird study yields, at its upper end, an estimate that is directly comparable to, but dramatically lower than, the Crews figure: $8.5 billion in 1988 dollars, or $16.81 billion in 2013 dollars.[130] That more plausible figure is roughly 4 percent of the "legacy economic regulation cost" of the $400 billion figure offered by Crews.[131]

In short, Crews's estimate of cost to GDP of legacy economic regulation turns out to be mostly a chimera. Yet the lay reader could be forgiven for giving it credence. It is explained at length with an impressive number of footnotes. It is supported by links to charts and tables. The problem—which one discovers only after following a long trail—is that the footnotes lead ultimately to a dead end.

As is his custom in *Costberg*, Crews takes pains to make his estimate seem plausible by showing that it is lower than other estimates: in this case, he points to a higher estimate by OMB and another study produced by two academics.[132] The difficulty here, as elsewhere, is that the higher estimates he chooses as reference points are themselves bogus benchmarks. The "OMB estimate" to which Crews refers was disavowed by OMB itself in 2002 in response to

128.   Hahn & Hird (1991), *supra* note 115, at 250.

129.   *See* Principia Bureaucratica, *supra* note 34, at rows 21–24 (agricultural price supports).

130.   Hahn & Hird (1991), *supra* note 115, at 250. The $8.5 billion figure mentioned there is adjusted from 1988 to 2013 dollars by multiplying $8.5 billion by 233.5/118, equaling $16.8 billion. The ratio is derived from the Historical Consumer Price Index for the month of June 2013 (numerator) and 1988 (denominator) as set forth in US Dep't of Labor, Bureau of Labor Statistics, CPI Detailed Report–April 2014, Table 24, Historical Consumer Price Index for All Urban Consumers (CPI-U), available online at https://www.bls.gov/cpi/tables/detailed-reports/home.htm.

131.   Clearly, Congress has authorized major new regulatory regimes since Hahn & Hird's estimate, including Sarbanes-Oxley in 2002 and Dodd-Frank in 2010. *See* Sarbanes-Oxley Act of 2002, Pub. L. No. 107-24; Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010). But regulations implementing these more recent acts those are not "legacy" regulations in Crew's parlance. They are not even "economic regulations" per se in Crews's parlance, and they are separately accounted for in *Costberg* and Principia Bureaucratica. *See* Principia Bureaucratica, *supra* note 34, at rows 102–18. Crews also accounts for modern telecommunications regulations separately in his table, assigning them a cost of $2.96 billion for FCC paperwork, $113.69 billion for telecommunications generally, and $15 billion as the cost of net neutrality. Principia Bureaucratica, *supra* note 34, at rows 98–100.

132.   Crews, *Costberg* (2017), *supra* note 30, at 37, 40.

widespread criticism from the expert and scholarly community.[133] The academic study with which Crews opens his discussion of "baseline" economic regulation costs—a 2013 study by Dawson and Seater—has not been published and employs a methodology so improbable that Crews himself seems to disbelieve it.[134] That study concludes that without federal regulation, "GDP at the end of 2011 would have been $53.9 trillion instead of $15.1 trillion if regulation had remained at its 1949 level."[135] The authors reach this improbable result by regressing per capita GDP growth (dependent variable) against the number of pages added to the Code of Federal Regulations (CFR) over a 49-year period (main variable of interest).[136] This statistical estimation technique obviously depends on the groundless assumption that more pages of CFR somehow correlates closely and positively with a higher burden.[137] Crews himself expresses skepticism of the study two paragraphs after introducing it: "Using numbers of pages in the Code of Federal Regulations as an independent variable in creating a proxy for regulatory costs may be problematic, but even if this study over-shoots, just a fraction of such numbers amounts to an immensity."[138] However, the rational response to a clearly outlandish, $54 trillion estimate that rests on an obviously invalid premise is not to divide it by an unstated and arbitrary number and call the result an "immensity." The proper response is to disregard the bogus number.

Having critiqued the Crains' and Crews's approaches to the estimation of the variously defined "economic regulations," we will turn next to a review of the sources and methods both studies used to generate their estimates for social regulations, tax compliance, and homeland security. For these categories of cost,

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133.   *See id.* at 36 (referring to "OMB's estimate" of "$487 billion in 2001 dollars or $641 billion if regarded in 2013 dollars" that is derived from "Table 13 in OMB's 2002 Draft Report to Congress."). *See* OFFICE OF MGMT. & BUDGET, DRAFT REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS, 67 FED. REG. 15,013, 15,038 (Mar. 28, 2002) [hereinafter OMB Draft Report to Congress (2002)]. That estimate, again, appeared in the draft report, not in the final report or in any subsequent OMB annual report. The obvious reason is that it represented an aggregate estimate drawn from old and unchecked studies of the kind that OMB had vowed to stop using. *See* detailed discussion of this development *supra* Part III.B.1.

134.   *See* John Dawson & John J. Seater, Federal Regulation and Economic Growth (Jan. 2013) (unpublished Working Paper). For Crews's incredulous reaction *see* Crews, *Costberg* (2017), *supra* note 30, at 35.

135.   *Id.* at 22.

136.   *See* John Dawson & John J. Seater, Federal Regulation and Economic Growth (Jan. 2013) (unpublished Working Paper).

137.   The error of such an assumption can be demonstrated by a simple thought experiment. Imagine the government issuing, and enforcing, a simple command: "No person or enterprise may pollute air, earth, or water." That simple and summary edict would eliminate thousands of CFR pages, but it certainly would not lighten the burden of regulation. Indeed, it most likely would gravely harm the economy. Conversely, many pages of CFR may be devoted to providing categories and subcategories, waivers, variances, and other complicating devices in order to lighten the burden by tailoring rules to individual circumstances. Those extra CFR pages add to the burden as measured by the Dawson and Seater proxy, but in reality they make the rule *less* burdensome, not more so. Given its illogical premise and unlikely result, it comes as no surprise that the paper has not been published in a scholarly journal to date.

138.   *See* Crews, *Costberg* (2017), *supra* note 30, at 35.

their estimation methods are similar so we examine the Crains' and Crews's estimates together.

B. "Social" Regulations

The category of "social" regulation encompasses health, safety, and environmental regulations enacted by executive branch agencies.[139] Within this category, the Crains tally only EPA and OSHA regulations to yield an estimate of $401 billion, while Crews sweeps much more broadly to include many other agency regulatory costs totaling $922 billion.[140] Crews's compilation of social regulatory costs spans thirteen agencies with forty-six entries.[141] To keep the discussion manageable, we will focus on the EPA and Department of Labor/OSHA regulatory cost estimates that the two studies have in common. These two agencies together account for nearly 60 percent of the social regulatory costs tallied by Crews and 100 percent of those tallied by the Crains. This sample thus should fairly reflect and illustrate the methods employed in both studies.[142]

The Crain and Crews studies both distinguish between regulatory costs tallied and reported by OMB before 2002 and those reported by OMB after that period. The discussion that follows will recognize this dichotomy, focusing first on legacy (pre-2001) Department of Labor regulations, then legacy (pre-2001) environmental costs, and finally post-2001 workplace and environmental regulatory costs, which are estimated by a method common to both.

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139.   For an explanation of the term, *see* Crews, *Costberg* (2017), *supra* note 30, at 42. The Crains do not use the term "social regulation." Their categories are "Economic," "Environmental," "Tax Compliance" and "OSHHS" (OSHA plus Homeland Security). *See* Crain (2014) *supra* note 14, at 40 tbl 6. However, the Crains' "Environmental" and "OSHA" categories are squarely encompassed within the Crews category of social regulations and we see that they rely on the same or similar sources to estimate the costs of regulations in these categories, so it is feasible to examine the Crains' and Crews's estimates concurrently for these cost categories.

140.   *See* Principia Bureaucratica, *supra* note 34, at rows 21–93.

141.   Principia Bureaucratica, *supra* note 34, at rows 21–94 (tallying costs for Executive Branch agencies that submit rules to OMB for review).

142.   One threshold issue, unique to the Crain and Crain study, merits mention at this point. We have seen that the Crains define "economic regulation" uniquely and expansively as all regulation affecting market activity. *See* discussion *supra* note 55 and accompanying text. That definition would include environmental and workplace regulation. Similarly, business executives responding to the WEF survey question about the "burden of regulation" clearly would have had environmental and workplace regulations, among others, in mind. So it is clearly double-counting for the Crains to tally the burdens of environmental and workplace regulation once under the rubric of "economic regulation" and then again under the separate rubric of OSHA and EPA regulation. However, since the $1.4 trillion cost estimate for economic regulation has been shown unreliable in the preceding Part, we strike the $1.4 trillion economic regulation estimate, and explore in this Part the question of whether the Crains' separate estimates for the cost of occupational health and safety and environmental regulations stand on firmer ground.

1. *"Legacy" (pre-2001) Department of Labor Regulations*

The Crain and Crews studies both rely on OMB annual reports for the costs of recent rules, while taking the cost of old rules from prior academic studies and/or pre-2003 OMB reports that relied on such studies.[143] The principal source of old OSHA rule cost estimates is a 2005 paper prepared by Joseph Johnson, who had been a Research Fellow at the Mercatus Center from 1999 to 2001 while preparing the study.[144] Johnson's 2005 estimate of $57 billion in 2000 dollars supplied, when adjusted for inflation, 99 percent of the $71.07 billion of total OSHA regulatory costs in the Crains' 2014 study[145] and 93 percent of the total regulatory costs attributed to the Department of Labor in Crews's 2017 study.[146]

The Johnson study begins by summing the *ex ante* estimated cost of twenty-five major OSHA rules issued from 1980 through 1993, to yield a total cost of $7.415 billion.[147] He then does something quite unusual: he multiplies that figure by a factor of 5.55.[148]

The multiplier is derived, in turn, from a working paper written in 1996 by Harvey S. James of the University of Hartford for the Center for the Study of American Business, and later published in "Policy Sciences."[149] James began his analysis by finding a database of OSHA citations for violations of various OSHA standards from October 1994 to September 1995.[150] During this period, OSHA issued many citations for violations of rules other than the twenty-five major rules for which an OSHA Regulatory Impact Assessment had been prepared.[151] In fact, of the 231 specific standards cited at least ten times and up to ninety-nine times by an OSHA inspector in this period, only forty-four specific standards came from one of the twenty-five major rules for which a Regulatory Impact Assessment had been prepared.[152] This means that for every major rule standard that supplied the predicate for ten to ninety-nine violation citations of inspected

143. Crain (2014), *supra* note 14, at 36 n.31.

144. Joseph M. Johnson, *A Review and Synthesis of the Cost of Workplace Regulations*, CROSS-BORDER HUMAN RESOURCES, LABOR AND EMPLOYMENT ISSUES: PROCEEDINGS OF THE NEW YORK UNIVERSITY 54TH ANNUAL CONFERENCE ON LABOR 233, 433 (Andrew P. Morriss & Samuel Estreicher eds., 2005) [hereinafter, Johnson (2005)].

145. Crain (2014), *supra* note 14, at 37 tbl.4.

146. *See* Principia Bureaucratica, *supra* note 34, at rows 66, 68 (recording a total of $126.754 billion in Department of Labor regulatory costs, of which $118.1 billion, in 2014 dollars, is derived from the Johnson study).

147. Johnson (2005), *supra* note 144, at 454, 466 tbl.10.

148. *Id.* at 454, tbl 5. The "low" estimate of OSHA costs in that table corresponds to a multiplier of just one, since Johnson had tallied $7.4 billion in costs from the major rules in his dataset. *Id.* The $41 billion figure (in the "Best" column is derived by multiplying $7.4 billion by 5.5. The "High" figure is derived by multiplying $7.4 billion by 7.75).

149. *Id.* (citing to James). *See* Harvey S. James Jr., *Estimating OSHA Compliance Costs*, Center for the Study of American Business, Policy Study Number 135, October 1996, published as *Estimating OSHA Compliance Costs*, 31 POLICY SCIENCES 321 (1998) [hereinafter, James (1996)].) Johnson (2005) cites to the Policy Study, apparently unaware of the published version of the study.

150. James (1996), *supra* note 149, at 329–30.

151. *Id.*

152. *Id.*

companies in this sample period, there were roughly 5.5 nonmajor rule standards cited and 7.75 nonmajor rules for which violation citations were issued one to nine times in that period.[153]

James reasoned that one might approximate total OSHA compliance costs relative to the cost of major OSHA rules by looking at the ratio of number of standards derived from nonmajor rules that are mentioned in multiple citations to the number of standards contained for violations of non-major rules during OSHA inspections relative to the number of citations involving violations of major rules.[154] In mathematical terms:

$$\frac{\text{Total Rule Compliance}}{\text{Major Rule Compliance}} = \frac{\text{Total No. of Standards with 10–99 OSHA Violations}}{\text{No. of Major Standards Cited in 10–99 OSHA}}$$

The ratio on the right-hand side of the equation derived from the OSHA database yields the multiplier of 5.5 that Johnson, Crews, and the Crains later adopted. One could then solve for "Total Rule Compliance Costs" by multiplying the OMB-tallied costs for the twenty-five major rules by the ratio that appears on the right-hand side of the equation.

James' approach is ingenious but not sound, because the ratios assumed to be equal in the above equation are, in fact, not commensurable ratios. There is no reason to assume these ratios to be equal or even roughly equal. It might be reasonable to assume, as James does, that companies will comply with a standard if and only if the cost of compliance with that standard is less than the expected cost of the noncompliance penalty exacted for violating that standard.[155] But James does not gather information on the cost of the citations, simply the number of them. Without information on the (expected) size of each violation penalty, the mere number of OSHA citations to a standard does not support any valid inference about the likely cost of complying with it.[156]

How great is the error imparted by this use of a baseless multiplier? That is hard to know. The error is probably not a full factor of 5.5, since many companies probably do spend something to comply with "minor" rules not tallied in annual OMB reports. But it is simply not accurate to pretend that we know, even approximately, how much they spend. That did not prevent Johnson from adopting a baseless five-fold multiplier to yield inflated estimates that the Crains and Crews propagated without correction into high-profile reports two decades later, reports behind a figure the President and Congress would take on faith.

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153.   *Id.* at 331.

154.   *Id.* at 330.

155.   *Id.*

156.   *Id.* at 331. Moreover, the reader may recall that the Crain and Crews studies justified the use of high-end *ex ante* estimates in part by reference to the fact that existing cost tallies include only major rules. If using high-end point source estimates is to be justified by reference to the fact that minor rules are omitted from the tally, it seems hardly appropriate to then turn around and use a five-fold multiplier to account for the cost of minor rules in the case of OSHA. *See* Crews, *Costberg* (2017)*, supra* note 30, at 43. But this is a minor objection in comparison to the fundamental methodological objection noted above.

2. *"Legacy" (pre-2001) EPA Rules*

Of the $320 billion in compliance costs that Crews assigns to EPA as "OMB" reported, 62 percent ($252 billion) are attributed to rules issued more than fifteen years ago (pre-2001).[157] Nearly half of Crews's estimate for EPA costs ($152 billion out of $320 billion in 2013 dollars) is derived from a pre-2002 OMB report citing a single study, by Hahn and Hird, published in 1991, estimating the cost of EPA rules issued prior to 1988.[158] The Crains likewise rely on the Hahn and Hird study to supply about half of their $330 billion cost estimate for EPA rules.[159]

But Hahn and Hird do not undertake a careful analysis of the costs and benefits of pre-1988 EPA regulations. They simply snatch a number from prior studies to supply a range of figures for environmental regulatory costs and benefits. The study that provides the upper bound of their range is Hazilla and Kopp (1990), which offers a figure of $77.6 billion in 1988 dollars, or $157 billion in 2014 dollars.[160]

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157.   Principia Bureaucratica, *supra* note 34, at row 80.

158.   *Id.* ("EPA historical cost per OMB"). Hahn & Hird (1991), *supra* note 115. The trail back in time from Crews through OMB to Hahn & Hird is a convoluted and intricate one that clearly illustrates the pattern of number snatching discussed above. Crews derives his 2017 estimate for ongoing costs arising from "legacy social regulations" (regulations issued prior to 2002) from an OMB report in 2001, which lifted its number from an earlier OMB report in 2000, which lifted its number from Hahn & Hird. Following is that same chain of derivation with citations supplied: Principia Bureaucratica, *supra* note 34, at row 80 cites as the source for the $252 billion estimate of "EPA historical cost per OMB" a Crews-authored spreadsheet entitled "OMB-Tallied Social Regulation Subset Costs up to $480 Billion Annually," *available online* at http://bit.ly/1wpQTrm. [https://perma.cc/WV6H-XMHB]. That table contains the $252 billion figure for EPA pre-2002 rule costs along with a note stating that the figure is taken from "OMB 2002, Table 2's figure of $170 billion" adjusted for inflation to 2013 dollars. However, Table 2 of OMB 2002 is irrelevant. Crews must mean Table 2 of OMB, *2001* OMB Annual Report. *See* OFFICE OF MGMT. & BUDGET, MAKING SENSE OF REGULATION: REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES TO CONGRESS (2001), at 11 tbl.2 [hereinafter OMB (2001)]. Table 2 of the OMB 2001 Report to Congress, in turn, cites the 2000 Report Tables 1–4 as its source. *See* OFFICE OF MGMT. & BUDGET, REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS 22 (2000). The 2000 OMB Report, in turn, cites to "Hahn & Hird (1991)" as one of its sources, and offers a range of costs for "social" regulations issued prior to 1988. The upper end of that range ($140 billion in 1996 dollars) corresponds exactly to the upper end of the range estimated by Hahn & Hird for all social regulations (labor, environment, transportation) together. *See* OMB Report to Congress (2000), at 19–20 (citing Hahn & Hird (1991), *supra* note 115, at 253, 256). From this we can surmise that the Hahn & Hird study must have been the source for the upper end of the range of cost estimates appearing in the 2000 OMB Report, and the 2001 OMB Report that was cited (or meant to be cited) in Crews's study. Crain (2014) confirms that the 2001 OMB Report to Congress relies on Hahn & Hird (1991). *See* Crain (2014), *supra* note 14, at 34–35.

159.   Crain (2014), *supra* note 14, at 35 (indicating that their estimate of the costs of rules issued through 2000 are derived from OMB's 2001 annual report to Congress on the costs and benefits of federal regulation, a report which, as the authors explain, "takes the Hahn & Hird (1991) [estimate] as its beginning estimate of the costs prior to 1988").

160.   Hahn & Hird (1991), *supra* note 115, at 256 tbl.2, 272 (noting that "Hazilla and Kopp . . . find significantly higher costs of $77.6 billion"). The calculation for inflation adjustment is 77.6 x 237/117 = $ 157 billion. *See* Michael Hazilla & Raymond J. Kopp, *Social Cost of Environmental Quality*

The only careful and systematic evaluation of Hazilla and Kopp's methodology published to date, by Heinzerling and Ackerman, does not inspire confidence in the Hazilla and Kopp study.[161] Once again, Hazilla and Kopp do not add up the compliance costs of individual rules.[162] Nor do they employ statistical regression techniques like the Crains would later employ for "economic regulations."[163] Instead, Hazilla and Kopp derive their cost estimate from yet a third analytical technique, involving "general equilibrium" macroeconomic modeling.[164] General equilibrium analysis entails an effort to simulate the operation of an entire economy with a simplified and stylized mathematical model of that economy.[165] The benefit of general equilibrium models is that they enable researchers to explore in a rigorous, mathematical fashion the likely economic consequences of changes to key parameters—whether in the form of exogenous shocks or policy interventions. To be useful, however, the model must faithfully reflect the basic cause-and-effect relationships that, in fact, determine the path of the economy in response to a shock.

In their 2012 critique, Heinzerling and Ackerman demonstrated that the model employed by Hazilla and Kopp failed this basic test. According to these critics, the principal (imagined) mechanism of action built into the Hazilla and Kopp model is federal regulations increasing prices of goods.[166] This regulation-induced inflation in the price of goods decreases real wages, which (somehow) induces workers to choose marginally more leisure over work, thus reducing GDP.[167] This strange model simply *assumes* that workers are able to choose precisely how many hours they will work at any given wage and price level. And it *assumes* that workers respond to marginally higher prices by working less, not more. These are unsubstantiated and counterintuitive assumptions.[168] The Hazilla and Kopp model also assumes that regulations never increase productivity by, for example, saving lives or worker health, thereby enlarging the earnings and purchases of the workforce. The model also does not allow for the possibility that regulations might stimulate cost-saving innovation in at least

Regulations: A General Equilibrium Analysis, 98 J. POL. ECON. 853, at tbl. 1 (1990) [hereinafter Hazilla & Kopp (1990)].

161.   Heinzerling & Ackerman (2012), *supra* note 17, at 144–150.

162.   *See* Hazilla & Kopp (1990), *supra* note 160, at 858 tbl.1 (organizing tabulated costs primarily by the actions and products regulated).

163.   Crain (2010), *supra* note 96, at 18.

164.   Hazilla & Kopp, *supra* note 160, at 857–60.

165.   For an overview and example of computable general equilibrium modeling in action, *see, e.g.*, Kenneth W. Clements, *A General Equilibrium Econometric Model of the Open Economy*, 21 INT'L ECON. REV. 469, 469–88 (Jun. 1980). For a critique of the methodology, *see* Frank Ackerman, *Still dead after all these years: interpreting the failure of general equilibrium theory*, 9 J. OF ECON. METHODOLOGY 119 (2002).

166.   Heinzerling & Ackerman (2012), *supra* note 17, at 146.

167.   *Id.* at 145–46; Hazilla & Kopp, *supra* note 160, at 857–58, 866–67, 870.

168.   Heinzerling & Ackerman (2012), *supra* note 17, at 855.

some cases.[169] Heinzerling and Ackerman also demonstrated that the model's improbable core assumptions of productivity losses without compensating corrections means that modeled GDP losses increase exponentially and without limit over time to clearly incredible levels.[170]

Hahn and Hird themselves were skeptical of the Hazilla and Kopp results. They noted that general equilibrium analyses (as practiced then) incorrectly assume the economy is perfectly competitive, do not take account of macroeconomic benefits of regulation, are very difficult to validate or even understand, and are extraordinarily nontransparent.[171] For all these reasons, they regarded the Hazilla and Kopp analysis as an exercise in a mode of analysis still in its "infancy."[172] They reported Hazilla and Kopp's results only as one estimate at the high end of a range of estimates obtained by other means.[173]

That did not prevent the Hazilla and Kopp figure from being used to establish the upper bound of cost ranges in OMB reports through mid-2002, at which point OMB officially decided to stop relying on such studies.[174] Nor did it prevent the Crains from relying on Hazilla and Kopp's figure as *the* cost of pre-1988 environmental regulations in their 2010 report. Even the searching critique of that figure published by Heinzerling and Ackerman in 2012 did not deter the Crains from going back to the same discredited study as the source of their estimate for the costs of federal regulations promulgated prior to 1988, built into their 2014 report. Nor has it deterred Crews from adopting Hazilla and Kopp's number *every* year in his annual updates of *Costberg* and *Ten Thousand Commandments*. Once again, we see that falsehood flies and the truth comes limping after.

3. Labor and EPA Rules Post-2001

Each year since 1995, OMB compiles and publishes a draft and then a final report to Congress on the agency-estimated costs and benefits of all economically significant and new regulations that took effect the prior year.[175] For rules issued

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169.   *Id.* at 148. For evidence of innovation-stimulating and cost-saving dimension of certain regulations, see Michael E. Porter & Claas van der Linde, 9 J. OF ECON. PERSPECTIVES 97–118 (Autumn, 1995).

170.   The assumption of inexorable decline in productivity as a result of regulation leads to a prediction of exponentially increasing regulatory costs from foregone growth, such that the cost of early-1980s regulations would climb to $4.5 trillion by 2009 (nearly a third of GDP) and continue mounting thereafter, clearly an absurd result. *Id.*

171.   Hahn & Hird (1991), *supra* note 115, at 245.

172.   *Id.*

173.   *Id.* at 256 tbl.2 (offering a range of environmental costs from $55.4 billion to $77.6 billion in 1988 dollars, or $109 billion to $152 billion in 2013 dollars, using a 2013/1988 inflation adjustment factor of 1.97). *See* DEP'T OF LAB., BUREAU OF LAB. STAT., CPI DETAILED REPORT: DATA FOR APRIL 2014, at 72 tbl.24 ("Historical Consumer Price Index for all Urban Consumers" (2014)).

174.   *See* discussion *infra* Part IV.

175.   OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. AND REGULATORY AFFAIRS, INFORMING REGULATORY DECISIONS: 2003 REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 6 (2003).

after 2001, both the Crain and Crews studies simply add up the high-end figures for the estimated cost of rules tallied each year in OMB's Annual Report to Congress on the Costs and Benefits of Federal Regulation.[176] This yields a total of $180 billion in compliance costs for such rules in Crews's compilation of costs for all Executive Branch agencies.[177] Of this amount, $68 billion in post-2001 costs are attributed to EPA and $9 billion to Department of Labor.[178]

Adding up annual estimates of the cost of new rules issued each year would appear to be straightforward: a simple process of arithmetic. Nonetheless, Heinzerling and Ackerman have documented at least five significant pitfalls with this approach.[179]

First, they note that the Crains (and by implication OMB reports) include the cost of certain rules that were never put into effect because EPA chose to reconsider them after they appeared in the OMB report. This category accounts for almost $11 billion in overstated costs.[180]

Second, the practice of simply tallying OMB-reported costs necessarily will include the cost of rules that are repealed because courts overturned them. Heinzerling and Ackerman's review identified costs of nearly $6 billion attributed to rules that were no longer in effect because they had been overturned by courts.[181]

Third, EPA's National Ambient Air Quality Standards (NAAQS) are assigned an estimated compliance cost in OMB reporting when they are promulgated, even though they do not actually impose any cost on particular polluters until implementing regulations are enacted for the purpose of bringing

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"Economically significant" regulatory actions are those expected to cost more than $100 million per year to comply with. *See* Exec. Order 12,866, 58 Fed. Reg. 190 (Oct. 4, 1993).

176.   *See* Principia Bureaucratica, *supra* note 34, at row 163 (reporting $140 billion in costs for rules for which agencies monetized both costs and benefits) and row 164 (reporting $39.72 billion in costs for rules for which agency RIA monetize only costs). These two categories together thus add to $180 billion. *See also* Crews, "OMB-Tallied Social Regulation Subset Costs up to $480 Billion Annually," chart available online at http://bit.ly/1wpQTrm (itemizing figures representing the high-end of range of OMB-reported costs for all Executive Branch agencies from the 2002 OMB Report to the 2016 OMB Draft Report, for rules for which both costs and benefits are monetized. These costs total $140 billion, corresponding to the $140 billion that appears in Row 163 of Principia Bureaucratica). *See also* Crain (2014), *supra* note 14, at 35 ("the costs of newly reviewed regulations are taken from OMB's annual reports for 2002 through 2014.").

177.   Principia Bureaucratica, *supra* note 34 at rows 162 and 163.

178.   *Id*. at rows 81 and 82 (EPA rules post-2001); rows 64 and 65 (DOL rules post-2001). The sum of figures in the EPA column for the 2002 Report through Draft 2016 report comes to $68 billion. The "Labor" column in the same table sums to $9 billion in costs. *Id.* This is for the entire Department of Labor, not just OSHA (the focus of the Crains' analysis). Note that the $68 billion for post-2001 costs cited is for "OMB-sourced" costs. It does not include the $73 billion in wholly speculative costs assigned to the Congressionally-mandated, EPA-administered ethanol program. These costs are tallied in the "Crews Mods and Supplements" column. Limitations of space do not permit an investigation of the bona fides of these cost estimates, but their listing as "Crews Mods and Supplements" is a candid acknowledgement of their, shall we say, "unofficial" character. *Id.*

179.   Heinzerling & Ackerman (2012), *supra* note 17, at 138; Shapiro (2011), *supra* note 17, at 4–6.

180.   Heinzerling & Ackerman (2012), *supra* note 17, at 152–53.

181.   *Id.* at 153.

nonattainment areas into compliance with such standards.[182] Once implementing regulations go into effect years later, the estimated cost of complying with those implementing regulations is substituted in that year's OMB accounting for the prior estimated cost of the NAAQS standard going forward.[183] OMB recognizes that this substitution is necessary in order to avoid double counting.[184] The Crews's and Crains' practice of simply adding up all OMB historic regulatory cost estimates without substitution and assuming that such costs apply to all years going forward is simply erroneous.[185] Heinzerling and Ackerman found that this error alone accounts for at least an additional $10 billion annually in double-counted phantom costs.[186]

Together, Heinzerling and Ackerman found $30 billion in phantom costs generated by these errors through 2010, at which point they stopped counting.[187]

Fourth, tabulating only OMB-reported costs of brand new rules necessarily includes in the estimate a potentially large category of transition and start-up costs that will diminish in later years as initial investments in capital and compliance management systems are amortized over time. A good illustration of the last category of phantom costs to which Heinzerling and Ackerman refer is the unleaded gas rule, which banned the sale of leaded gas beginning in 1996, and required gas stations to phase out the sale of leaded gas nationwide.[188] That transition was enormously expensive when it happened, and the high cost of making that transition was reflected in the impact assessment for that rule.[189] But

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182.   *See, e.g.,* OMB 2007 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 36 (2007).

183.   *Id.*

184.   *See* OMB 2015 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT 13 (2015) ("We note also that EPA's 2006 National Ambient Air Quality Standards (NAAQS) for particulate matter, with estimated benefits ranging from $4 billion to $40 billion per year and estimated costs of $3 billion per year (2001$), is excluded from the 10-year aggregate estimates or the year-by-year estimates. The reason for the exclusion is to prevent double-counting: EPA finalized implementing rules, such as the Cross-State Air Pollution Rule, that will achieve emission reductions and impose costs that account for a major portion of the benefit and cost estimates associated with this NAAQS rule. The benefit and cost estimates for lead NAAQS, SO2 NAAQS, and 2008 Ozone NAAQS may also be dropped in the future reports to avoid double counting to the extent that EPA publishes implementing regulations that would be designed to achieve the emissions reductions required by these NAAQS.").

185.   *See* Principia Bureaucratica, *supra* note 34, at row 80, citing CHART: "OMB-Tallied Social Regulation Subset Costs up to $480 Billion Annually," available online at http://bit.ly/1wpQTrm [https://perma.cc/MHZ9-HMKR] (itemizing figures representing the high-end of range of OMB-reported costs for all Executive Branch agencies from 2002 OMB report to the 2016 OMB Draft Report). *See also* Crain (2014), *supra* note 14, at 35 ("the costs of newly reviewed regulations are taken from OMB's annual reports for 2002 through 2014.").

186.   Heinzerling & Ackerman (2012), *supra* note 17, at 154.

187.   *Id.*

188.   *Id.* at 149 n.92.

189.   EPA, Costs and Benefits of Reducing Lead in Gasoline: Final Regulatory Impact Analysis, EPA-230-05-85-006 at E-3 (Feb. 1985) ("Our base case results suggest that the final rule will cost less than $100 million for the second half of 1985, when the 0.50 gplg limit will apply. For later years, when the 0.10 gplg limit will apply, the estimated costs range from $608 million in 1986 to $441 million in 1992.").

now that all cars are designed to burn unleaded gas and all gas is unleaded, the ongoing cost of complying with the unleaded gas rule is nearly zero, while the health benefits remain enormous.[190] The practice of simply toting up OMB reported costs would report the *ex ante* estimate of the cost of the unleaded gas rule, including the amortized transition cost, as the ongoing cost of that rule in perpetuity. This is erroneous accounting.[191]

Fifth, while OMB routinely reports a range of cost and benefits estimates, the Crain and Crews studies tally only the high end of the cost range. They justify this practice by observing that "cost estimates are absent for important environmental regulations and . . . government agencies may be conservative in estimating regulatory costs."[192] This excuse, however, itself faces three major objections:

First, it violates established protocols for reporting uncertain results. OMB reported costs are *ex ante* guesses by agencies about what the future compliance costs of a given regulation are likely to be. Citing such predictions as actual costs of regulation is much like equating day-before predictions about the score of an upcoming Super Bowl with the actual score of the game.[193] Whether the issue is reporting of cancer risk, environmental risk, or regulatory cost-benefit analysis generally, sound practice codified in both National Academy of Sciences and OMB guidelines calls for analysts to acknowledge uncertainties candidly in their analysis, and to state their estimates in the form of *ranges* that reflect the sensitivity of the analysis to plausible variations in all uncertain parameters.[194]

Second, it is not clear that agencies systematically underestimate the future costs of their regulations. Controversy has raged for years about whether *ex ante* estimates of cost are likely to understate or overstate costs.[195] What little

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190.   In the case of the phase-out of leaded gasoline, compliance costs were further reduced by the fact that leaded gasoline had to be phased out in any case, because it would destroy the catalytic converters in the new generation of cars equipped with catalytic converters. *Id.* at VI-5.

191.   *Id.* at 149. Heinzerling and Ackerman use this example to illustrate the so-called "Porter hypothesis," which holds that regulation can stimulate research and innovation that reduces cost and may, in some case, actually yield cost saving. Heinzerling & Ackerman (2012), *supra* note 17, at 149. In the view of this author, however, the unleaded gas example actually illustrates a more basic and universal aspect of regulatory cost accounting: even in the absence of cost-saving innovation, start-up costs of the transition to compliance would be expected to exceed steady-state compliance costs later on, sometimes by orders of magnitude.

192.   Crain (2014), *supra* note 14, at 36. *See also* Crews, *Costberg* (2017), *supra* note 30, at 43.

193.   For a detailed discussion of the fallacy of conflating *ex ante* predictions with actual costs and benefits, see Richard Parker, *Grading the Government*, 70 U. CHI. L. REV. 1345, 1367–70 (2003).

194.   THE NAT'L ACAD. OF SCI., REPORT IN BRIEF: SCIENCE AND DECISIONS: ADVANCING RISK ASSESSMENT 2–3 (2008), available at https://www.nap.edu/resource/12209/IRA_brief_final.pdf; *see, e.g.*, Memorandum from Shaun Donovan, Director of the Office of Mgmt. & Budget, to the Heads of Exec. Dep't & Agencies, on OMB Circular No. A-123, Management's Responsibility for Enterprise Risk Management and Internal Control at 9–10 (July 15, 2016) (available at https://www.whitehouse.gov /sites/whitehouse.gov/files/omb/memoranda/2016/m-16-17.pdf).

195.   *Compare* Crews, *Costberg* (2017), *supra* note 30, at 44, 73, 83; Crews, *Commandments* (2016), *supra* note 15, at 10; Crain (2010), *supra* note 96, at 15–16; *and* Crain (2014), *supra* note 14, at 27, 29 & n.31, *with* David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335, 387–90, 399 (2006); Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety, and Environmental*

empirical evidence exists on this point has produced decidedly ambiguous results. In 1999, Resources for the Future—an independent nonprofit research organization—conducted one of the few studies to actually compare *ex ante* regulatory cost and benefits prediction with *ex post* experience. They found examples of both over- and underestimation, with overestimates of costs outnumbering underestimates by fourteen to three, along with eleven cases of more-or-less accurate predictions.[196] In 2005, OMB reported the results of its own survey of *ex post* reviews of impacts compared to *ex ante* estimates. It, too, found that overestimates of cost outnumber underestimates, though the study found that benefits of the regulations tend to be overestimated as well.[197]

Nor is it clear, contrary to the Crains' assumption, that minor rules not tallied in OMB reports add such significant costs that they warrant reporting only the high-end estimates of the cost of major rules. This author is not aware of any study supporting that proposition empirically, and the assumed equation of another rule with an additional burden becomes implausible *a priori* once one recognizes that minor rules do not necessarily add burden, or even minor burden. Many rules simply clarify or make technical corrections or minor tweaks to the existing rules.[198] Some rules *reduce* burden.[199] No doubt there are some—

Regulation, 80 TEX. L. REV. 1997, 2005, 2020, 2026, 2037, 2042–43, 2048–49 (2002); Heinzerling & Ackerman (2012), *supra* note 17, at 130, 150; *and* Shapiro (2011), *supra* note 17, at 7.

196.   Winston Harrington et al., On the Accuracy of Regulatory Cost Estimates 2 (Resources for the Future, Discussion Paper 99-18, 1999), http://www.rff.org/CFDOCS/disc_papers/PDF_files/9918.pdf (visited May 6, 2003). *See also* William D. Nordhaus, *From Porcopolis to Carbopolis: The Evolution from Pork Bellies to Emissions Trading, in* EMISSIONS TRADING: ENVIRONMENTAL POLICY'S NEW APPROACH 61, 66 (Richard F. Kosobud, ed., John Wiley & Sons 2000) (noting that while sulfur dioxide reduction costs were overestimated, chlorofluorocarbon control costs were under-estimated, while numerous *post hoc* reviews revealed that *ex ante* estimates over-stated both costs and benefits by assuming higher compliance rates than actually materialized).

197.   OMB reported sixteen cases of cost overestimates, twelve cases of cost underestimates, and twelve cases of "accurate" estimates, defined as *ex post* estimated compliance cost within twenty-five percent of *ex ante* estimated compliance cost, and seven cases in which costs were not estimated. OMB found, however, that overestimates of benefits were even more pronounced, with overestimates appearing in forty percent of final rules compared to only four percent of rules in which benefits were underestimated. OFFICE OF MGMT. & BUDGET, VALIDATING REGULATORY ANALYSIS: 2005 REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL AND TRIBAL ENTITIES 47 tbl.3-2 (2005) [hereinafter, OMB Report (2005)]. For an excellent analysis of the estimation problem and the methodological issues confronting cost estimation and cost estimate validation efforts, see Frank Ackerman, *The Unbearable Lightness of Regulatory Costs*, 33 FORDHAM URBAN L.J. 1071 (2006).

198.   *See, e.g.*, Dept. of Ag., "Golden Nematode; Removal of Regulated Areas in Orleans, Nassau, and Suffolk Counties," New York, 80 Fed. Reg. 59,551 (Oct. 2, 2015). Other rules are procedural and record-keeping adjustments. *See, e.g.*, Sec. & Exch. Comm'n, Adoption of Updated EDGAR Filer Manual, 80 Fed. Reg. 59, 578 (Oct. 2, 2015). Others are simply trivial: *See* Nat'l Oceanic & Atmospheric Admin., Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Reef Fish Fishery of the Gulf of Mexico; 2015 Recreational Accountability Measure and Closure for Red Grouper, 80 Fed. Reg. 59665 (Oct. 2, 2015).

199.   For a good example of the latter, consider the Federal Aviation Administration's (FAA's) recent rewrite of its rule on airworthiness certification of small aircraft during the Obama Administration. 14 C.F.R §23.1 et. seq. The aviation industry is delighted. *See* CFSJets webpage, "FAA Rewrite of Part 23 Certification Rules" at http://cfsjets.com/2017/05/05/faa-rewrite-of-part-23-certification-rules/ ("It took

perhaps many—rules that add untallied burdens. But they coexist in the law alongside a host of rule amendments, guidelines, waivers, and exceptions that may be issued simply to clarify the law, make technical corrections, or ease the burden of regulation. In sum, the issue of whether the body of untallied minor rules adds more burden overall than it subtracts is an open question, the answer to which cannot be simply assumed.

Finally, the importance of tallying only costs of rules and requirements that actually exist will be magnified manyfold going forward, since the Trump Administration is now in the process of rescinding many of the allegedly costly rules or regulatory requirements that appear in previous OMB reports.[200] Whatever the argument for the adding-up approach in the past, it is certainly no longer feasible going forward.

C. *Tax Compliance and Homeland Security*

As seen in Table 1 above, the Crains pad their regulatory cost estimates with $159 billion of "tax compliance" costs and $21 billion of homeland security compliance requirements for a total of $180 billion for the two categories combined.[201] Crews adds $316 billion in costs for tax compliance and $57 billion for homeland security for a combined total of $373 billion of added costs.[202]

These numbers are termed "padding" because they arguably do not belong in the regulatory cost tally at all. To begin with, tax compliance and homeland security regulations serve purposes—raising revenue and providing security in travel—that are quite distinct from the main purposes of social regulations (controlling externalities) and classic economic regulations (limiting price and entry to prevent abuse of monopoly power). It is a categorical mistake to lump all these disparate items together in a single basket of regulatory costs as if they were one thing. Second, tax requirements are uniquely creatures of Congress, and leave relatively little room for agency discretion.[203] These costs therefore have little relevance to the calculation of a figure used in regulatory debates as an index of agency overreach. Third, it will be seen that both homeland security

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nine years to accomplish, but those of us who fly small airplanes are thrilled with the recent FAA rewrite of Part 23 certification rules. The new regulations significantly streamline the testing and documentation necessary for certifying smaller airplanes, and also for approving updates to their systems.").

200.   *See* discussion *supra* notes 3–10 and accompanying text.

201.   *See supra* Table 1.

202.   *Id.*

203.   James R. Hines Jr. & Kyle D. Logue, *Delegating Tax*, 114 MICH. L. REV. 235, 248 (2015) ("It is commonly understood that U.S. tax policy is, to a remarkable (and unusual) extent, determined by Congress not only in its broad outlines but also in its details. Congress enacts the statutes that together comprise the [Internal Revenue Code] IRC. The IRC defines the tax base and sets tax rates, which together determine each taxpayer's liability. The IRC contains lengthy and detailed definitions of most of the key terms in the federal tax laws, usually leaving only a modest amount of substance to be decided by the Treasury Department and the IRS, although there are exceptions, some noted below. Thus, although Congress often delegates authority to the Treasury Department, in the vast majority of cases the regulations and other guidance produced by Treasury serve the function of interpreting or filling in the gaps of an already very detailed IRC.").

and tax costs in the Crews's and Crains' tallies count as a reduction to GDP due to the monetized value of personal time spent preparing one's own tax returns or standing in line for security at the airport.[204] While time spent standing in airport security lines or filling out tax forms may be annoying and a nuisance, neither the Crains, nor Crews, nor the authors they cite, provide any evidence that such time reduces GDP. [205] They simply assume that result.[206] Moreover, if we are going to start counting time spent standing in airport security lines and filling out tax forms as costs to GDP, then we also need to count the cost to GDP of having no tax code (hence no government) and the cost to GDP of having no airport screening (hence no airport security). In sum, "regulatory cost" is being hailed, or derided, as a $2 trillion cost to GDP which critics lay at the doorstep of an overzealous administrative state. If that is the context, these tax compliance and homeland security numbers do not belong in the tally.

Nonetheless, they are in the tally for both the Crain and Crews studies and it is therefore necessary to look at least briefly at the sources and methods used to derive them. Those sources and methods illustrate once again the habit of unexamined "number-snatching" that we have seen in other contexts.

1. Tax Compliance Costs

Both the Crain and Crews studies estimate tax compliance costs by tabulating official Internal Revenue Service (IRS) estimates for time spent per tax form.[207] They multiply this figure by the total number of forms filed with the IRS, as reported by the IRS.[208] They then multiply that figure by an hourly rate that the Crains say they derive from Bureau of Labor Statistics (BLS) statistics and that Crews simply makes up.[209] These assumptions and calculations are summarized in Table 3 below:

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204.   *See* Crain (2014) *supra* note 14, at 40, tbl.6; Crews, *Costberg* (2017) *supra* note 30, at 49–51 (tax), 72–77 (homeland security).

205.   *See* discussion *infra* Parts III.C.1–2.

206.   *Id.*

207.   Crews, *Costberg* (2017), *supra* note 30, at 55–56; Crain (2014), *supra* note 14, at 39.

208.   Crews, *Costberg* (2017), *supra* note 30, at 57; Crain (2014), *supra* note 14, at 39.

209.   Crews, *Costberg* (2017), *supra* note 30, at 56 (assuming, without justification, a paperwork hours cost of $43 per hour); Crain (2014), *supra* note 14, at 39.

Table 3
Estimated Costs of Compliance with the Federal Tax Code,
Crain and Crews Estimates

Crain[210]	Businesses	Individuals/ Nonprofits	Total
Number of Hours Required to Comply (billion)	2.64	1.58	4.2
Compliance Cost per Hour in 2014 Dollars	$48.80	$31.51	N/A
Total Compliance Cost in billion 2014 Dollars	$109	$50	$159
Crews[211]			
Number of Hours Required to Comply (billion)	No separate estimate	No separate estimate	7.36
Compliance Cost per Hour in 2014 Dollars	No separate estimate	No separate estimate	$43
Total Compliance Cost in billion 2014 Dollars	No separate estimate	No separate estimate	$316

A moment's reflection and a modicum of research (with some back-of-the-envelope checking) would have revealed that these numbers, particularly Crews's numbers, are not credible. Simple arithmetic indicates that 7.36 billion hours (Crews's estimate) corresponds to the hours that would be logged by 3,675,000 accountants working 2000 hours per year (fifty weeks per year and forty hours per week) doing nothing but filling out IRS paperwork or preparing to do so. Yet the BLS records only 70,000 professional tax preparers in the work place, and 337,720 workers in the larger category of "Accounting, Tax Preparation, Bookkeeping and Payroll services," a category which obviously includes much more than tax-related work.[212] Even if each person in this larger category works 2000 hours per year on nothing but tax compliance—an assumption that unrealistically favors the Crews position—337,700 workers each working 2000 hours per year will generate *at most* 675 million hours of paid work.

Suppose one assumes, again giving Crews and the Crains the benefit of the doubt, that *all* of the aforementioned accounting and payroll professionals counted in BLS statistics work *only* on business and nonprofit tax returns and that none of them work on individual returns. That means we must tabulate the

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210.   Crain (2014), *supra* note 14, at 39 tbl.5.

211.   Crews, *Costberg* (2017), *supra* note 30, at 50–51.

212.   *See* BLS, *Occupational Employment and Wages, 13-2082: Tax Preparers* (May 2016), available online at https://www.bls.gov/oes/current/oes132082.htm#ind [https://perma.cc/K26K-9H7P]; and BLS Occupational Employment Statistics, Occupational Employment and Wages, 13-2011 Accountants and Auditors, available online at https://www.bls.gov/oes/current/oes132011.htm [https://perma.cc/DS9G-V8Y3].

hours spent on individual return preparation separately, recognizing that many individual tax returns are self-prepared by taxpayers themselves. The IRS 2017 Instruction for Form 1040 states that "[t]he estimated average time burden for all taxpayers filing a Form 1040, Form 1040A, or 1040EZ is [twelve] hours, with an average cost of $210 per return. The average includes all associated forms and schedules, across all preparation methods and taxpayer activities."[213] If this very public and prominent IRS estimate is roughly accurate, we should multiply the estimated average time of twelve hours by the 151.57 million individual tax return filings in 2017 to yield a total of 1.855 billion hours.

Adding 1.855 billion hours (individuals) to 0.675 billion hours (corporate and nonprofit) yields a total of 2.5 billion hours as an absolute upper bound on the number of hours that can be credibly attributed to the preparation and filing of federal taxes. This figure is a little more than half the Crains' estimate and a bit more than a third of the Crews estimate.

How did the Crains and (particularly) Crews stray so wildly from the path of credibility in their estimates of person-hours devoted to taxes? Since Crews offers more detail about his ultimate sources than the Crains, we will focus on the Crews method. Crews says he derived his 7.35 billion hour figure from the OIRA Information Collection Budget (ICB) that is posted online.[214] That estimate, however, is for all of Treasury Department forms, not just IRS forms, though the latter probably account for the bulk of the hours.[215]

More important, the ICB is known to be an unreliable source. As the GAO has noted, "[m]any analysts within Treasury and outside believe that the ICB estimates are not very accurate."[216] One major problem is that the ICB tabulates its hours estimate by number of forms filled out, but the typical itemized tax return includes multiple subsidiary forms.[217] No sustained effort is made to indicate which forms are subsumed in other forms or return estimates to avoid double counting.[218] Under these circumstances, simply adding (a) the total hours attributed to the overall return to (b) the hours associated with producing each

213.   IRS 2018 Instruction, Form 1040, at 100, https://www.irs.gov/pub/irs-pdf/i1040gi.pdf.

214.   Crews, *Costberg* (2017), *supra* note 30, at 48.

215.   OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. AND REGULATORY AFFAIRS, INFORMATION COLLECTION BUDGET OF THE UNITED STATES GOVERNMENT 8 (2016), available online at https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/icb/icb_2016.pdf.

216.   U.S. GOV'T ACCOUNTABILITY OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, TAX POLICY: SUMMARY OF ESTIMATES OF THE COSTS OF THE FEDERAL TAX SYSTEM 11 (Aug. 2005) [hereinafter GAO 2005 Report].

217.   *See* OFFICE OF INFO. AND REG. AFFAIRS (OIRA), INVENTORY OF CURRENTLY APPROVED INFORMATION COLLECTIONS, TREASURY DEP'T, Feb. 27, 2018, available online at https://www.reginfo.gov/public/do/PRAMain [https://perma.cc/K3KZ-9SGV] [hereinafter OIRA Reginfo Inventory] (tallying costs by form).

218.   For example, the OIRA Reginfo Inventory tallies the estimated hours required to fill out an individual tax return separately from all the other Schedules (such as Schedule A and C etc.) that go into the typical itemized return. *Id.*

included form, will result in counting the same hours twice and perhaps multiple times.[219]

Additionally, GAO's 2005 report to Congress on this topic offers a sobering account of the difficulties facing attempts to compile *any* estimate of the cost associated with tax-related paperwork.[220] One problem for estimation (though a blessing for taxpayers) is that tax preparation is becoming increasingly automated, which saves labor and thus counteracts some of the cost impact of rising tax complexity.[221] Indeed, IRS reports that 90 percent of returns were e-filed in 2016, which suggests that most American taxpayers are using modern technology in preparing and filing their returns.[222]

Further, taxpayers tend not to keep records of time and money spent on tax compliance. When asked to recall such time later, they tend to exaggerate.[223] Moreover, as the GAO explained, many corporate records kept and entered for tax reasons are gathered and maintained for purposes other than tax filing in the normal course of business, so attribution of compliance costs alone is difficult.[224]

Compounding the impact of these sources of error in per-form estimates is the huge number of forms filed each year. To take just one example: with an estimated 1.434 billion broker and barter exchange transaction forms filed each year, every *ten minute* discrepancy in the estimate of time required to prepare a Form 1099-B translates into a 239 million hour discrepancy in estimated compliance hours. This difference, when valued at the Crews hourly rate of $43

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219.   The Tax Foundation seems to have fallen into this trap with its recent estimate that IRS paperwork consumes 8.9 billion hours of time. Table 1 of their study shows that, drawing on the OMB database, they simply added the time spent on income tax returns to the time spent on the schedules incorporated within those returns, such as Schedule C: Profit and Loss from Business, etc. Tax Foundation, *Fiscal Fact No. 512*, at 3–4 tbl.1. This obviously double counts hours. It would appear that the OMB's ICB, with its 7.35 billion hour estimate, makes the same or similar mistake.

220.   *Id.*

221.   As a GAO official testified in 2011:

> Tax software and the use of paid tax return preparers may mitigate the need for taxpayers to understand complexities of the tax code. In 2010, IRS processed about 137 million returns . . . about 90 percent of returns are prepared by individual taxpayers or paid preparers using professional or commercial software. Software companies and paid preparers often act as surrogate tax administrators in that they keep abreast of tax law changes.

Complexity and the Tax Gap: Making Tax Compliance Easier and Collecting what is Due: Hearing Before the Committee on Finance, U.S. Senate, 112th Cong. (June 28, 2011) (statement of Michael Brostek).

222.   *See U.S. Taxpayers e-filed More Than 128 Million Tax Returns in 2016,* EFILE.COM, https://www.efile.com/efile-tax-return-direct-deposit-statistics/ [perma.cc/SN53-6JRN] (last visited Feb. 27, 2018) (listing that 92 percent of taxpayers e-filed in 2016).

223.   GAO 2005 Report, *supra* note 216, at 9 n.4 ("As part of the study that forms the basis for IRS's current estimates of compliance costs, the study's authors used two data collection methods—a mail survey and a diary study. The cost estimates yielded by the two methods varied significantly. The average burden of 14.8 hours for the mail survey respondents was 78 percent higher than the average burden of 8.3 hours reported by diary respondents."). Assuming that the diaries are accurate records, it would appear that memory tends to nearly double the time actually spent on this unpleasant task.

224.   *Id.* at 10 ("A major difficulty in measuring compliance costs is disentangling accounting and recordkeeping costs due to taxes from the costs that would have been incurred in the absence of the federal tax system.").

per hour, corresponds to a $10 billion discrepancy in the tax compliance cost estimate—just for that one rather obscure form. According to the IRS, there were 11 million business returns filed, 152 million individual returns, 254 million W-2s, and 142 million Form 1099-INTs.[225] With multipliers like these, even small errors in per-form time estimates can quickly cascade into huge discrepancies in aggregate hours and cost.

If hours estimates are uncertain, per-hour cost estimates are somewhat less so. Crews quotes BLS as authority for his estimate of $43 per hour, though BLS source indicates an hourly mean wage of $39.90 for the estimated 323,140 workers in the "Accounting, Tax Preparation, Bookkeeping and Payroll Services" category.[226] Assuming, again very conservatively, that every one of these 323,140 employees works on nothing but taxes for 2000 hours per year at a $39.90 per hour wage, the entire cost would come to $26 billion per year.

Next, since BLS statistics do not account for self-employed tax preparers, let us further assume that an equal number of self-employed individuals (377,000) are each able to bill an average of 1500 hours per year working on clients' taxes at the same mean hourly rate as their BLS-listed counterparts earn. That would add another $20 billion to the tab.

Now let us assume, again, that *all* of the above hours and costs tallied by paid professionals are solely associated with business and nonprofit taxes, and that individual taxes are prepared solely by additional people somehow not included within either the BLS-listed or non-BLS-listed workers. Under this assumption, these not-previously-accounted-for individuals perform all the labors for individual tax preparation for which the IRS estimates an average cost of $210 per return. Applying that charge to each of $157 million individual tax returns filed in 2016 would add, at most, $33 billion per year to the total cost.

Adding these three categories of cost together yields $79 billion per year, a figure which employs pessimistic assumptions to yield an upper bound on the number that can credibly be attributed to tax paperwork cost. That number is half the Crains' estimate and one-quarter of Crews's estimate.

$79 billion per year is still a very high cost, of course, remembering that this is just the (upper-bound-estimate of the) cost of tax paperwork. But it is not credible to suggest that this cost can be fairly attributed to IRS overzealousness. The tax code as enacted by Congress stands at 6,000 pages and counting.[227] Tax

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225. Data relevant to Form 1099-B in this paragraph is derived from OIRA 2016 Reginfo Inventory for Treasury Dep't, available online at https://reginfo.gov/public/do/PRAViewICR?ref_nbr=201705-1545-021.

226. *See* Crews, *Costberg* (2017), *supra* note 30, at 48–49, 51 (citing BLS statistics in his discussion of the hourly wages of agency employees that ultimately concludes in an estimate of $43 per hour). By way of comparison, *see* DEP'T OF LABOR, BUREAU OF LABOR STATISTICS, OCCUPATIONAL EMPLOYMENT AND WAGES, MAY 2017, 13-2011 ACCOUNTANTS AND AUDITORS, available at https://perma.cc/DS9G-V8Y3.

227. Internal Revenue Code, 26 U.S.C. (2012). This is based on a PDF of the Code as of January 31, 2018, downloaded on February 9, 2018, from the website of the Office of the Law Revision Counsel (http://uscode.house.gov/download/download.shtml. [https://perma.cc/5S35-UDHP]).

reformers have been calling for "tax simplification" for years, always with the understanding that this is a job mainly for Congress.[228] The recently passed Tax Cuts and Jobs Act gave President Trump and his allies the opportunity to make good on their pledge to simplify the tax code and reduce the time and paperwork burden that it imposes.[229] They did not make good on that pledge. Whatever else the Tax Cuts and Jobs Act may have done, it did not simplify the tax code, nor is there any indication that it will reduce the paperwork burden of tax filing.[230]

The failure of tax code simplification in the most recent tax reform bill raises the possibility that perhaps interest groups perceive a benefit in tax code complexity and want more of it—not in the abstract, of course, but in many individual situations—to provide them with all manner of tax credits, deductions, and exemptions. That possibility does not prove that tax complexity is either good or bad. But it does mean that the complexity and burden of tax filing cannot fairly be laid at the door of agency overzealousness and empire-building. These paperwork burdens are thanks to Congress and they certainly do not bolster Crews's argument for more—not less—Congressional micromanagement of the economy.[231]

In sum, the upper-bound credible estimate of tax compliance paperwork burdens is about half the Crains' estimate and one-quarter of Crews's estimate, and even that figure is not properly included in a tally of costs imposed by agency discretion. These costs are much more properly seen as artifacts of special interest lobbying in the corridors of Congress.

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228.   *See, e.g.*, William G. Gale, *Tax Simplification: Issues and Options*, TAX NOTES 1463 (Sept. 10, 2001).

229.   Chris Isidore, *Trump says H&R Block will be unhappy with his tax plan*, CNN MONEY (Feb. 15. 2017),   http://www.money.cnn.com/2017/02/15/pf/taxes/donald-trump-hr-block/index.html [https://perma.cc/F6AY-SGEC]) (quoting President Trump, "We're going to simplify very greatly the tax code"); Pres. Donald Trump, Remarks by President Trump at Signing of Financial Services Executive Orders (Apr. 21, 2017) (transcript available at, https://www.whitehouse.gov/briefings-statements/ remarks-president-trump-signing-financial-services-executive-orders/ [https://perma.cc/G4N6-HG9Y]) (transcribing remarks of President Trump, "The first executive action instructs Secretary Mnuchin to begin the process of tax simplification").

230.   An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018, Pub. L No. 115-97 (2017) ("Tax Cuts and Jobs Act"). *See also* Gene B. Sperling, *The Republican Tax Plan Isn't About Simplification*, THE ATLANTIC (Nov. 30, 2017), https://www.theatlantic.com/politics/archive/2017/11/republicans-are-falsely-claiming-their-tax-bill-will-simplify-the-code/547127/; Jon Aldrich, *Here is Your New Simplified Tax Law*, Blog: Focus Financial Advisors (Dec. 19, 2017), https://www.focusfinancialadvisors.com/category/blog/taxes/, [https://perma.cc/D362-NBQJ] ("Despite the promise of tax 'reform' or 'simplification', the bill actually adds hundreds of pages to our tax laws.").

231.   Crews, *Commandments* (2016), *supra* note 15, at 60 ("Agencies do not answer to voters . . . For too long, Congress has shirked its constitutional duty to make the tough calls. Instead, it delegates substantial lawmaking power to agencies and then fails to ensure that the regulations deliver benefits that exceed costs.").

2. *Homeland Security Compliance Costs*

The Crain and Crews studies tally $22 billion and $57 billion, respectively, for homeland security costs, broken down as follows:

Table 4
Comparison of Crain and Crews Cost Estimates
for Homeland Security Compliance

Category	Crews[232] (billions of 2013 dollars)	Crain[233] (billions of 2014 dollars)
OMB-Reported Cost of Department of Homeland Security (DHS) Regulations Issued Through 2014 (Crain)/2016 (Crews)	$16	$15
Value of Passenger Time Spent in Transportation Security Administration (TSA) Screening	$10	$ 7
Crews "Mods and Supplements"	$31	N/A
Total	$57	$22

The first row of this table accurately reflects the sum of estimated costs for DHS regulations issued through 2014 (Crains) and 2016 (Crews). It thus reflects DHS's OIRA-approved *ex ante* assessment of the likely costs of DHS rules issued through the indicated year, subject to the caveats and uncertainties discussed earlier in connection with OMB reports of anticipated costs and benefits of other social regulations.[234]

The second row of this table tallies $7–10 billion per year cost corresponding to lost time in airport screening lines. This time translates into a cost to GDP only if one assumes, improbably, that every minute spent waiting in line to clear security is subtracted minute for minute from the total sum of minutes spent generating income that becomes part of GDP. Such an assumption is both undemonstrated and counterintuitive. TSA estimates that passenger security screening adds ten minutes of wait time to air travel on average, and reports that less than 1 percent of passengers in 2017 encountered waits longer than thirty minutes in the course of their travel.[235] This small (if annoying) amount of time added to the security process would not be expected to reduce "productivity" for the leisure traveler, and it may not reduce the productivity of

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232. Crews, *Costberg* (2017), *supra* note 30, at 72–77; Principia Bureaucratica, *supra* note 34, at rows 48–51; "Placeholder for Annual Cost of Homeland Security Regulation," spreadsheet available online at https://bit.ly/1uHpYIc [https://perma.cc/PYG4-BRYX] [hereinafter Crews DHS Placeholder Table].

233. Crain (2014), *supra* note 14, at 37–38.

234. *See supra* discussion in Part III.B.3.

235. Crews, *Costberg* (2017), *supra* note 30, at 75 (quoting TSA estimate). *See also* U.S. GOVT' ACCOUNTABILITY OFFICE, REPORT TO CONGRESSIONAL COMMITTEES, AVIATION SECURITY: TSA USES CURRENT ASSUMPTIONS AND AIRPORT-SPECIFIC DATA FOR ITS STAFFING PROCESS AND MONITORS PASSENGER WAIT TIMES USING DAILY OPERATIONS DATA, GAO Rep. No. 18-236, at 1 (Feb. 2018).

the business traveler either, if he or she makes up that lost time either in the airport or back at the office. Monetization of such small increments of time might be appropriate in a welfare calculation, but it clearly does not belong in a calculation of cost to GDP.

The remaining categories of DHS-related regulatory cost—totaling $31 billion—are tallied only by Crews, not by the Crains. None of these categories reflects persuasive estimates but they do reveal, once again, Crews's propensity for number-snatching. As seen below, Crews draws his $31 billion in "mods and supplements" (other than those reflecting airport waiting time) largely from a 2011 study by Professors John Mueller and Mark Stewart.[236] These authors' bias against regulation is evident in their assertion that the current level of enhanced expenditures to deter a terrorist attack like that of September 11, 2001, "would be cost-effective only if that sort of attack would have occurred more than once a year without them"[237]—an attitude toward risk from terror that surely puts them well out of the mainstream of public opinion in the United States.

Yet Crews's tally of homeland security regulatory costs occasionally goes beyond the claims even of Mueller and Stewart. For example, Crews chalks up $10 billion in "private sector spending" for security not required by DHS regulation and $4 billion in terrorism risk insurance premiums, though Mueller and Steward do not assert that either of these sums are spent in response to regulatory requirements.[238]

Crews also derives $20 billion in "[d]eadweight and consumer welfare losses" from Mueller and Stewart.[239] He derives this number by subtracting $10 billion from a $30 billion figure that appears in Table 1 of Mueller and Stewart, though the latter offer no explanation or source citation for that figure either in the table or elsewhere in the article.[240] The trail thus ends with Mueller and

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236.   *See* Crews DHS Placeholder Table, *supra* note 232 (citing a $41 billion increment over and above OMB figures, of which $10 billion is accounted for by passenger delays (screening etc.) discussed separately above, leaving alleged DHS costs of $31 billion per year still to be explained). The Placeholder Table reveals that $29 billion of that $31 billion comes from John Mueller & Mark G. Stewart, *Terror, Security and Money: Balancing the Risks, Benefits and Costs of Homeland Security*, Paper prepared for presentation at the panel, "Terror and the Economy: Which Institutions Help Mitigate the Damage?", Paper presented at the Annual Convention of the Midwest Political Science Association, Chicago, IL (Apr. 1, 2011) at 17. https://politicalscience.osu.edu/faculty/jmueller/MID11TSM.PDF [https://perma.cc/L2GR -CBAW] [hereinafter Mueller & Stewart], and was cited in Crews, *Costberg* (2017), *supra* note 30, at 76, and Crews DHS Placeholder Table, *supra* note 232. The remaining $2 billion are derived by averaging the Mueller and Stewart estimate with the estimate by Ellig of traffic fatalities to be expected from people driving rather than flying due to delays and higher prices arising from DHS security.

237.   Mueller & Stewart, *supra* note 236, at 17.

238.   Crews, *Costberg* (2017), *supra* note 30, at 76; Crews DHS Placeholder Table, *supra* note 232 (noting that Crews has excluded $5 billion of Mueller and Stewart's $10 billion estimate for private sector security costs to reflect expenditures that are required by DHS rules and therefore already captured in the first row of the table). This raises the question of why Crews includes in a "cost-of-regulation" estimate $5 billion of costs that are not thought to be required by any federal regulation.

239.   Crews DHS Placeholder Table, *supra* note 232, at row 12.

240.   The only other reference to such losses is at Mueller & Stewart, *supra* note 236, at 15, where he lists the categories of cost appearing in Table 1, including "hidden and indirect costs or 'dead weight

Stewart, leaving nothing but *ipse dixit* as evidence for $20 billion of alleged regulatory costs.

Finally, Crews charges another $2 billion in regulatory costs to the value of lives lost by people driving to their destination (and crashing along the way) rather than enduring the annoyance of waiting in line to clear TSA security. This number was derived—via intermediary studies by Mueller and Stewart and Jerry Ellig at the Mercatus Center—ultimately from a single study authored by Garick Blalock and others in 2007.[241] The original study by Blalock drew on theoretical price elasticities of demand for air travel and estimated fatality rates in auto travel to assess the association of traffic fatalities and enplanement rates over the period 1999–2003, i.e., just before and after September 11, 2001.[242] Blalock estimated that new security charges and delays resulted in 8.64 million fewer enplanements in the fourth quarter of 2002, yielding a total of 129 additional auto fatalities in that quarter, which becomes 520 additional deaths per year.[243] The Blalock study also recognized, however, that the decline in flying during this chaotic period of heightened fear and delay after the September 11, 2001 terrorist attacks was atypical and probably overstated the long-term impact.[244] More fundamentally, all such estimates implicitly assume, as Crews does explicitly, that airport security is either unnecessary or futile.[245] Altering Crews's futility assumption— to allow for the possibility that security screening may actually deter or prevent new terrorist hijackings and bombings in the air—would require a very different approach to estimating security "costs." This more realistic approach would incorporate a countervailing estimate of how many people would be expected to drive rather than fly—and how many would die in car crashes as a result—if there were one (or several) more airline bombing(s) that careful screening might have prevented. By focusing myopically on only one set of costs—the cost of

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losses' of implementing security-related regulations that amounted to at least $30 billion in lost output per year."

241.   Mueller & Stewart, *supra* note 236, at 7; Jerry Ellig et al., *A Framework for Evaluating Counterterrorism Regulations*, MERCATUS POLICY SERIES, POLICY RESOURCE NO. 3, at 35 (Mercatus Center 2006) (also citing Blalock study), available online at http://mercatus.org/sites/default/files /publication/20060908_PS_terrorism_Complete.pdf. [https://perma.cc/M7CU-Q3GT]. Both studies cite Garrick Blalock et al*., The Impact of Post-9/11 Airport Security Measures on the Demand for Air Travel*, 50 J. L. & ECON. 731, 752 (2007) [hereinafter Blalock (2007)].

242.   *See* Blalock (2007), *supra* note 241, at 737.

243.   *See* Blalock (2007), *supra* note 241, at 752. Neither Blalock nor Ellig assign monetary values to these lives lost in traffic accidents. Mueller and Stewart assign them a value of $6.5 million per life which they say reflects the "DHS-mandated value of statistical life." *See* Mueller & Stewart, supra note 236, at 4 tbl.1, 202 n.19.

244.   Blalock (2007), *supra* note 241, at 753 (". . . the short time span prevents us from measuring the persistence of the demand decline. We would expect the demand to slowly return to pre-intervention levels as the TSA and airports invest in infrastructure to minimize the inconvenience of baggage screening.").

245.   *See* Crews, Costberg (2017), *supra* note 30, at 72 ("The only useful airport security measures since 9/11 were locking and reinforcing the cockpit doors so terrorists can't break in, positive baggage matching and teaching the passengers to fight back. The rest is security theater . . . future attacks will involve targets other than airlines.").

regulation—while airbrushing out of the picture the costs of non-regulation, Crews and his sources do not offer an apples-to-apples cost comparison of alternative real-world scenarios. They simply conjure (and smuggle into their analysis) a counterfactual world in which the cost of security screening is recognized as a cost, but the cost of terrorism is not.

IV. ON THE INVALIDITY OF EXISTING AGGREGATE COST OF REGULATION ESTIMATES AND THE NEED TO STOP COMPILING THEM

Part III demonstrated that the "aggregate cost of regulation" is unknown and most likely unknowable based on currently available data and studies. Crews ironically acknowledges this fundamental fact in the subtitle to his annual magnum opus, *Tip of the Costberg: On the Invalidity of All Cost of Regulation Estimates and the Need to Compile Them Anyway*.[246] His candor is refreshing, but his argument is illogical. One does not, or should not, publish estimates one knows to be invalid. The rational response to an invalid aggregate cost estimate is to not publish it.

In fact, OMB came to this conclusion over a decade ago when it formally abandoned the effort to develop an aggregate statistic for "the" cost of federal regulation.[247] OIRA supplied two persuasive reasons for taking this important step. First, as OIRA explained in its final 2002 Report to Congress, formal OMB tabulations of anticipated costs and benefits of agency regulations did not begin until 1995.[248] Cost estimates for regulations compiled prior to that year derived largely from privately funded studies that did not meet basic federal data quality standards,[249] an observation clearly corroborated by our in-depth examination of several of those studies in this Article.[250] OIRA thus decided to limit itself to rigorous, agency-generated estimates going forward.

Second, OIRA concluded as well that "[w]e do not believe that the [*ex ante*] estimates of the costs and benefits of regulations issued over ten years ago are reliable or very useful for informing current policy decisions."[251] Thus, since 2002, OIRA has consistently limited itself to ten-year compilations of regulatory costs and benefits.

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246.   Crews, *Costberg* (2017), *supra* note 30.

247.   OMB Report to Congress (2002), *supra* note 133.

248.   *Id.* at 36–37.

249.   *Id.* at 37, 40 (noting that "[s]everal commenters expressed the opinion that the aggregate estimates in the draft report would not meet OMB's data quality guidelines for reproducibility and transparency" and quoting with approval a peer reviewer's observation that "the technical analysis and quantitative aggregations in the draft [OMB] report [which quoted such studies] are generally of poor quality and in my view do not meet the standards for publication in the peer reviewed journals with which I am familiar").

250.   *See supra* Parts III.B.1 and III.B.2.

251.   OMB Report to Congress (2002), *supra* note 133, at 37 (disavowing the aggregate cost estimate OMB had presented in its Draft Report to Congress on the Benefits and Costs of Federal Regulation earlier that year).

OIRA's ten-year look-back policy may limit the upper range of possible error, but it does not entirely resolve the empirical, data-quality problem. First, OIRA's ten-year rule ignores older rules which may or may not be cost effective and rational, but which cannot simply be ignored if they are still in effect, imposing costs and yielding benefits. Second, as we have seen, OIRA's ten-year look-back limitation does not change the fact that the estimates compiled in OMB's annual reports remain, *intrinsically,* guesses about the likely future cost of complying with rules that may be (a) overturned by courts, (b) modified by agencies, (c) subject to waivers, variances and (d) enforced to different degrees and in different ways by federal agencies and/or state regulators wielding delegated authority. In addition, as we have seen, complying with such rules may yield unexpected costs and challenges for regulated entities, or they may stimulate previously-unanticipated innovations and efficiencies that cause actual costs to be less than expected.[252] Reporting an *ex ante* prediction as "the" cost of a regulation is thus like reporting pregame bets about the likely score of a Super Bowl game as the actual score of the game.[253] Adding estimates of the cost of regulations enacted in a given year and then repeating the process for successive years merely compounds the errors. OIRA's policy of halting the accumulation of error after ten years may cap the upper boundary of discrepancy between hypothesis and fact, but it does little to assure us that this assemblage of aging guesses offers a sufficiently reliable measure of actual costs or benefits as to provide a sound basis for policy decisions.

To this *ex ante* problem, there is no clear solution other than systematic retrospective evaluation of the actual costs *and* benefits of selected rules on the books. Simply as a matter of logic, an aggregate regulatory cost estimate standing alone (even if it were reliable) could not establish that any given aggregate cost is too high without reference to the benefits of those regulations.[254] Moreover, even if one were somehow able to prove that a given aggregate cost is both reliably established and "too high," that conclusion by itself would offer no clue as to which particular regulations should be cut or modified. Responding meaningfully to a problem of excessive cost likewise would require retrospective review of individual regulations, with a focus on costs *and* benefits.[255]

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252. *See* discussion *supra* Part III.B and sources cited therein.

253. For a detailed discussion of the fallacy of conflating *ex ante* predictions with actual costs and benefits, see Richard Parker, *Grading the Government*, 70 U. Chi. L. Rev. 1345, 1367–70 (2003).

254. Heinzerling & Ackerman (2012), *supra* note 17, at 146–47; Shapiro (2011), *supra* note 17, at 1–2.

255. A full treatment of the role of retrospective benefit-cost review as an alternative to regulatory budgets is beyond our present scope. Suffice it to say here that retrospective review of regulatory costs and benefits for individual regulations has a long history and strong bipartisan support. *See* Exec. Order No. 13,610 (May 10, 2012), Exec. Order No. 13,563 (Jan. 18, 2011) (calling for retrospective review during the Obama Administration); Exec. Order No. 12044 (1978) (calling for agencies to undertake periodic review of existing regulations in the Carter Administration); Exec. Order No. 12,291 (calling for retrospective review under the Reagan Administration); Exec. Order No. 12,866 (Sept. 30, 1993) (Clinton Administration). Office of Mgmt. & Budget, Validating Regulatory Analysis: 2005 Report to Congress on the Costs and Benefits of Federal Regulations and Unfunded Mandates on

It may be tempting to assume that implementing a regulatory budget (as the Trump Administration has done with Executive Order 13,771) requires knowledge of the absolute level of aggregate regulatory costs. But this is not the case. As OIRA noted in 2002, presciently anticipating the possibility of regulatory budgets at a future date:

> Some observers see a complete 'accounting statement'—one that includes all existing rules on the books—as a necessary condition for enactment of a 'regulatory budget.' The idea is that Congress might be expected to authorize each year a total regulatory budget, much like Congress now passes an appropriation for an agency's 'on-budget' expenses. Although the idea of a regulatory budget is worthy of consideration, we do not believe that a complete accounting statement is necessary to move forward with the idea. A regulatory budget need only be incremental to the current baseline. One does not need to know full costs and benefits of all regulations to decide that regulatory costs should be held to an increase (or decrease) of a specified amount over the next year. In fact, most Federal budgeting is incremental in nature.[256]

As it happens, the Trump regulatory budget is incremental in precisely this way, just as OMB predicted in 2002: it caps incremental additions to agency regulatory cost in any given fiscal year, without attempting to calculate aggregate regulatory cost of all regulations in effect.[257] There is thus no need and no role for the Crain and Crews aggregate cost estimates in implementing the Trump Administration's regulatory budget.

In short, aggregate regulatory cost estimates of the kind produced by Crews and the Crains are at once unreliable, unnecessary, and irrelevant to regulatory policy. They circulate freely in the media and on Capitol Hill, where they are a frequent incitement to denunciations of regulations and regulators. But they play no constructive role in regulatory policy and they shed no useful light on the actual costs and benefits of federal regulations, individually or in aggregate, past or present.

STATE, LOCAL AND TRIBAL ENTITIES. OFFICE OF MANAGEMENT AND BUDGET (George W. Bush Administration). *See also* Administrative Conference of the United States, Retrospective Review of Agency Rules, adopted Dec. 4, 2014. For excellent survey of retrospective review policy over the years and lessons learned from it, *see* Joseph E. Aldy, Learning from Experience: An Assessment of the Retrospective Reviews of Agency Rules and the Evidence for Improving the Design and Implementation of Regulatory Policy (Nov. 17, 2014) (NBER Working Paper). *See also* Cary Coglianese, *Moving Forward with Regulatory Lookback*, 30 YALE. J. ON REGULATION 57 (2013); U.S. GOV'T ACCOUNTABILITY OFFICE, REEXAMINING REGULATIONS: OPPORTUNITIES EXIST TO IMPROVE EFFECTIVENESS AND TRANSPARENCY OF RETROSPECTIVE REVIEWS (GAO-07-791, July 2007). Progressive scholars also have noted, however, evidence of a bipartisan bias towards deregulation in the approach of successive administrations to retrospective review. *See, e.g.*, Michael A. Livermore, *Unbalanced Retrospective Review*, Penn Program on Regulation at U. Pa. L.: The Regulatory Review (July 12, 2012), https://www.theregreview.org/2012/07/12/12-livermore-schwartz-review/ (noting the deregulatory bias of the Obama-era executive orders cited above in this note).

256. OMB Report to Congress (2002), *supra* note 133, at 41.

257. Exec. Order No. 13,771, *supra* note 5.

The question, then, is why these analytically invalid and policy-irrelevant estimates continue to be circulated and quoted. Answering that question requires a broader effort to connect the dots and see the larger political picture of which these antiregulatory studies form an integral part.

V. EXPLAINING THE IMPACT OF BOGUS STUDIES: A LIBERTARIAN ARCHIPELAGO

The attentive reader of the preceding pages may have noticed a pattern. Consistently high estimates of regulatory cost (around $2 trillion per year in 2014 dollars) issue from two sets of authors (Crain and Crain, and Crews) year after year.[258] The two sets of studies reach their similar estimates with very different methodologies, different scope of coverage, and very different subtotals for individual categories of cost.[259] The papers are self-published by their sponsoring organizations, all of which have a notably pro-business and anti-regulatory orientation.[260]

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258. CEI published the 2018 update of Ten Thousand Commandments, with its $1.9 trillion cost estimate, as the "25th Anniversary" edition. *See* Clyde Wayne Crews, Jr. TEN THOUSAND COMMANDMENTS, 25TH ANNIVERSARY, AN ANNUAL SNAPSHOT OF THE REGULATORY STATE at 3, available online at https://cei.org/sites/default/files/Ten_Thousand_Commandments_2018.pdf. W. Mark Crain has published at least four similar studies of the aggregate cost of regulation over a seventeen year period. *See* W. Mark Crain & Thomas D. Hopkins, *The impact of regulatory costs on small firms*, U.S. Small Business Administration, Office of Advocacy (2001) (unpublished paper); W. Mark Crain, *The impact of regulatory costs on small firms*, U.S. Small Business Administration, Office of Advocacy (2005); Nicole V. Crain & W. Mark Crain, *The impact of regulatory costs on small firms*, U.S. Small Business Administration, Office of Advocacy (2010); *The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business: A Report for the National Association of Manufacturers* (2014). As seen *supra* at note 18 and accompanying text, the SBA Office of Advocacy in 2017 retained the Crains to undertake a fifth study of the aggregate cost of regulation, though that contract was later discontinued under congressional pressure. See *supra* note 18.

259. See *supra* Table 1 and accompanying text, showing that the component estimates that Crews and the Crains add together to form their total estimates for the cost of economic, social, homeland security, and tax regulatory cost categories are quite different in the two studies. The Crains omit all social regulations other than environmental and OSHA rules and their estimate presumably would have been higher had they included all categories of regulation as Crews did. *See supra* note 139 and accompanying text. As we have seen, Crews notes that his numbers are subject to change "at the author's discretion," *see supra* note 34 and accompanying text, and *Costberg* is itself riddled with judgment calls about how much of which category of costs from some prior estimate to include in the aggregate cost calculation—with billions of dollars of regulatory cost often riding on each call. For instance, in *Costberg*, Crews arbitrarily lifts the price for economic regulations as a portion of estimated efficiency costs; erroneously relies on cost calculations derived solely from the page count of the Code of Federal Regulations; and disregards BLS statistics to offer a grossly implausible estimate of tax compliance costs. Crews, *Costberg* (2017), *supra* note 30, at 35–37, 51; *see also supra* Part III.C.1 (comparing Crews's estimate of tax compliance costs with the actual payroll and employee counts provided by BLS). Given this latitude in determining the size of the building blocks (the subtotals) it would seem quite easy for Crews to make the total come to practically whatever number he pleases, within a very broad range.

260. Crews is employed by the Competitive Enterprise Institute, an institute that proclaims its allegiance to the "principles of limited government, free enterprise, and individual liberty." *See About*, COMPETITIVE ENTERPRISE INSTITUTE, https://cei.org/about-cei. [https://perma.cc/KY6N-C79G]. *See also* the profile at CEI, *supra* note 31. The orientation of the National Association of Manufacturers is obvious from its name. Numerous scholars and advocates have noted the consistently antiregulatory orientation of

2018] REGULATORY ROLLBACK MOVEMENT The Crain and Crews studies employ divergent definitions and methods for estimating the cost of "economic" regulations, and examine rather different ranges of social regulations: Crews adopts a comprehensive approach while the Crains limit their coverage to environmental and occupational safety and health regulations. But for the categories of regulations they both examine (environmental, occupational, tax, and homeland security regulations), the two sets of studies draw on similar authors, either directly or indirectly.[261] These source authors typically resided (professionally) in either small universities or policy centers with a distinct pro-business and/or libertarian orientation, principally the Mercatus Center at George Mason University.[262] Few, if any, of

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SBA Office of Advocacy. *See* Gary D. Bass et al., *The Need to Strengthen Regulatory Enforcement*, 20 GEO. PUBL. POLICY REV 33 (2015); Heinzerling (2012), *supra* note 17, at 158; Sidney Shapiro & James Goodwin, *Distorting The Interests Of Small Business: How The Small Business Administration Office Of Advocacy's Politicization Of Small Business Concerns Undermines Public Health And Safety* (Center For Progressive Reform White Paper #1302, Jan. 2013).

261.   "Indirect" references are defined here as references to OMB reports that derive their regulatory cost estimates from un-vetted, non-governmental authors. As seen in Parts III.B.1 and 2, OMB abandoned the practice of relying on such authors for regulatory cost estimates beginning in 2002, because such studies were deemed too unreliable to meet basic data quality standards. Yet Crews continues to refer to numbers drawn from the studies as "OMB numbers" even though OMB has not cited such numbers or included them in any official tally in over fifteen years.

262.   Crews brackets his $2 trillion aggregate cost estimate with a $4 trillion figure published by the Mercatus Center. *See* Bentley Coffey et al., The Cumulative Cost of Regulations (Apr. 2016) (Mercatus Center Working Paper), http://mercatus.org/sites/default/files/Coffey-Cumulative-Cost-Regs-v3.pdf. The Crews and Crain studies both draw their workplace regulation cost estimates from Joseph M. Johnson. *See Joseph M. Johnson*, "A Review and Synthesis of the Cost of Workplace Regulations," Mercatus Center, Geo. Mason Univ. (Aug. 30, 2001), http://mercatus.org/sites/default /files/publication/MC_RSP_RA- SynthesisofWorkplaceCost_010830.pdf. A review of *Costberg*'s footnotes reveals that Crews draws frequently on conservative-leaning centers for cost numbers for other sub-categories of regulation. *See e.g.*, JASON J. FICHTNER & JACOB M. FELDMAN, THE HIDDEN COSTS OF TAX COMPLIANCE (2013), http://mercatus.org/sites/default/files/Fichtner Tax Compliance_v3.pdf (published by the Mercatus Center); Jerry Ellig, *Costs and Consequences of Federal Telecommunications Regulations*, 58 FED. COMM. L.J. 37 (2007), http://papers.ssrn.com/sol3/papers.cfm? abstract_id=982574## (Jerry Ellig is a Senior Research Fellow at the Mercatus Center); RICHARD WILLIAMS, THE IMPACT OF REGULATION ON INVESTMENT AND THE U.S. ECONOMY (2011), http://www.mercatus.org/sites/default/files/publication/House%20Oversight%20Response%20o n%20Regulations%20and%20Economy[2].pdf (published by the Mercatus Center); CHRIS EDWARDS, AGRICULTURAL REGULATIONS AND TRADE BARRIERS (2009), http://www.downsizing government.org/agriculture/regulations-and-trade-barriers (published on DownsizingGovernment.org, a project of the Cato Institute); LOWELL GALLAWAY & JONATHAN ROBE, THE UNINTENDED CONSEQUENCES OF COLLECTIVE BARGAINING (2014), http://www.cei.org/sites/default/files/Lowell%20Gallaway %20and%20Jonathan%20Robe%20-%20Unintended%20Consequences%20of%20Collective %20Bargaining.pdf (published by the Competitive Enterprise Institute); James L. Gattuso & Diane Katz, *Red Tape Rising 2016: Obama Regs Top $100 Billion Annually,* 3127 THE HERITAGE FOUND. BACKGROUNDER 1 (2016), http://www.heritage.org/research/reports/2016/05/red-tape-rising-2016- obama-regs-top-100-billion-annually; Diane Katz, *Here Comes the Durbin Tax*, THE DAILY NEWS, (Sept. 30, 2011), http://www.blog.heritage.org/2011/09/30/here-comes-the-durbin-tax/ (Diane Katz is a research fellow in regulatory policy at The Heritage Foundation); INST. FOR 21ST CENTURY ENERGY AND U.S. CHAMBER OF COM., ASSESSING THE IMPACT OF POTENTIAL NEW CARBON REGULATIONS IN THE UNITED STATES (2014), http://www.energyxxi.org/sites/default/files/file-tool/Assessing_the_Impact_of_

these building-block studies withstand close methodological scrutiny, as we have seen, but they do exhibit two traits in common with each other and with the aggregate studies by Crews and the Crains that they inform: they yield implausibly high estimates of regulatory cost,[263] and they ignore or downplay the benefits of regulation.

The last trait is particularly noteworthy. We have seen that the Crains simply dismiss the benefits of regulation as outside the scope of their study,[264] while Crews mentions benefits only to declare them overstated and overrated.[265] Yet the benefits of regulation include ensuring the safety of the air we breathe, the water we drink, and the food we eat; the safety of the medicines we take for illness and the toys with which our children play; the safety of the places where we work; the cars in which we ride, and the planes and trains in which we travel far afield. Regulations protect Americans from terror in the air, on the ground, and in cyberspace. Regulations seek to provide fair and orderly access to all manner of government benefits ranging from crop insurance to Medicare, Medicaid, and Social Security. Regulations are charged with protecting the security of our banks and our savings and investments, and guarding against fraudulent and oppressive practices in the financial marketplace. In fact, as Professor Steven Vogel has pointed out, financial markets could not function without regulation.[266]

Regulations are necessary, as any student of microeconomics or administrative law understands, because experience has shown that market failures (monopolies, externalities, and asymmetries of information) will impose large costs on society—through injury, illness, pollution, resource depletion, fraud, price gouging, labor exploitation, etc.— if the behavior of profit-seeking individuals and firms is left totally uncontrolled.[267] The "benefits" of rules are thus not luxuries of bureaucrats, but necessities of civilized life. Even the Trump Administration's OIRA does not dispute that the benefits of the rules it has compiled outweigh their costs by a large margin, in aggregate.[268] Yet the benefits of regulations simply disappear from view in the studies by Crews and the Crains

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Potential_New_Carbon_Regulations_in_the_United_States.pdf˙ . *See also* Joseph M. Johnson, The Cost of Regulations Implementing the Clean Water Act (Mar. 2004) (Mercatus Center Working Paper), http://mercatus.org/sites/default/files/publication/cost-regulations-implementing-clean-water-act.pdf.

263.   *See* discussion *supra* Parts III.A.2 and III.B.

264.   Crain (2014) *supra* note 14, at 6 (". . . we stress that the study is unconcerned about a benefit-cost calculus for any specific regulation or regulations as a whole.").

265.   Crews, *Costberg* (2017) s*upra* note 30, at 15–18.

266.   Steven K Vogel, MARKETCRAFT: HOW GOVERNMENTS MAKE MARKETS WORK 1 (Oxford University Press 2018).

267.   N. Gregory Mankiw, PRINCIPLES OF MICROECONOMICS (7th ed.) (Cengage Learning 2015) at 195–212 (discussing externalities as market failures), 299–327 (monopolies), 462–64 (asymmetric information).

268.   OFFICE OF MGMT. & BUDGET, OFFICE OF INFO. AND REGULATORY AFFAIRS, 2017 DRAFT REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT 10, tbl.1-1 (2017).

and in many of the studies they cite, in favor of a tunnel-visioned focus on often-unsupported claims of cost.

How does one explain the proliferation of frequently-cited and influential studies dedicated to generating improbably high estimates of costs for cost of regulations while disregarding or discounting their benefits? One possible explanation may be found in the research of Professor Nancy MacLean, the William H. Chafe Professor of History and Public Policy at Duke University. She recently documented the rise of a veritable archipelago of such think tanks and advocacy centers for the libertarian creed: Cato Institute, Heritage Foundation, Citizens for a Sound Economy, Americans for Prosperity, Club for Growth, Competitive Enterprise Institute, the Mercatus Center, the Tax Foundation, and the Charles Koch Foundation.[269] Many of these centers, she demonstrates, are funded by the Koch brothers and/or other like-minded donors who hold strongly libertarian views.[270]

Of these, the most prolific and important to the academic credibility of the message is the Mercatus Center at George Mason University.[271] As we have seen, the Mercatus Center issued several of the most important studies cited in the Crain and Crews studies and discussed in this Article: the Johnson study inflating OSHA costs, and the Mueller & Stewart and Ellig studies of telecommunications regulatory costs and homeland security costs.[272] Indeed, the Mercatus Center has issued its own estimate of "the" cost of federal regulation—$4 trillion per year—a figure they derive from the same mathematically-tautological approach to economy-wide modeling that Hahn discounted and that Heinzerling and Ackerman debunked in connection with Hazilla and Kopp's estimate of aggregate environmental regulatory costs in 1990.[273]

While a full airing of the pros and cons of the libertarian worldview is far beyond our scope, the defining feature of the libertarian philosophy in its extreme form is, in Professor MacLean's description, that "the only legitimate role of

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269.   NANCY MACLEAN, DEMOCRACY IN CHAINS: THE DEEP HISTORY OF THE RADICAL RIGHT'S STEALTH PLAN FOR AMERICA xix (Viking 2017) [hereinafter MacLean (2017)].

270.   *Id.*

271.   *Id.* at 223.

272.   *See* Johnson (2005) *supra* note 144. *See also* discussion *supra* Part III.B.2.

273.   *See* Bentley Coffey et al., The Cumulative Cost of Regulations (2016) (Mercatus Working Paper), available online at https://www.mercatus.org/publication/cumulative-cost-regulations [https://perma.cc/ZZT5-YQET]. The Mercatus Center itself is directed by Tyler Cowen, Distinguished Senior Fellow, F. A. Hayek Program for Advanced Study in Philosophy, Politics, and Economics at George Mason University. Cowen is quite public about his views of the good society: one in which "worthy individuals" climb their way out of poverty making it "easier to ignore those who are left behind." According to MacLean, his vision of the good society is a nation in which Medicaid is cut back, welfare is cut back, and masses of people migrate from high-cost regions like the northeast and west to low-cost states like Texas, which offers "very cheap housing" to offset its "subpar public services." MacLean (2017), *supra* note 269, at 213. TYLER COWEN, AVERAGE IS OVER: POWERING AMERICA BEYOND THE AGE OF THE GREAT STAGNATION 241–45, 247, 258 (NEW YORK: DUTTON 2013), *quoted in* MacLean (2017), *supra* note 269, at 212–13. It is tempting to regard these as simply personal opinions. They are that, but they are also the logical and foreseeable consequences of implementing the libertarian approach to government. Cowen is simply spelling them out.

government is to ensure the rule of law, guarantee social order, and provide for the national defense."[274] If Marx extolled equality at the near-total expense of liberty, libertarianism preaches the maximization of liberty at the near-total expense of even a semblance of redistribution or equality or government regulation.[275] What neither of these ideologies can countenance, in their extreme forms, is the possibility of a moderate or middle path of the "mixed economy" in which free markets thrive within a framework of government regulation aimed at keeping them honest, preventing abuse of monopoly power, and controlling for externalities, i.e., curing market failures, while providing a humane economic floor to limit the suffering of the very poor or severely disadvantaged.

This "mixed economy" model has been the prevailing paradigm in America since the Great Depression (though increasingly under siege since about 1980).[276] It remains the governing philosophy of a number of European countries that regularly rank higher than the United States on the WEF business executive approval ratings.[277] It has the advantage of being the only approach to government that offers even the possibility of curing market failures where they arise. But the mixed economy model of regulation suffers from one major flaw for libertarians and regulatory critics: it entails a prominent role for government, which is assumed by libertarians to act only selfishly to (a) aggrandize its own power[278] and (b) grant favors to rent-seeking actors who support those who control the government.[279]

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274.   MacLean (2017), *supra* note 269, at 213.

275.   KARL MARX, CRITIQUE OF THE GOTHA PROGRAMME 10 (C.P. Dutt ed., International Publishers 1966) (1891); *see* F.A. HAYEK, THE CONSTITUTION OF LIBERTY 85 (1960) ("Equality of the general rules of law and conduct, however, is the only kind of equality conducive to liberty and the only equality which we can secure without destroying liberty. Not only has liberty nothing to do with any other sort of equality, but it is even bound to produce inequality in many respects. This is the necessary result and part of the justification of individual liberty: if the result of individual liberty did not demonstrate that some manners of living are more successful than others, much of the case for it would vanish.").

276.   Vogel, *supra* note 266, at 44–47 (Oxford University Press 2018) (documenting the central role of government regulation in enabling markets to function).

277.   *See supra* note 107 and accompanying text.

278.   *See* WILLIAM A. NISKANEN, BUREAUCRACY AND REPRESENTATIVE GOVERNMENT 227–30 (1971)(asserting that bureaucratic behavior can best be understood not by the pursuit of the public interest, but by the desire to maximize the budget and power of the bureaucrat).

279.   JAMES BUCHANAN & GORDON TULLOCK, THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY 1–9 (1962). According to MacLean, this book was cited by the Nobel Prize Committee as foundational to the emergence of public choice theory which "revealed the fallacy of assuming that market failure could be remedied through the political process, for there, too, people 'behave selfishly.'" MacLean (2017) *supra* note 269, at 186. Buchanan was awarded the Nobel Prize for economics in 1986. But so strong were his libertarian leanings that he argued that "where the relevant set of choices are those relating to changes in the law, in the rules that constrain both private and public activity, there is no place for majority rule or, indeed, for any rule short of unanimity." Michael Chwe, *The beliefs of economist James Buchanan conflict with basic democratic norms. Here's why*, WASH. POST. (July 25, 2017), https://www.washingtonpost.com/news/monkey-cage/wp/2017/07/25/the-beliefs-of-economist-james-buchanan-conflict-with-basic-democratic-norms-heres-why/?utm_term=.6e952e2666d7. Such a rule would, of course, make legislation (hence regulation) virtually impossible.

Studies of regulation by libertarian-leaning advocates would be expected to focus on cost because the authors want to draw public and policy makers' attention to the burdens of regulations for regulated interests, and not their benefits. They would be expected to focus on aggregate costs because doing so yields the largest, most dramatic, and hence most quotable number. They would construct their aggregate with the studies of individual component costs that yield the highest numbers. And they would not worry much about the validity of either their study or the studies that form their database because who, after all, has time to check such things in any case?

There is no suggestion here of some sort of conspiracy; none is needed. Nor need we assume conscious intention to mislead. Common ideology and economic interest could generate such a skew and confirmation bias independently, without conscious collusion. When iron filings align in a certain pattern on a plane, the most likely explanation is neither random chance nor some insidious agreement among the filings: it is a magnetic field that arranges them. In this case, it appears that the libertarian ideology of major funders aligns with the commercial self-interest of more pragmatic business groups such as the National Association of Manufacturers and the Chamber of Commerce to form a powerful force field opposed to regulation. This antiregulatory predilection shapes and aligns the studies put out by the centers in the "libertarian archipelago"—centers that employ overt advocates like Crews—as well as the business-oriented centers like NAM and SBA Advocacy that award lucrative research contracts to academics like the Crains.

As Upton Sinclair once famously observed, "It is difficult to get a man to understand something, when his salary depends on his not understanding it."[280] This would explain the selective choice of evidence deemed reliable (or unreliable) by authors who hold a certain point of view. It would explain the proliferation of centers publishing convergent messages yielding an abundance of confirming footnotes that give the "published" product verisimilitude and authority. And it would explain the efficacy of that message: the libertarian/business archipelago itself exploits the "availability heuristic" discussed earlier in this Article to substitute repetition for proof in propelling an antiregulatory message.[281] That message gets a willing audience (and megaphone) from Capitol Hill, where libertarians led by Dick Armey and Newt Gingrich led a movement that produced the Contract with America and a conservative majority in 1994, and produced an enduring (now controlling) bloc of reliable votes for a strongly libertarian agenda on regulation that persists to the present day.[282]

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280.   Upton Sinclair, *I, Candidate for Governor and How I Got Licked*, OAKLAND TRIBUNE 109 (Dec. 11, 1934).

281.   *See supra* discussion accompanying notes 101–02.

282.   MacLean (2017), *supra* note 269, at 190–92. Defining the appeal of the "libertarian" ideology electorally and in Congress requires a measure of nuance. Conservative observers note that the appeal of pure and comprehensive libertarianism is not overwhelming and may be in decline in the areas of trade

MacLean offers abundant historical evidence for the "force field" hypothesis: far more evidence than can be compressed into these pages.[283] That said, it remains one scholar's account. It should not be taken at face value, but studied, probed, and tested like any other scholarly contribution. Regulatory critics may contest the facts of her account. Even if it withstands factual scrutiny, they may reply that the libertarian project merely serves to counterbalance the liberal force field of the traditional academic establishment, with its visceral devotion to expanding government in the service of social engineering. Such an exchange might simply confirm that regulatory policy and rhetoric has become nearly as polarized, and polarizing, an issue in today's United States as abortion, guns, and climate change.

In any case, the situation poses a dilemma for Congress, for the President, for agencies, for the media, for scholars, and for the public. When "experts" disagree, whom do you believe? Congress has seen fit to pass the Information Quality Act to help ensure that agencies act only on the best available data and analysis.[284] Congress itself, however, has no equivalent filter or check. This is alarming because Congress is, after all, one of the most important and powerful consumers of data and analysis in the world. If an administrative agency gets its facts or analysis seriously wrong in the course of promulgating a regulation, that agency is subject to reversal in the courts under the "arbitrary and capricious" standard of judicial review.[285] If Congress, however, *legislates* arbitrarily and capriciously, based on bogus data or analysis, there usually is no recourse in the courts at all so long as the law otherwise conforms to the Constitution.[286] It is thus especially vital for Congress to get its facts right. Yet Congress appears to have created for itself no *mandatory* mechanism or reliable process for vetting

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and immigration. *See* Henry Olson, *What Happened to the 'Libertarian Moment'?*, NAT'L REVIEW, (Nov. 20, 2017), https://www.nationalreview.com/2017/11/libertarian-conservatives-influence-republican-party-shrinking/ (noting that "at most one in six [Republican respondents to exit polls] could be called liberty-minded conservatives, people who wanted both smaller government and lower taxes and made that their principal priority" while a much larger, and growing, fraction of the Republican base now identify themselves as "staunch conservatives" but oppose free trade and immigration). Opposition to free trade and immigration may disqualify such voters from the "libertarian" label for purists at the National Review, but it does not translate into support for, or even tolerance of, health, safety, environmental, and financial regulation. In the realm of regulation, the libertarian orientation would appear to remain dominant for the vast majority of Republican voters, and for their representatives in Congress.

283.   MacLean (2017), *supra* note 269, at xix–xxi, 199–234, and passim.

284.   Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No, 106-554 § 515 (appropriations rider colloquially known as "Information Quality Act" requiring OMB to issue guidance to federal agencies designed to ensure the 'quality, objectivity, utility and integrity' of information disseminated to the public, and further requiring agencies to issue their own information quality guidelines to establish administrative mechanisms to allow private parties to see correction of information disseminated by agencies that does not comply with OMB data quality guidance). For a description of the Act, see Copeland, Curtis W. and Michael Simpson, The Information Quality Act: OMB's Guidance and Initial Implementation, CRS Report for Congress, Order Code RL32532 (Aug. 19, 2004), https://fas.org/sgp/crs/RL32532.pdf.

285.   Administrative Procedure Act, 5 U.S.C. §§ 702, 706 (2012).

286.   James R. Rogers & Georg Vanberg, Resurrecting Lochner: A Defense of Unprincipled Judicial Activism, 23 J.L ECON. & ORG. 442, 446 (2007).

its sources of information to ensure quality, reliability, or even veracity.[287] The House of Representative's uncritical embrace of a $2 trillion fabrication is the proverbial canary in a coal mine. There is an urgent need for Congress to take concrete steps to fix this problem, though the exact nature of the solution is outside the Article's scope.

CONCLUSION

Parts I through III have shown that there is no credible evidence to support claims that federal regulation reduces GDP by $2 trillion per year. Nor is there credible evidence to support claims that the cost of regulations exceeds their benefits, or that they are harming the economy. Indeed, it is a tribute to the mesmerizing effect of these studies that willing believers do not seem to notice the disconnection between these gloom-and-doom claims and the daily news. The U.S. economy is at or near full employment.[288] The stock market is hovering near-record levels (or was until President Trump announced his policy of trade war).[289] Profits for American companies are so high that for years many U.S. companies have been buying back their own shares *en masse*.[290] And the

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287.   To be sure, House and Senate committees and Members of Congress can request reports on particular claims, issues, or studies by the Congressional Research Service (CRS) and/or the GAO, while the Congressional Budget Office (CBO) has an important analytic role on budgetary matters within its purview. But nothing *requires* Members of Congress or Committees to seek the counsel of CRS and GAO, or to discount studies that these entities find to be of dubious reliability. In this case, as seen earlier, the CRS and GAO both sharply criticized the 2010 Crain study, but that did not stop the House from later adopting Concurrent Resolution 125, which uncritically accepted the equally-flawed 2014 aggregate regulatory cost estimate by these same authors. *See supra* discussion accompanying note 12.

288.   Ben Leubsdorf, *Economists Think the U.S. Economy is At or Near Full Employment*, WALL STREET J. (Jan. 11, 2018), https://www.blogs.wsj.com/economics/2018/01/11/economists-think-the-u-s-economy-is-at-or-near-full-employment/; Lucia Mutikani, *U.S. job growth cools as labor market nears full employment; wages up*, REUTERS (Jan. 5, 2018), https://www.reuters.com/article/us-usa-economy/u-s-job-growth-cools-as-labor-market-nears-full-employment-wages-up-idUSKBN1EU0EF [https://perma.cc/99XM-TJK5].

289.   Fred Imbert, *Dow spikes 322 points, closes above 26,000 for the first time*, CNBC (Jan. 17, 2018), https://www.cnbc.com/2018/01/17/us-stocks-dow-earnings-bank-of-america.html [https://perma.cc/XM7B-SDDK]. As of January 25, 2019, the Dow stood at 24,737.20. *See* Google: Market Summary > Dow Jones Industrial Average, Jan. 25, http://perma.cc/95LL-R4X7 (Jan. 27, 2019, 9:05 pm). Given, however, the Trump Administration's heavy-handed deregulation over the past 24 months, that retrenchment obviously cannot be blamed on new government regulations.

290.   Matt Phillips, *Trump's Tax Cuts in Hand, Companies Spend More on Themselves Than on Wages*, N.Y. TIMES (Feb. 26, 2018), https://www.nytimes.com/2018/02/26/business/tax-cuts-share-buybacks-corporate.html [https://perma.cc/EA6K-NFRB]. Though the Trump tax bill triggered the latest round of stock buybacks, high corporate profits and bulging corporate treasure chests of cash were spawning buybacks in the "heyday" of regulation long before the election of President Trump. *See* Michael Kranish, *Feast for investors sells workers short*, BOSTON GLOBE (May 31, 2015), https://www.bostonglobe.com/news/nation/2015/05/30/companies-pour-billions-into-buying-back-stock-but-workers-and-economy-may-paying-high-price/8vi1toy4kZBr59ykKYzdNL/story.html. ("Buybacks are booming because US companies have earned record profits and are hoarding a vast amount of cash.").

economy was doing very well before Trump was elected.[291] Whatever the precise cost of regulation may be, it clearly is not strangling the U.S. economy.

Therein lies an irony. President Trump needed less than two weeks on the job to roll out an Executive Order aimed at eliminating "job-killing regulations"—and an ongoing campaign to repeal or weaken regulations that protect our health, safety, environment, and economy—despite the awkward fact that the sole piece of evidence he used to justify that phrase (an alleged regulatory cost to the US economy of $2 trillion per year) is without any factual foundation. Nor is he alone. By the time of President Trump's election, a majority of the House of Representatives had already jumped enthusiastically aboard the deregulatory bandwagon: trumpeting the $2 trillion fabrication as a basis for proposing all manner of antiregulatory restrictions *before* President Trump was elected.[292]

What those circumstances reveal is not an economic crisis from over-regulation. They reveal, rather, the power of the libertarian movement, the liberties that movement is willing to take with facts, and a deep flaw in the fact-finding and fact-checking processes of Congress and the White House.

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291.   *See* Ezra Klein, *The Truth About the Trump Economy: Did Trump Unleash an Economic Miracle, or Take Credit for Obama's Work?*, Vox (Aug. 24, 2018), https://www.vox.com/policy-and-politics/2018/8/24/17759940/donald-trump-economy-jobs-growth-obama (comparing the economy under Presidents Obama and Trump and concluding that the economy was doing well before President Trump took office).

292.   *See* House Conc. Res. 125, *supra* note 12.

Annex

*Results of Efforts to Replicate the Crain and Crain Regression Analysis
and an Exploration of Its Robustness*

Matthew B. Hall

Because the Crains refused to share their data, we were forced to compile our own from the data sources that the Crains mention in their paper, which are the OECD StatExtracts and World Economic Forum Global Competitiveness Report.[293] A comparison of summary statistics between the Crains dataset and our dataset follows:

Table 1
Crain & Crain (2014)[294]

Variable	Mean	Standard Deviation	Minimum	Maximum
GDP per Capita*	10.24	0.39	7.99	11.21
Economic Regulation Index**	4.08	0.70	2.07	5.59
Trade/GDP**	95.68	54.90	24.69	333.53
Dependency Ratio**	24.42	6.18	10.87	41.54
Tax Revenue/GDP**	34.25	7.28	17.21	49.62
Capital Investment/GDP**	21.08	5.83	10.76	52.84
Labor Force* **	8.79	1.48	5.12	11.89

Table 2
WEF and OECD Data Used in Replication Effort

Variable	Mean	Standard Deviation	Minimum	Maximum
GDP per Capita*	10.31	0.37	9.40	11.36
Economic Regulation Index**	4.08	0.71	2.07	5.68
Trade/GDP**	96.20	57.51	24.49	352.91
Dependency Ratio**	22.53	5.87	8.68	40.37
Tax Revenue/GDP**	33.38	7.23	12.83	46.79
Capital Investment/GDP**	22.91	4.30	11.60	39.35
Labor Force* **	8.79	1.47	5.12	11.91

* Indicates a natural logarithmic transformation of the variable.

** One-year lagged value for the variable is used in the regression

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293. Klaus Schwab, World Economic Forum: Global Competitiveness Report, 2013-2014, Full Data Edition, available online at http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf[https://perma.cc/XA9E-EC23]. Copies of our datasets are available on request.

294. Crain (2014), *supra* note 14, at 69.

It is obvious that these datasets are similar but not identical. For several of the variables, the various sources make further distinctions between data with similar descriptions. For instance, GDP per capita can be differentiated by using current Purchasing Power Parity and prices, or constant Purchasing Power Parity and prices, the latter of which was used in our analysis. Note that for two variables (GDP per capita and Labor Force) a natural logarithmic transformation is used. In all of these estimations, with the exception of (3), we are able to use 221 observations (or data points) whereas the Crains were able to use only 219. This discrepancy is almost certainly due to missing data in the Crains' dataset that was subsequently updated, but is unlikely to be the cause of all of the variation.

One important note is that the values of the various components of the Global Competitiveness Index can be revised or updated. As evidenced by the above tables of summary statistics, our data for the GCI values are very close but not identical to the Crains'. However, for all other variables there are larger discrepancies between the datasets which ultimately could explain our somewhat different results.

We performed several regressions to test the robustness of the Crain and Crain analysis.

Table 3 reports the results of our efforts to reproduce the Crain and Crain regression analysis. In column (1) the results from Crain (2014) are reprinted. Column (2) reports the results of our regression analysis using the equation in Crain (2014) and the dataset that we compiled. Our results show a more statistically significant relationship (at a 99 percent level of confidence as opposed to their 95 percent level of confidence) between the dependent variable of GDP per capita and the composite index the Crains used, albeit with a much lower coefficient of 0.052 versus their estimate of 0.081. Thus, the size of our estimated effect is only 64 percent of theirs.

The regression in Table 3 column (3) uses the same specifications and country/year combinations as the baseline but using a "fixed effects" model, which is more useful when analyzing panel (cross-sectional and/or time-series) data such as this.[295] A fixed-effects model controls for unobserved heterogeneity, which is to say that it can correct for omitted variables, which are the result of causal inference and selection bias.[296] In this regression, the sign on the coefficient for GCI changes, which means that the estimated effect is in the opposite direction. This would imply that greater regulation in fact leads to lower GDP per capita. In this regression much of the model retains its statistical significance.

Column (4) of Table 3 reveals what happens when per capita GDP growth (the dependent variable of choice in the economic literature on factors shaping

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295.   A. H. STUDENMUND & BRUCE K. JOHNSON, USING ECONOMETRICS: A PRACTICAL GUIDE 475–83 (7th ed. 2017).

296.   Kennedy, *supra* note 97, at 281–92.

economic performance) is substituted for ERI in the Crains' regression. It reveals that the regression coefficient for ERI changes sign and becomes statistically insignificant by traditional measures.

Table 4, Columns (1) through (6) show what happens when the Crains' ERI figure is replaced with an alternative GCI component drawn from other "global competitiveness indicators" covered by the WEF poll (the indicators are listed in the first row of Table 4). With the exception of column (6)—1.18 Strength of Auditing and Reporting Standards—all these factors show statistical significance. In the last rows of Table 3, we compute the estimated cost to U.S. GDP per capita by using the coefficient estimate and determining the difference between the U.S.'s value of that composite or individual measure and the mean value of the top five countries for 2012 for the specific measure, following the Crains' methodology. Because each of the individual GCI components are designed to measure traits which are independent of each other, the implied costs to GDP from each can be added together to form an aggregate estimate of the implied regulatory costs. These costs are displayed in the bottom row of Table 3.

Finally, Table 4 columns (7) and (8) show what happens if the Crains' composite index of three indicators—1.09 Burden of Government Regulations; 1.11 Efficiency of Legal Framework in Challenging Regulations; and 1.08 Regulation of Securities Exchanges—is deconstructed into components and substituted in the Crains' regression for ERI. Interestingly, Burden of Government Regulation only has a small value and is not statistically significant by traditional measures, when inserted by itself into the Crains' regression in place of ERI. Regulatory Burden gains a statistically significant regression coefficient only when bundled with two other measures that do not directly track regulatory burden.

Table 5 displays the results of a regression that utilizes investment share of GDP, initial level of real GDP per capita, initial secondary school enrollment rate, and average annual rate of population growth as independent variables as suggested by the results of the sensitivity analysis in Levine and Renelt (1992), across the same time period (2006 – 2013) and the same 34 OECD countries that were tracked by the Crain and Crain study, along with dummy variables for 2008 and 2009. Column (1) is a regression without the ERI component and shows statistical significance (at 95 percent) for three of the five independent variables, with the other two being statistically significant at the 90 percent confidence level. When the same regression is performed, but with the addition of the ERI variable as in column (2), the results for the independent variables from column (1) remain stable, however the ERI component shows no statistical significance (p-value = 0.872) and changes signs. Regardless, if the coefficient is to be believed, the estimated effect implies that higher ERI scores correspond to lower per capita GDP growth.

In keeping with the methodology of the Crain and Crain study, all regressions are performed without fixed effects and include adjustments for first-

order autocorrelation. When the correction for first-order autocorrelation is removed from column (2), the results remain stable, however the coefficient on ERI decreases even further to -0.059 while remaining statistically insignificant (p-value = 0.820).

A<small>NNEX</small>
Table 3
Results of Effort to Reproduce Crain Regression
(t-statistics in parentheses, ** p<0.01, * p<0.05)

Dependent Variable: GDP per capita ($2005 USD)				
	Crain & Crain	Replication	Replication using Fixed Effects Model	Dependent variable: per capita GDP growth
	(1)	(2)	(3)	(4)
Econ. Reg. Index (ERI)	0.081*	0.052**	-0.030*	-0.312
	(2.46)	(4.72)	(-2.34)	(-1.02)
Trade / GDP	0.002*	.002**	0.001	0.000
	(3.60)	(5.01)	(1.54)	(0.08)
Dependency Ratio	0.007	0.023**	0.032**	-0.299**
	(1.12)	(5.10)	(4.36)	(-4.36)
Tax Revenue / GDP	0.061	0.007	-0.019	0.393
	(1.84)	(0.41)	(-1.14)	(1.80)
(Tax Revenue/GDP)^2	-0.0007	-0.000	0.000	-0.005
	(-1.58)	(-0.20)	(0.97)	(-1.62)
Capital Investment / GDP	0.025**	0.004*	0.004*	0.076
	(5.76)	(2.22)	(2.44)	(1.55)
Labor Force	0.075**	0.020	0.102	0.309
	(2.57)	(0.79)	(0.72)	(1.44)
Year = 2008	0.100**	0.037**	0.033**	-2.235**
	(-2.38)	(-2.82)	(2.77)	(-4.32)
Year = 2009	0.132**	0.071**	-0.026**	-6.626**
	(-3.52)	(-6.39)	(-2.70)	(-13.56)
Constant	7.15*	8.999**	9.107**	-3.448
	(10.35)	(22.88)	(22.64)	(-0.72)
Observations	219	221	188	221
R-squared (overall)	0.58	0.300	0.000898	
Implied Cost in 2012 (trillion $2014 USD)	$1.439	$0.938	-$0.528	N/A

ANNEX
Table 4
Robustness Check Using Alternate Independent Variables (Part 1)
(t-statistics in parentheses, ** p<0.01, * p<0.05)

	Dependent Variable: GDP per capita ($2005 USD)			
	[1.04] Public trust in politicians	[1.06] Judicial independence	[1.07] Favoritism by government officials	[1.08] Wastefulness of gov. spending
	(1)	(2)	(3)	(4)
Alternate Variable of Interest (col. 1-4)	0.045**	0.050**	0.033*	0.050**
	(4.18)	(3.56)	(2.49)	(3.48)
Trade / GDP	0.002**	0.002**	0.002**	0.002**
	(4.99)	(4.74)	(4.53)	(4.80)
Dependency Ratio	0.026**	0.027**	0.027**	0.029**
	(6.03)	(6.21)	(6.15)	(6.51)
Tax Revenue / GDP	0.008	0.009	0.007	0.005
	(0.43)	(0.48)	(0.41)	(0.28)
(Tax Revenue/GDP)^2	-0.000	-0.000	-0.000	-0.000
	(-0.26)	(-0.35)	(-0.29)	(-0.14)
Capital Investment/ GDP	0.001	0.002	0.002	0.001
	(0.52)	(1.26)	(1.09)	(0.44)
Labor Force	0.022	0.020	0.014	0.018
	(0.94)	(0.80)	(0.57)	(0.72)
Year = 2008	0.005	0.004	0.005	0.006
	(0.52)	(0.42)	(0.54)	(0.63)
Year = 2009	-0.049**	-0.048**	-0.048**	-0.044**
	(-4.80)	(-4.91)	(-4.62)	(-4.50)
Constant	8.997**	8.876**	9.089**	9.027**
	(23.04)	(21.87)	(22.58)	(22.73)
Observations	221	221	221	221
R-squared (overall)	0.370	0.343	0.278	.307
Implied Cost of Alternate Variable in 2012 (trillion $2014 USD)	$1.863	$1.352	$1.124	$1.507

ANNEX
Table 4 (cont'd)
Robustness Check of Crain Using Alternative Independent Variables (Part 2)
(t-statistics in parentheses, ** p<0.01, * p<0.05)

Dependent Variable: GDP per capita ($2005 USD)				
	[1.15] Organized crime	[1.18] Strength of audit & reporting standards	[1.09] Burden of Government Regulations	Composite of [1.09] and [1.11]
	(5)	(6)	(7)	(8)
Alternative variable of interest (col. 5 – 8)	0.065**	0.013	0.019	0.036**
	(4.60)	(0.79)	(1.23)	(3.07)
Trade / GDP	0.002**	0.002**	0.002**	0.002**
	(4.29)	(4.06)	(4.11)	(4.46)
Dependency Ratio	0.028**	0.030**	0.030**	0.026**
	(6.59)	(6.55)	(6.59)	(5.86)
Tax Revenue / GDP	0.007	0.007	0.008	0.008
	(0.40)	(0.37)	(0.44)	(0.46)
(Tax Revenue/GDP)^2	-0.000	-0.000	-0.000	-0.000
	(-0.30)	(-0.35)	(-0.40)	(-0.33)
Capital Investment / GDP	0.004*	0.002	0.002	0.002
	(2.42)	(1.34)	(1.47)	(1.38)
Labor Force	0.030	0.008	0.011	0.015
	(1.09)	(0.30)	(0.42)	(0.60)
Year = 2008	0.003	0.012	0.010	0.014
	(0.41)	(1.36)	(1.21)	(1.65)
Year = 2009	-0.049**	-0.040**	-0.040**	-0.029**
	(-5.49)	(-4.23)	(-4.25)	(-2.91)
Constant	8.682**	9.186**	9.153**	9.080**
	(21.13)	(22.35)	(22.24)	(22.64)
Observations	221	221	221	221
Implied Cost of Alternate Variable in 2012 (trillion $2014 USD)	$1.923	$0.203	$0.340	$0.724

ANNEX

Table 5

Robustness Check of Crain Using Alternative Independent Variables (Part 2)

(t-statistics in parentheses, ** $p<0.01$, * $p<0.05$)

Dependent Variable: growth of GDP per capita		
	(1)	(2)
ERI	-	-0.041
	-	(-0.16)
Initial Secondary School Enrollment Rate (base year = 2006)	-9.612*	-9.566*
	(-2.25)	(-2.26)
Capital Investment / GDP	0.317**	0.316**
	(7.87)	(7.85)
Average Rate of Population Growth	0.705	0.710*
	(1.95)	(1.99)
Initial real GDP per capita (base year = 2006)	-0.000**	-0.000**
	(3.29)	(-3.06)
Foreign Trade / GDP	0.007	0.007
	(1.86)	(1.85)
Year = 2008	-2.933**	-2.908**
	(-7.73)	(-7.53)
Year = 2009	-5.970**	-5.953**
	(-15.59)	(-15.38)
Constant	5.235	5.329
	(1.20)	(1.23)
Observations	272	272
R^2 (overall)	0.560	0.559