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Cost-Benefit Analysis and the Conflict Minerals Rule

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COST-BENEFIT ANALYSIS AND THE CONFLICT MINERALS RULE

Jeff Schwartz* & Alexandra Nelson*

The SEC made headlines when, in its release announcing the final version of its controversial Conflict Minerals Rule, the agency estimated that the rule would cost industry between \$3–\$4 billion in the first year alone. These figures have been widely accepted and have anchored a heated debate about the rule’s cost. But this Article proves that the estimate is baseless. The SEC engaged in a dense mathematical discussion of potential compliance expenses, but the core of its analysis rested on inapt and unsound economic models and empirical work. First, this finding means that the SEC’s figures should play a muted role in the ongoing public discourse. Second, our study of the SEC’s work, and the context surrounding it, sheds light on the controversy around cost-benefit analysis. The D.C. Circuit has held that the SEC, like many other agencies, must quantify and weigh the costs and benefits of its regulations. This Article provides an empirical contribution to the growing body of research that calls into doubt the deepening trust that policymakers and courts have bestowed upon this mode of analysis.

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I. INTRODUCTION

In Section 1502 of Dodd-Frank, Congress instructed the Securities and Exchange Commission (the “SEC”) to draft rules requiring public companies to disclose their use of certain minerals obtained from the war-torn Congo region of Africa.¹ This effort to bring transparency to supply

¹ Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213 (codified at 15 U.S.C. § 78m(p) (2012)).

chains in so-called “conflict minerals” has proven highly controversial.² While skeptics have offered a wide range of critiques, their central argument has been that compliance would be extraordinarily costly.³

In this regard, defenders of the rule were put on their heels and critics emboldened when the SEC, in its release setting out the final Conflict Minerals Rule, estimated that compliance would cost industry members a stratospheric \$3–\$4 billion in the first year.⁴ This range has been repeated over ten thousand times in a wide range of publications.⁵ Scholars,⁶ the press,⁷ and even the courts⁸ have deferred to its validity.

Yet it is groundless. This Article is the first to unpack and closely consider the SEC’s effort to quantify the costs of the Conflict Minerals Rule. The agency’s analysis is laden with baseless assumptions and lacks any semblance of statistical rigor.⁹ Rather than frankly acknowledge these problems, the SEC’s discussion glosses over them and mischaracterizes key inputs.¹⁰ These findings are important for two reasons. First, they show that the debate about the cost of the Conflict Minerals Rule has been grossly

² For a summary of the controversy, see Jeff Schwartz, *The Conflict Minerals Experiment*, 6 HARV. BUS. L. REV. 13–16 (forthcoming 2015), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2548267.

³ See, e.g., *Business Groups Tell Court that Conflict Minerals Rule Costs Too Much*, THOMSON REUTERS TAX AND ACCOUNTING ALERT, Vol. 6, No. 230, Nov. 28, 2012 (quoting business groups as arguing that the costs will be “astronomical”); Christopher M. Matthews, *Business Groups Sue to Block “Conflict Minerals” Rules*, WALL ST. J. CORRUPTION CURRENTS (Oct. 22, 2012, 4:38 PM), <http://blogs.wsj.com/corruption-currents/2012/10/22/business-groups-sue-to-block-conflict-minerals-rules/>.

⁴ Conflict Minerals, 77 Fed. Reg. 56,274, 56,334 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 204.13p-1 & 249b.400) [hereinafter SEC Final Rule].

⁵ This estimate was generated through a search on Google Advanced for websites including all of the following—“conflict minerals,” “4 billion,” and “cost.” The search returned 11,100 hits.

⁶ See, e.g., Sandeep Gopalan & Katrina Hogan, *Ethical Transnational Corporate Activity at Home and Abroad: A Proposal for Reforming Continuous Disclosure Obligations in Australia and The United States*, 46 COLUM. HUM. RTS. L. REV. 1, 5 n. 8 (2015); Karen E. Woody, *Conflict Minerals Legislation: The SEC’s New Role as Diplomatic and Humanitarian Watchdog*, 81 FORDHAM L. REV. 1315 (2012).

⁷ See, e.g., Emily Chasan & Joel Schectman, *Companies Unearth Few Answers on ‘Conflict Minerals,’* WALL ST. J. CFO REPORT (May 20, 2014, 3:36 AM), <http://blogs.wsj.com/cfo/2014/05/20/companies-unearth-few-answers-on-conflict-minerals/>; John Kester & Maxwell Murphy, *Companies Detail Use of ‘Conflict’ Metals: First Reports Filed to SEC on Potential Use of Minerals From a Region of War-Torn Africa*, WALL ST. J., (June 2, 2014), <http://www.wsj.com/articles/companies-detail-use-of-conflict-metals-1401751678>.

⁸ See *infra* Part V.B.3.

⁹ See *infra* Part IV.

¹⁰ See *infra* Part IV.A.

misinformed. The SEC’s estimate should no longer anchor public discourse on the issue; it should likewise fade from debates about the probity of other supply-chain transparency efforts currently under consideration across the globe.¹¹ Second, our analysis informs the contemporary political and scholarly dialogue about cost-benefit analysis.¹²

Congress, the courts, and the executive branch have all recently endorsed a demanding form of cost-benefit analysis, in which agencies exhaustively quantify and weigh all costs and benefits of their rules, as the preferred analytical approach.¹³ This methodology, which we will refer to as quantified cost-benefit analysis (“QCBA”),¹⁴ is traditionally associated with health and safety regulations,¹⁵ as well as environmental rules,¹⁶ but, in a highly controversial series of decisions, the D.C. Circuit has, in effect, imposed a QCBA mandate on the SEC.¹⁷ Like many other agencies, the

¹¹ The European Union, for example, is considering regulations based on the Conflict Minerals Rule. See Emily Chasan, *EU Parliament Backs Mandatory Conflict Minerals Reporting*, WALL ST. J. CFO REPORT (May 20, 2015, 11:46 AM), <http://blogs.wsj.com/cfo/2015/05/20/european-parliament-backs-mandatory-conflict-minerals-reporting/>.

¹² Leading works in the QCBA debate include FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2005); Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553 (2002); Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165 (1999); Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000). More recent works include John Bronsteen et al., *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 DUKE L.J. 1603 (2013); Michael A. Livermore, *Cost-Benefit Analysis and Agency Independence*, 81 U. CHI. L. REV. 609 (2014); Cass R. Sunstein, *The Limits of Quantification*, 102 CAL. L. REV. 1369 (2014) [hereinafter Sunstein, *Limits of Quantification*]. Finally, in the last several years, there has been a heated debate regarding QCBA at the SEC. See sources cited *infra* note 17.

¹³ See *infra* Part II.

¹⁴ Professor Coates used this terminology in his recent article on cost-benefit analysis in financial regulation. See generally John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882 (2015). It could be argued that the word “quantified” is unnecessary and that all cost-benefit analysis is quantified. See Jonathan S. Masur & Eric A. Posner, *Unquantified Benefits: Toward Bayesian Cost-Benefit Analysis* 1 (Univ. Chi. Law Sch., Working Paper, April 17, 2015), <https://bfj.uchicago.edu/sites/default/files/research/Masur%20%26%20Posner%20Unquantified%20Benefits.pdf> (defining cost-benefit analysis as we have defined QCBA). We find the distinction useful, however, given the variety of ways in which the phrase, “cost-benefit analysis,” is used.

¹⁵ See, e.g., Cass R. Sunstein, *The Arithmetic of Arsenic*, 90 GEO. L.J. 2255 (2002).

¹⁶ See, e.g., Ackerman & Heinzerling, *supra* note 12.

¹⁷ The cases are discussed *infra* Part II. The wisdom and propriety of expanding the QCBA mandate to the SEC has proven highly controversial. See, e.g., Robert B. Ahdieh, *Reanalyzing Cost-Benefit Analysis: Toward a Framework of Function(s) and Form(s)*, 88 N.Y.U. L. REV. 1983 (2013); Coates, *supra* note 14; Jeffrey N. Gordon, *The Empty Call for*

SEC must now quantify the costs and benefits of its rules in dollar terms as part of its rulemaking process.

This Article provides empirical evidence suggesting that the embrace of QCBA, and its extension to the SEC, may be ill-advised. Adherents contend that QCBA adds transparency and rigor to regulatory analysis. In this case, however, the SEC's quantification of costs deceived the public and added no analytical depth.¹⁸ More broadly, even though the SEC ignored the instruction to quantify benefits, and did a poor job of quantifying costs, even if it had analyzed both sides, and done so to the best of its abilities, it would have run up against insurmountable epistemic hurdles that inhere in QCBA, calling into question QCBA's value regardless of how competently an agency applies it in any particular rulemaking effort.

This wider implication is rooted in our detailed assessment of the SEC's compliance-cost estimate. Even though we use the common nomenclature, labelling the \$3-\$4 billion calculation as the "SEC's estimate" is itself not quite right. It implies that the SEC built its own model of potential costs from the ground up. In reality, the agency generated these figures primarily based on cost analyses submitted by two commentators—Tulane University Law School's Payson Center for International Development (prepared on its behalf by a first-year doctoral student), and the National Association of Manufacturers, an industry lobbying organization.¹⁹ The oft-repeated cost range is the result of a Frankenstein-like combination of these submissions. Both commenters modeled the potential costs of the rules, but these models depended on unfounded assumptions or dubious statistics for key inputs. In combining the models,

Benefit-Cost Analysis in Financial Regulation, 43 J. LEGAL STUD. S351 (2014); Bruce R. Kraus, *Economists in the Room at the SEC*, 124 YALE L.J. FORUM 280 (2015); Bruce Kraus & Connor Raso, *Rational Boundaries for SEC Cost-Benefit Analysis*, 30 YALE J. ON REG. 289 (2013); Yoon-Ho Alex Lee, *The Efficiency Criterion for Securities Regulation: Investor Welfare or Total Surplus?*, 57 ARIZ. L. REV. 85 (2015); Donna M. Nagy, *The Costs of Mandatory Cost-Benefit Analysis in SEC Rulemaking*, 57 ARIZ. L. REV. 129 (2015); Eric A. Posner & E. Glen Weyl, *Cost-Benefit Analysis of Financial Regulations: A Response to Criticisms*, 124 YALE L.J. FORUM 246 (2015) [hereinafter Posner & Weyl, *A Response to Criticisms*]; Eric A. Posner & E. Glen Weyl, *Benefit-Cost Paradigms in Financial Regulation*, 43 J. LEGAL STUD. S1 (2014) [hereinafter Posner & Weyl, *Paradigms in Financial Regulation*]; Cass R. Sunstein, *Financial Regulation and Cost-Benefit Analysis*, 124 YALE L.J. FORUM 263 (2015).

¹⁸ See *infra* Part V.B.2.

¹⁹ NAM is the "largest manufacturing association in the United States, representing small and large manufacturers in every industrial sector and in all 50 states." NATIONAL ASSOCIATION OF MANUFACTURES, About, <http://www.nam.org/About/#sthash.6dgmA6k9.dpuf> (last visited Aug. 13, 2015).

the SEC mostly looked past these concerns and even misrepresented their components. The end result is hard numbers, but everything behind them is soft.²⁰

The bottom-line estimate, however, has been central to the debate over the Conflict Minerals Rule. For three years, commentators have been arguing about the cost of the rule based on figures that should have been discarded. In hindsight, it is likely compliance cost far less. A recent study shows that far fewer companies than originally estimated filed reports pursuant to the rules, and the discussion in those that did file betrays a largely perfunctory supply-chain due-diligence process. Preliminary survey results from filers also suggest industry-wide costs were overestimated.²¹

Despite the fatal shortcomings in the SEC's quantification effort, it is likely a harbinger of things to come. The value of QCBA is the rare thing that generates agreement across political parties and the three branches of government. This Article's close study of what QCBA looks like in practice suggests that the political consensus is incorrect. While QCBA has many friends in academic circles as well, its rise has also been accompanied by an academic countercurrent, with Professor Coates most recently decrying its use in financial regulation in the *Yale Law Journal*.²² The lessons from our study largely support the arguments against QCBA raised by Coates and other critics. Proving out their critique, the SEC appears to have used quantification as "camouflage"²³ to avoid public condemnation, and more importantly, judicial rebuke, rather than as a tool to improve the quality of its analysis and the resulting regulations.²⁴ In addition, the conflict-minerals case is particularly damning because it illuminates problems with QCBA in a part of the analysis that is usually considered easier. While most commentators focus on the difficulty of quantifying benefits,²⁵ here there were deep problems in estimating compliance costs.

The conflict-minerals example also casts judicial review in a negative light. As alluded to above, the SEC's QCBA mandate comes from the D.C. Circuit, which has, over the last decade, read the requirement into ambiguous language in the securities laws, and used the SEC's failure to appropriately conduct this mode of analysis as the basis to strike down its

²⁰ See *infra* Part III-IV.

²¹ See *infra* Part V.A.

²² See Coates, *supra* note 14.

²³ See Coates, *supra* note 14, at 898.

²⁴ See *infra* Part V.B.3.

²⁵ See Ackerman & Heinzerling, *supra* note 12, at 1578; Masur & Posner, *supra* note 14, at 3 ("[c]ost estimates are usually straightforward exercises in accounting, and can take advantage of data that industry, government, and academia have collected for their own purposes."); Sunstein, *Limits of Quantification*, *supra* note 12.

rules in response to industry challenges.²⁶ Like many of its predecessors, the Conflict Minerals Rule was also subject to protracted litigation. Neither the district nor circuit court, however, recognized the manifold flaws in the SEC's analysis. In fact, both went out of their way to praise the charade. This supports critics who have argued that courts lack the expertise to opine on the topic.²⁷

While our analysis exposes shortcomings at the SEC and the courts, it also illustrates inherent limitation and drawbacks of QCBA itself. A full quantification of the costs and benefits of the Conflict Minerals Rule would have required the SEC to put a monetary value on preventing rape in the Congo, as well as forecast how companies would respond to the new rule, what this would cost, and what the effect in the Congo would be. There is simply no good way to put all of this in numbers, which suggests the mandate to engage in this pursuit set the SEC off on a fool's errand.²⁸

Similarly, the SEC's lack of forthrightness and the public's inability to see through it can be understood as characteristic of QCBA. The inherent fallibility of the methodology, along with the ubiquitous agency drive to avoid public or judicial condemnation, create an incentive to always gloss over frailties in a quantification effort. Public apathy and the fast pace of the news media make immediate detection unlikely. While the SEC is deserving of critique, QCBA seems to lend itself to the sort of agency evasiveness and public misapprehension seen in this case. In light of these broader concerns, we argue that as a policy matter, our study supports the claim that policymakers should reconsider the country's ever-deepening commitment to QCBA, and that, in particular, they should question its expansion to the SEC.²⁹

In Part II, we provide background on both the substance of the Conflict Minerals Rule and the requirement that the SEC engage in QCBA as part of its rule-making. Part III dissects the SEC's analysis of compliance costs, and Part IV argues that the resulting figures are ill-informed guesses disguised as thoughtful calculations. Finally, in Part V, we discuss the implications of this analysis for our understanding of the Conflict Minerals Rule, as well as for the debate regarding the proper role of QCBA and court review thereof in the regulatory process. Our findings raise significant concerns about the status quo in each of these areas.

²⁶ See *infra* Part II.

²⁷ See *infra* Part V.B.3.

²⁸ See *infra* Part V.B.2.

²⁹ See *infra* Part V.B.4.

II. THE CONFLICT MINERALS RULE AND QUANTIFIED COST-BENEFIT ANALYSIS

The conventional version of administrative law is that Congress sets the regulatory agenda and agencies implement it.³⁰ Not so in this case. As with much of Dodd-Frank, Congress gave the SEC detailed directions for drafting the final Conflict Minerals Rule.³¹

In the legislation, Congress outlined what boils down to a three-part compliance requirement. The SEC was instructed to draft rules that would require public companies to (i) conduct due diligence into their conflict mineral supply chains (i.e., their supply chains in tin, tungsten, tantalum and gold), (ii) have those diligence efforts audited, and (iii) report on how they conducted their diligence and on what they found.³² In the mandated reports, there were several key findings Congress wanted companies to disclose: each product that potentially contains conflict minerals originating from militarized mines in the Congo region, the country of origin of the conflict minerals in such products, and the smelter that processed those minerals.³³

The SEC closely hewed to Congress's legislative intent while creating a comprehensive and complex rule structure. The nuances of the regulations are unimportant for this Article, but there are a few features relevant to understanding the agency's QCBA. First, the SEC broke down company reporting requirements into two different documents. If a company uses conflict minerals in its products, but ascertains that they are not from the Congo region, they are permitted to file a relatively simple document—Form SD.³⁴ If, on the other hand, companies are unable to make this determination, they are required to complete a Conflict Mineral Report (a "CMR"), which is much more comprehensive and which, unlike Form SD, is subject to the Congressionally mandated audit requirement.³⁵ Second,

³⁰ See Daniel P. Selmi, *Jurisdiction to Review Agency Inaction Under Federal Environmental Law*, 72 IND. L.J. 65, 140 (1996).

³¹ See Mary J. White, Chair, Securities & Exchange Comm'n, 14th Annual A.A. Sommer, Jr. Corporate Securities and Financial Law Lecture, Fordham Law School: The Importance of Independence (Oct. 3, 2013), <http://www.sec.gov/News/Speech/Detail/Speech/1370539864016#.UIMntVNGars>.

³² See 15 U.S.C. § 78m(p)(1)(A)(i)–(ii) (2012).

³³ See § 78m(p)(1)(A)(ii). For background on the policy motivation for the rule, see Alexandra L. Nelson, *The Materiality of Morality: Conflict Minerals*, 2014 UTAH L. REV. 219, 221–224.

³⁴ See Form SD, OMB No.: 3235-0697, at 1.01(b), <http://www.sec.gov/about/forms/formsd.pdf>.

³⁵ See *id.* at 1.01(c).

the SEC outlined what corporate due-diligence efforts must entail. Rather than create the requirements from scratch, the agency instructed companies to follow the steps outlined in the OECD's *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas* (the "*OECD Guidance*"),³⁶ a lengthy document that the OECD published prior to Dodd-Frank, designed to offer best practices for companies that make use of conflict minerals.³⁷ To meet the OECD's due-diligence directives, companies must, among other things, develop and execute a process to identify the extent to which they may be using conflict minerals from the Congo, and outline and implement a plan for changing their practices accordingly.³⁸ Finally, the SEC gave substance to the audit requirement. According to the regulations, the auditor is to assess whether the auditee is complying with the *OECD Guidance* and accurately describing its efforts in its CMR.³⁹

Even though the SEC was given fairly specific direction from Congress, the APA required the usual notice-and-comment rulemaking process.⁴⁰ The agency dutifully issued proposed rules on December 15, 2010 and final rules on August 22, 2012.⁴¹ In between, the SEC received thousands of comments.⁴²

Although this process is common across regulatory agencies, different agencies have different requirements regarding the content of their regulatory analyses. Pursuant to a series of executive orders promulgated during the Reagan, Bush, Clinton, and Obama administrations, executive agencies are required to use QCBA in their rulemaking.⁴³ In the words of the most recent promulgation, "each agency is directed to use the best available techniques to quantify anticipated present and future benefits and

³⁶ ORG. FOR ECON. COOPERATION & DEV., *OECD DUE DILIGENCE GUIDANCE FOR RESPONSIBLE SUPPLY CHAINS OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS* (2nd ed. 2013), <http://www.oecd.org/corporate/mne/GuidanceEdition2.pdf> [hereinafter *OECD GUIDANCE*].

³⁷ *See id.* at 3. Technically, the SEC said the diligence effort must conform to "a nationally or internationally recognized due-diligence framework." Form SD, *supra* note 34, at Item 1.01(a). The only one in existence, however, is the *OECD Guidance*. *See* SEC Final Rule, *supra* note 4, at 56,281.

³⁸ *See OECD Guidance, supra* note 36, at 16–19.

³⁹ *See* Form SD, *supra* note 34, at 1.01(c)(1)(ii)(A).

⁴⁰ *See* Administrative Procedures Act, 5 U.S.C. § 553 (2012).

⁴¹ SEC Final Rule, *supra* note 4, at 56,334.

⁴² *Id.*

⁴³ *See* Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981), *superseded by* Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993), *amended by* Exec. Order No. 13,258, 67 Fed. Reg. 9385 (Feb. 26, 2002), *supplemented by* Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011).

costs as accurately as possible.”⁴⁴ An earlier order similarly instructs agencies to “base [their] decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation.”⁴⁵

The SEC, however, reports to Congress, and is therefore not explicitly subject to these mandates.⁴⁶ Nevertheless, the agency has long weighed costs and benefits without quantification as part of its rulemaking efforts.⁴⁷ Indeed, it is hard to picture regulatory analysis without something along these lines.

The requirement that the SEC engage in QCBA arose through a more circuitous path. The agency is subject to two statutes that require some degree of quantification. The Paperwork Reduction Act of 1995 mandates that the agency provide an “objectively supported estimate” of the burden a new disclosure rule places on those subject to it.⁴⁸ In addition, the Regulatory Flexibility Act requires an assessment of how new rules uniquely impact small business.⁴⁹ In gauging the effect on smaller entities, it calls on agencies to “provide either a quantifiable or numerical description of the effects of a proposed rule or alternatives to the proposed rule, or more general descriptive statements if quantification is not practicable or reliable.”⁵⁰

While the above laws apply more broadly, the SEC is also subject to specific statutes pertaining to its rulemaking process. Section 23(a)(2) of the Securities Exchange Act of 1934 (the “Exchange Act”), the statute in play with the Conflict Minerals Rules, requires that the SEC state “the reasons for the Commission’s determination that any burden on competition imposed by such rule or regulation is necessary or appropriate in furtherance of the purposes of [the Exchange Act].”⁵¹ In addition, Section 106 of the National Securities Market Improvement Act (“NSMIA”) added

⁴⁴ Exec. Order No. 13,563, 76 Fed. Reg. at 3821.

⁴⁵ Exec. Order No. 12,866, 58 Fed. Reg. at 51,735.

⁴⁶ See Div. of Risk, Strategy & Fin. Innovation & Office of Gen. Counsel, *Current Guidance on Economic Analysis in SEC Rulemakings* 3 (2012), https://www.sec.gov/divisions/riskfin/rsfi_guidance_econ_analy_secrulemaking.pdf [hereinafter *SEC Memorandum*]; Office of Inspector Gen., *Follow-Up Review of Cost-Benefit Analyses in Selected SEC Dodd-Frank Act Rulemakings*, SEC & EXCH. COMM’N 9 (2012), <http://www.sec.gov/about/offices/oig/reports/audits/2012/499.pdf>.

⁴⁷ *SEC Memorandum*, *supra* note 46, at 1.

⁴⁸ 44 U.S.C. § 3506(c)(1)(a)(iv).

⁴⁹ See Regulatory Flexibility Act of 1980, 5 U.S.C. § 601 et seq. (2012).

⁵⁰ *Id.* at § 607.

⁵¹ 15 U.S.C. 78w(a)2 (2012).

to the securities laws the requirement that the agency consider a proposed rule's effect on "efficiency, competition, and capital formation."⁵²

Up until recently this patchwork of statutes and statutory provisions had been of secondary importance. Neither 23(a)(2) nor NSMIA expressly mention quantification. Moreover, courts were extraordinarily deferential in considering agency efforts under each of the above directives.⁵³

Then things changed. In the last decade, the D.C. Circuit began to interpret NSMIA's language as requiring QCBA, and, in an abandonment of its traditionally deferential stance, struck down SEC rules on the basis that it had not met this obligation.⁵⁴ In this way, the SEC's QCBA mandate was born. Two cases form the key precedents—*Chamber of Commerce v. SEC* ("*Chamber of Commerce*"),⁵⁵ in which the D.C. Circuit first reversed course, and *Business Roundtable v. SEC* ("*Business Roundtable*"),⁵⁶ in which the court's thinking on the matter reached full bloom.

Chamber of Commerce involved a rule requiring that 75% of the members of a mutual fund's board be independent of fund management and that such boards have an independent chairperson.⁵⁷ In this case, the SEC's mistake under NSMIA was its failure to quantify the costs to mutual funds of changing the face of their boards in this manner.⁵⁸ The agency claimed that it had no "reliable basis" to do so.⁵⁹ But this was no excuse. According to the court, "[t]hat particular difficulty may mean the Commission can determine only the range within which a fund's cost of compliance will fall, . . . [but] it does not excuse the Commission from its statutory obligation to determine as best it can the economic implications of the rule it has proposed."⁶⁰ It also instructed, based on language from an earlier opinion regarding the Federal Highway Administration, that "in cases of uncertainty, [sic] agency must 'exercise its expertise to make tough choices about which of the competing estimates is most plausible, and to hazard a

⁵² National Securities Markets Improvement Act of 1996, Pub. L. No. 104-290, § 106, 110 Stat. 3416 (1996) (codified as amended at 15 U.S.C. §§ 77b(b), 78c(f), 80a-2(c) (2012)).

⁵³ See Ahdieh, *supra* note 17, at 1986; Robert P. Bartlett III, *The Institutional Framework for Cost-Benefit Analysis in Financial Regulation: A Tale of Four Paradigms?*, 43 J. LEGAL STUD. S379, S389 (2014); Kraus & Raso, *supra* note 17, at 298 n.32.

⁵⁴ See *Bus. Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011); *Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166 (D.C. Cir. 2010); *Chamber of Commerce v. SEC*, 412 F.3d 133 (D.C. Cir. 2005).

⁵⁵ *Chamber of Commerce*, 412 F.3d at 133.

⁵⁶ *Bus. Roundtable*, 647 F.3d at 1144.

⁵⁷ *Chamber of Commerce*, 412 F.3d at 136.

⁵⁸ See *id.* at 136, 144.

⁵⁹ *Id.* at 143–44.

⁶⁰ *Id.* at 143.

guess as to which is correct, even if . . . the estimate will be imprecise.”⁶¹ The SEC’s failure to “hazard a guess” as to the cost of its rules meant that its rulemaking was “arbitrary and capricious” under the APA, providing the court with the basis to strike it down.⁶²

This decision, while jarring for the SEC, lacked a fully articulated vision of the court’s view on what the agency’s analysis should entail. That came in *Business Roundtable*. The rule at issue in this case required public companies to include board nominations from insurgent shareholders in management’s proxy materials in certain instances.⁶³ Even though this rule was explicitly authorized in Dodd-Frank, and the SEC engaged in a lengthy and thorough qualitative analysis of the rule (reportedly costing over \$2 million),⁶⁴ it was unapologetically struck down.⁶⁵ According to the court, the agency violated NSMIA’s instruction to consider how its rule impacts “efficiency, competition, and capital formation,” because it “inconsistently and opportunistically framed the costs and benefits of the rule; failed adequately to quantify the certain costs or to explain why those costs could not be quantified; neglected to support its predictive judgments; contradicted itself; and failed to respond to substantial problems raised by commenters.”⁶⁶ In its far-reaching critique, the court even faulted the SEC for not accounting for a study submitted by the plaintiff, *Business Roundtable*, itself.⁶⁷

Though the decision never explicitly required QCBA, it censured the SEC for not establishing that the rule would have a “net benefit,”⁶⁸ a finding only possible through use of this methodology. Moreover, despite the absence of specific language, the opinion as a whole paints an unambiguous picture of the court’s high expectations, and, as a result, it has been universally interpreted as imposing QCBA mandate.⁶⁹

⁶¹ *Id.* (Quoting *Pub. Citizen v. Fed. Motor Carrier Safety Admin.*, 374 F.3d 1209, 1221 (D.C.Cir.2004)); *cf.* Kraus & Raso, *supra* note 17, at 302-303 (arguing that *Public Citizen* is inapt).

⁶² *See id.* at 136.

⁶³ *See id.* at 1147.

⁶⁴ Ahdieh, *supra* note 17, at 2007.

⁶⁵ *See Bus. Roundtable*, 647 F.3d at 1156.

⁶⁶ *Id.* at 1148–49.

⁶⁷ Kraus & Raso, *supra* note 17, at 314.

⁶⁸ *Bus. Roundtable*, 647 F.3d at 1153.

⁶⁹ *See, e.g.,* Coates, *supra* note 14, at 885 (reading *Business Roundtable* as mandating that the SEC “quantify the costs and benefits of its proposed rules”); Gordon, *supra* note 17, at S367; Posner & Weyl, *Paradigms in Financial Regulation*, *supra* note 17, at S-8; Cass R. Sunstein & Adrian Vermeule, *Libertarian Administrative Law*, 82 U. CHI. L. REV. 393, 438 (2015) (reading *Business Roundtable* as “imposing a presumptive obligation to perform quantified cost-benefit analysis”).

While the ruling has been widely criticized,⁷⁰ the case and the associated line of precedent have left their mark on SEC rulemaking.⁷¹ The fingerprints of these decisions are apparent in the SEC’s analysis of the Conflict Minerals Rule. Moreover, eight months after the holding in *Business Roundtable*, the SEC circulated an internal memorandum of rulemaking best practices that emphasized the need for QCBA. SEC staff are instructed to “monetize or otherwise quantify potential costs and benefits . . . whenever such quantification is practicable,”⁷² and to do so “even where the available data is imperfect and where doing so may require using estimates (including ranges of potential impact) and extrapolating from analogous situations.”⁷³

One might wonder whether the SEC gets any leniency in situations like the one here, where Congress explicitly directed it to fashion a certain rule. According to the internal memo, the answer is “no.” In these cases, it instructs the SEC to quantitatively assess “*both* those [costs and benefits] attributable to Congressional mandates *and* those that result from an exercise of the Commission’s discretion.”⁷⁴

Thus, when it came to the Conflict Minerals Rule, the SEC was put in an unenviable position. Congress had lobbed a controversial rule into its court—one certain to be challenged by industry—and it was the SEC’s job to not only flesh out its contours, but to craft a regulatory analysis of its costs and benefits, quantifying its results wherever remotely possible. The agency buckled.

III. THE SEC’S COST-BENEFIT ANALYSIS

The SEC’s release containing the final Conflict Minerals Rule included a 22-page “Economic Analysis” section, which, among other things, housed its QCBA.⁷⁵ The 22 pages contain, in the following order, a qualitative discussion of the benefits of the rule, a summary of the comments the SEC received with respect to the costs of the rule, a qualitative discussion of the costs and benefits of those aspects of the rule where the SEC exercised its rulemaking discretion, and finally, a “quantified assessment of overall economic effects,” in which the agency

⁷⁰ See Coates, *supra* note 14, at 917 n.116.

⁷¹ Congress has also put pressure on the SEC to conduct QCBA. See *id.* at 920–24.

⁷² *SEC Memorandum*, *supra* note 46, at 12.

⁷³ *Id.* at 13.

⁷⁴ *Id.* at 8 (emphasis in original).

⁷⁵ See SEC Final Rule, *supra* note 4, at 56,333–51.

set out its numerical estimate of compliance costs.⁷⁶ Our analysis focuses on the core components—the SEC’s consideration of benefits and costs—with an emphasis on fleshing out and critiquing the agency’s effort to quantify what industry would spend to comply with the new requirements.

A. The Benefits of the Conflict Minerals Rule

The SEC’s discussion of the rule’s benefits was sparse. It noted that Congress’s hope was that the rule would promote “peace and security” in the DRC region.⁷⁷ The agency did not attempt to quantify such benefits, however, arguing that it lacked the data to do so “with any precision.”⁷⁸ In further rationalizing its pithy analysis, the SEC also pointed out that the goals in this case were “quite different from the economic or investor protection benefits that [its] rules ordinarily strive to achieve”⁷⁹ and would not “necessarily generate measurable, direct economic benefits to investors or issuers.”⁸⁰

B. The Costs of the Conflict Minerals Rule

The SEC’s consideration of costs was far lengthier and far more quantitative. It briefly considered, but did not quantify, three potential indirect costs of the rule: a decrease in allocative efficiency, a decrease in capital flowing to companies subject to the rule (which the SEC thought would be insignificant), and an increase in the price of conflict minerals from areas outside the Congo region.⁸¹ The SEC’s focus, and where it quantified its efforts, was with respect to compliance costs.

Commentators submitted estimates to the SEC for initial compliance costs ranging from \$387 million to \$16 billion.⁸² As noted previously, the

⁷⁶ *Id.* at 56,350.

⁷⁷ *Id.* at 56,335.

⁷⁸ SEC Final Rule, *supra* note 4, at 56,335. The SEC similarly justified its qualitative discussion of the areas where it exercised its discretion, arguing that “reliable, empirical evidence . . . is not readily available to the Commission, and commentators did not provide sufficient information” on which to base a quantification effort. *Id.* at 56,342.

⁷⁹ *Id.* at 56,350.

⁸⁰ *Id.* at 56,335. Whether the rule generates material information to investors is the subject of academic debate. Compare Nelson, *supra* note 33, at 237–41 (arguing the Conflict Minerals Rule represents inherently material information) with Woody, *supra* note 6, at 1339 (arguing the opposite).

⁸¹ See SEC Final Rule, *supra* note 4, at 56,350–51.

⁸² See SEC Final Rule, *supra* note 4, at 56,351; Letter from Claigan Environmental Inc. to Mary L. Shapiro, Chairwoman of the Securities and Exchange Comm. (Dec. 16, 2011), <https://www.sec.gov/comments/s7-40-10/s74010-431.pdf>.

SEC settled on figures towards the lower end of this range: \$3 to \$4 billion.⁸³ To generate this estimate, the SEC relied almost exclusively on calculations submitted during the rulemaking process by the National Association of Manufactures (“NAM”)⁸⁴ and Tulane University’s Payson Center (“Tulane”).⁸⁵ The SEC argued that the NAM and Tulane estimates were appropriate benchmarks because the economic models on which they were based identified the categories of cost most often identified by commentators.⁸⁶ The agency also cryptically defended its reliance on the work of these commentators, asserting that the “the assumptions underlying their frameworks” were not “qualitatively different” from “discussions of costs” provided by other commentators.⁸⁷

To understand how the SEC derived its own cost estimate, the following sections describe the NAM and Tulane economic models, and then unpack how the SEC reengineered these models to generate its calculation. These sections translate and reorganize the jargony and opaque source documents; we present a linear discussion of each step in the analyses and the bases thereto. While our discussion digs deeply into the quantitative details, doing so is the only way to illustrate what the SEC did and where it went wrong.

In what follows, we use the term “issuer” to refer to a public company that is directly required to comply with the Conflict Minerals Rule by submitting disclosures to the SEC, and “supplier” to refer to members of such companies’ supply chains, which may incur costs because of their relationships with issuers. Although the nomenclature is imperfect, we use this terminology to stay consistent with the usage of these terms by Tulane, NAM, and the SEC.

⁸³ SEC Final Rule, *supra* note 4, at 56,351. The SEC also generated an estimate for ongoing compliance costs of between \$207 million and \$609 million per year. *Id.* at 56,354. Although these figures are not our focus, they are equally problematic. *See infra* note 200.

⁸⁴ Letter to the SEC, Initiatives under the Dodd-Frank Act, Special Disclosures Section 1502 (Conflict Minerals) File Number S7-40-102, The National Association of Manufacturers, 24–25 (Mar. 2, 2011) [hereinafter NAM Model].

⁸⁵ A CRITICAL ANALYSIS OF THE SEC AND NAM ECONOMIC IMPACT MODELS AND THE PROPOSAL OF A 3RD MODEL IN VIEW OF THE IMPLEMENTATION OF SECTION 1502 OF THE 2010 DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT, TULANE UNIVERSITY (Oct. 17, 2011), http://www.payson.tulane.edu/sites/default/files/3rd_Economic_Impact_Model-Conflict_Minerals.pdf [hereinafter Tulane Model].

⁸⁶ *See* SEC Final Rule, *supra* note 4, at 56,351.

⁸⁷ *Id.*

1. NAM's Compliance-Cost Estimate

NAM suggested that the Conflict Minerals Rule would cost the industry anywhere from \$9.4 billion to \$16 billion in the first year.⁸⁸ To reach its \$16 billion estimate, NAM juxtaposed the Conflict Minerals Rule against a 2006 European Union (“EU”) regulation that banned companies from selling new electronic and electrical equipment containing more than agreed levels of certain toxic materials on the EU market.⁸⁹ In the final-rule release, the SEC quickly—and correctly—dismissed this estimate. As the SEC noted, NAM failed to articulate why the EU’s mandate, which consists of a substantive intervention in the market, was analogous to the Conflict Minerals Rule’s disclosure mandate.⁹⁰

In contrast, the SEC paid an abundance of attention to NAM’s \$9.4 billion estimate, which NAM derived from an economic model of compliance costs. In general, NAM argued that, based on the SEC’s proposed rule, “all . . . affected issuers would have to make substantial changes to their corporate compliance policies and supply chain operating procedures.”⁹¹ To model the aggregate costs of these activities, NAM divided its estimate into five broad categories: (1) the costs of revising contracts with suppliers; (2) information technology (“IT”) system upgrade costs; (3) auditing costs; (4) information-verification costs; and (5) the costs incurred by small business.

i. The Cost of Revising Contracts with Suppliers

The first category in the NAM analysis is the cost associated with changing “legal obligations [with suppliers] to reflect [an issuer’s] new due diligence policy.”⁹² This seems to be a reference to step one of the *OECD Guidance*, which instructs companies to incorporate “a supply chain policy . . . into contracts and/or agreements with suppliers.”⁹³ To quantify the costs of making such changes, NAM considered four factors: (1) the number of issuers implicated by the rule; (2) the number of first-tier suppliers per

⁸⁸ See NAM Model, *supra* note 84, at 26–27.

⁸⁹ NAM cited a study by Technology Forecasters, Inc., finding that the EU directive cost each company, on average, \$2,640,000 to initially comply. *See id.* at 26. NAM multiplied this figure by 5,994, the number of issuers it presumed would be subject to the Conflict Minerals Rule (*see infra* text accompanying notes 94–95), to calculate total compliance costs of \$16 billion. *See id.* at 27.

⁹⁰ See SEC Final Rule, *supra* note 4, at 56,357 n.875.

⁹¹ NAM Model, *supra* note 84, at 23.

⁹² *Id.* at 24.

⁹³ OECD GUIDANCE, *supra* note 36, at 17.

issuer; (3) the number of employee hours involved in making the changes; and (4) the cost per employee hour.

NAM assumed that the Conflict Minerals Rule would impact 5,994 issuers.⁹⁴ This figure appears to have originated in the SEC’s discussion of the proposed rule. According to the SEC, it “arrived at this number by estimating the number of issuers that fall under all the SIC codes that our staff believes most likely to manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of products manufactured or contracted to be manufactured by those issuers”⁹⁵ The number is relied on by both NAM and Tulane, and is retained by the SEC in its final compilation.

To determine the number of suppliers per issuer, NAM “surveyed a cross section of its membership.”⁹⁶ Based on responses, NAM claimed that each company had “at least 2,000 first tier suppliers.”⁹⁷ This figure is relevant because each issuer would be required to change its contractual relationship with each of these suppliers to comply with the rule.

Finally, NAM estimated that it would take a minimum of two employee hours at \$50 per hour for an issuer to change its legal obligations with each supplier.⁹⁸ It ostensibly relied on the same survey, but did not say so explicitly. Aggregating these figures, NAM estimated that changing its contracts with first-tier suppliers would collectively cost the industry \$1.2 billion.

Step 1—Estimate Cost to Change Legal Obligations with First-Tier Suppliers:

$$5,994 \text{ issuers} * 2,000 \text{ suppliers} * 2 \text{ employee hours} \\ \text{per supplier} * \$50 \text{ per hour} = \$1,198,800,000^{99}$$

⁹⁴ NAM Model, *supra* note 84, at 23.

⁹⁵ Conflict Minerals, 75 Fed. Reg. 80,948, 80,977 n.176 (proposed Dec. 23, 2010) (to be codified at 17 C.F.R. pts. 229, 249b) [hereinafter SEC Proposed Rule].

⁹⁶ NAM Model, *supra* note 84, at 24.

⁹⁷ *Id.* In a footnote, NAM also cited a study by The Global Research Center for Strategic Supply Management at Arizona State University’s W.P. Carey School of Business. *See id.* at 24 n.2. NAM asserted that this study, the “2010 Supply Management Benchmarking Report,” concluded that companies have over 7,000 suppliers. *Id.* at 24, n.2. We located a study with this title, but it contained no such figure. In addition, we reviewed all relevant 2010 studies released by this organization. None reported this number. Efforts to follow up with both Arizona State University and NAM were similarly unavailing.

⁹⁸ *Id.* at 24.

⁹⁹ *See id.*

ii. IT System Upgrade Costs

Next, NAM projected that issuers would incur IT system upgrade costs to “maintain auditable records for the SEC.”¹⁰⁰ These IT systems would need to be able “to track, store, and exchange data regarding mineral origins” from issuer suppliers.¹⁰¹ Additionally, because of the global scale of a typical issuer supply chain, the IT system would need to be able to have “high storage capacities, and advanced communication, and data transfer functionalities.”¹⁰² NAM relied on two figures to determine IT-upgrade costs: the number of issuers and the average cost per issuer of an IT-system upgrade.

With respect to the former, NAM continued to use the estimate that 5,994 issuers would be implicated by the rule.¹⁰³ It then argued that, “based on previous changes to supply chain computer systems,” on average, an issuer is likely to spend anywhere from \$1 million to \$25 million, depending on the “size and complexity” of the issuer’s supply chain, to update an IT system.¹⁰⁴ NAM gave no further explanation regarding this range, and settled on \$1 million per issuer as a “conservative estimate,” for a total industry cost of roughly \$6 billion.¹⁰⁵

Step 2—Estimate Cost to Upgrade IT System:

$$5,994 \text{ issuers} * \$1,000,000 \text{ per issuer} = \\ \$5,994,000,000^{106}$$

iii. Information-Verification Costs

In addition to changing relationships with suppliers and upgrading IT systems, NAM stated that issuers would also need to create processes to verify “that suppliers are providing credible information.”¹⁰⁷ NAM, without explanation, estimated that it would take a half hour of employee time per supplier at a rate of \$50 per hour to ensure supplier credibility.¹⁰⁸ Building

¹⁰⁰ *Id.* at 22.

¹⁰¹ *Id.* at 24.

¹⁰² *Id.*

¹⁰³ *Id.* at 25.

¹⁰⁴ *Id.* at 24–25.

¹⁰⁵ *Id.* at 25.

¹⁰⁶ *See id.* at 24–25.

¹⁰⁷ *Id.* at 25.

¹⁰⁸ *See id.*

on previous assumptions, verifying supplier information would, therefore, cost the industry about \$300 million.

Step 3—Estimate Information-Verification Cost:

$$5,994 \text{ issuers} * 2,000 \text{ suppliers per issuer} * .5 \\ \text{employee hours per supplier} * \$50 \text{ per hour} = \\ \$299,700,000^{109}$$

iv. Audit Costs

As noted above, the rule requires that all issuers unable to verify that their conflict minerals originate from mines outside of the Congo region submit and audit a CMR.¹¹⁰ To determine the industry-wide audit cost, NAM relied on two figures: the number of issuers that would be required to comply with the CMR mandate, and the audit cost per issuer.

NAM suggested that about 75%, or 4,500 of the approximately 6,000 implicated issuers, would be subject to the audit requirement.¹¹¹ To back this up, NAM argued that, because an “overwhelming proportion of issuers” do not have the “information infrastructure” to trace their minerals back to the source (whether inside or outside the Congo), they would be required to complete a CMR.¹¹² NAM projected that, at a minimum, an audit would cost each issuer \$100,000,¹¹³ this based on estimates by NAM members and conversations with “several auditing firms and companies that use audits.”¹¹⁴ Based on these assumptions, NAM estimated that the total audit cost for all affected issuers would be \$450 million.

Step 4—Estimate CMR Audit Costs:

$$6,000 \text{ issuers} * 75\% \text{ (percentage of issuers that must} \\ \text{audit)} * \$100,000 \text{ per audit} = \$450,000,000^{115}$$

¹⁰⁹ *See id.* at 25.

¹¹⁰ *See supra* note 35 and accompanying text.

¹¹¹ NAM Model, *supra* note 84, at 25.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *See id.*

v. Effect on Small Business

NAM also sought to call the SEC’s attention to the rule’s impact on small business, in particular, small- and mid-sized manufacturers. According to NAM, “a large portion of America’s 278 thousand small and medium-sized manufactures could be affected by the requirement to provide information on the origin of the minerals . . . they supply to [issuers] subject to the SEC.”¹¹⁶ While NAM hypothesized that the Conflict Minerals Rule would impose the same due diligence on these companies as issuers directly subject to the regulatory mandate,¹¹⁷ it did not pursue this line of thinking in its model.

Instead, it provided an estimate for the audit costs these companies would incur. Like the audit cost estimate above, NAM’s calculation in this case required two figures: the number of implicated small- and medium-sized manufactures, and the audit cost for each of these entities.

Without providing a rationale, NAM argued that one-in-five out of the aforementioned 278,000 companies would be impacted.¹¹⁸ NAM then stated that an audit would cost these companies \$25,000 each.¹¹⁹ This was the SEC’s original estimate, in the proposed rules, for what it would cost issuers to conduct the CMR-mandated audit.¹²⁰ NAM reasoned that, while this figure was incorrect for issuers directly subject to the rules, it was appropriate for small- and medium-sized manufacturers.¹²¹ Putting these figures together, NAM projected that the cost borne by small- and medium-sized manufacturers “could easily be \$1.4 billion in the aggregate.”¹²²

Step 5—Cost to Small- and Medium-Sized Manufacturers in Issuer Supply Chains:

278,000 small- and medium-sized manufacturers *
 20% (percent of these firms implicated by the rule) *
 \$25,000 per audit = \$1,390,000,000¹²³

¹¹⁶ *Id.* at 25–26.

¹¹⁷ *Id.* at 26.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

¹²³ *See id.*

The diagram below breaks down NAM’s economic model by each cost category.

NAM’s Economic Model

<u>Cost Category</u>	<u>Calculations</u>
Updating Supplier Contractual Relationships	\$1,198,800,000
IT System Upgrades	\$5,994,000,000
Information-Verification Costs	\$299,700,000
Audit Costs	\$450,000,000
Effect on Small Business	\$1,390,000,000
<i>Total Cost</i>	<i>\$9,332,500,000</i>

2. Tulane’s Compliance-Cost Estimate

At the behest of Senator Durbin’s office, Tulane also submitted a model of potential costs to the SEC in the comment phase of the rulemaking.¹²⁴ Tulane’s model is framed as a response to NAM, and is more sophisticated in that it attempts to distinguish between large and small issuers and suppliers, and between services performed in-house versus those performed by consultants. Tulane estimated that the Conflict Minerals Rule would initially cost the industry \$7.93 billion.¹²⁵ Tulane’s model breaks costs down into four broad categories, which are similar, but not identical, to NAM’s: (1) issuer due-diligence costs, (2) supplier due-diligence costs, (3) issuer audit costs, and (4) IT system upgrade costs.

i. Issuer Due-Diligence Costs

Tulane envisioned that due diligence under the Conflict Minerals Rule would require issuers to “review and revise a wide range of internal policies.”¹²⁶ In its view, due diligence would involve “multiple tasks,” including reviewing procurement policies, developing and drafting a compliance plan, testing the adequacy of the compliance plan, training employees, and communicating compliance expectations to suppliers.¹²⁷ To formulate its estimate of due-diligence cost, Tulane relied on three figures:

¹²⁴ Tulane Model, *supra* note 85, at 16. Senator Durbin was a supporter of the rule. See 156 Cong. Rec. S3817 (May 17, 2010).

¹²⁵ Tulane Model, *supra* note 85, at 35.

¹²⁶ *Id.* at 14.

¹²⁷ *See id.*

(1) the number of issuers implicated by the rule; (2) the employee hours required for diligence activities; and (3) the cost per employee hour.

Like NAM, Tulane accepted the SEC's suggestion that 5,994 issuers would be subject to the rule.¹²⁸ Tulane argued, however, that small and large issuers would incur significantly different compliance costs, and should therefore be considered separately. Tulane relied on a 2011 IPC survey to break up issuers by size.¹²⁹ This survey went to 3,839 of IPC's members, which were all part of the "electronic interconnect supply chain."¹³⁰ According to IPC, "[t]he industry segments [represented] . . . include electronics manufacturing services companies, printed circuit boards fabricators, materials suppliers and equipment suppliers."¹³¹ IPC received 60 responses to its survey, 18 of which were from public companies.¹³²

In its report, IPC categorized respondents by size: 32% were companies with less than \$10 million in sales, 40% were companies with between \$10 million and \$99 million in sales, 18% were companies with sales between \$100 million and \$1 billion, and 10% were companies with sales greater than \$1 billion.¹³³ Tulane added the first two categories together and the last two categories together, and argued that, out of the 5,994 issuers implicated, 72% would be small- and medium-sized issuers, and 28% would be large issuers.¹³⁴

Next, Tulane calculated the cost each issuer would incur. Tulane estimated, based on "information available from various experts in the industry (as well as [Tulane's] own experiences in other sectors/studies)," that it would take a small issuer 40 hours to comply and a large issuer 100 hours.¹³⁵ In each case, Tulane estimated \$50 per hour for internal employee time. Additionally, Tulane expected that third-party consultants would be relied on to facilitate the due-diligence process. Tulane estimated consulting firms would charge \$200 per hour, with small issuers using consultants 25% of the time, and large issuers using consultants only 10% of the time.¹³⁶

¹²⁸ *See id.* at 7.

¹²⁹ IPC is a global trade association that serves the printed board and electronic assembly industries. *See* IPC.org, About, <http://www.ipc.org/ContentPage.aspx?Pageid=IPC> (last visited Aug. 7, 2015).

¹³⁰ Comments on SEC Proposed Rule on Conflict Minerals, IPC—Association Connecting Electronics Industries, Appendix A, at 1 (Mar. 2, 2011) [hereinafter IPC Survey].

¹³¹ *Id.* (abbreviations following industry-segment names omitted).

¹³² *See id.* at 1–2 (reporting that 30% of its 60 respondents were public companies).

¹³³ *Id.* at 3.

¹³⁴ *See* Tulane Model, *supra* note 85, at 12.

¹³⁵ *Id.* at 14.

¹³⁶ *Id.* at 17.

While Tulane provided no explanation for the \$50 figure, it implied that the \$200 figure was an average, reflecting the rates of both “Big 4 accounting firms” and “lower cost environmental and sustainability consulting firms,” each of which Tulane presumed would perform compliance tasks.¹³⁷ The ratios for tasks performed in-house versus those done by consultants was partially based on an SEC estimate in the proposed rules. The SEC estimated that all issuers would outsource 25% of compliance;¹³⁸ Tulane used this figure for small issuers, provided no explanation for limiting it as such, and provided no explanation for its 10% estimate for large issuers (Tulane, in fact, implied that both figures were from the SEC).¹³⁹

Compiling these figures, Tulane theorized that issuers would incur \$26,013,960 in due-diligence costs.¹⁴⁰

Step 1—Estimate the Cost of Issuer Due Diligence:

Cost to Small Issuers:

Internal Compliance Costs: 5,994 issuers * 72% small
issuers * 40 hours per issuer * 75% of compliance workload
* \$50 per hour = \$6,473,520

Consultant Compliance Costs: 5,994 issuers * 72% small
issuers * 40 hours * 25% of compliance workload * \$200 per
hour = \$8,631,360

Total for Small Issuers: \$15,104,880

¹³⁷ See *id.* at 14 n.38. Tulane implied that the \$200 figure was loosely based on SEC estimates. See *id.* at 14 n.38. In the proposed rule, the SEC assumed that “professionals” hired to aid in compliance would charge \$400 per hour. See SEC Proposed Rule, *supra* note 95, at 80,966. While the SEC clarified in the final rule that \$400 represented cost per attorney hour, see SEC Final Rule, *supra* note 4, at 56,358 n.896, Tulane cited it as the cost per hour for “Big 4 accounting firms.” Tulane Study, *supra* note 85, at 14 n.38. Its lower estimate, \$200, is an attempt to account for the probable role of less expensive specialty consultants in addition to the traditional firms. Tulane provided no estimate for the amount specialty firms would charge or for the share of the workload they would carry.

¹³⁸ SEC Proposed Rule, *supra* note 95, at 80,966. The SEC provided no basis for this assumption.

¹³⁹ See Tulane Model, *supra* note 85, at 17.

¹⁴⁰ *Id.*

Cost to Large Issuers:

Internal Compliance Costs: 5,994 issuers * 28% large issuers * 100 hours * 90% of compliance workload * \$50 per hour = \$7,552,440

Consultant Compliance Costs: 5,994 issuers * 28% large issuers * 100 hours * 10% of compliance workload * \$200 per hour = \$3,356,640

Total for Large Issuers: \$10,909,080

Total Issuer Due-Diligence Cost: \$26,013,960¹⁴¹

ii. Supplier Due-Diligence Costs

Tulane focused only on first-tier suppliers. Its model implicitly assumed that first-tier suppliers would engage in the same diligence as issuers.¹⁴² To derive their costs, Tulane relied on three inputs: (1) the number of first-tier suppliers in an issuer's supply chain; (2) the number of hours each of these suppliers would spend on diligence; and (3) the cost per hour.

Tulane engaged in a complex exercise to infer the number of first-tier suppliers. Tulane began with NAM's estimate for this figure—2,000. Tulane pointed out, however, that NAM's number included *all* suppliers, not just conflict-mineral suppliers.¹⁴³ Since suppliers of other items would not incur costs in connection with the rule, Tulane appropriately concluded that they should not be counted.¹⁴⁴ To drill down on only relevant suppliers, Tulane again turned to the IPC survey.¹⁴⁵

IPC broke down suppliers into three groups: those its respondents (1) knew dealt in conflict minerals, (2) knew did not deal in conflict minerals, and (3) were unable to categorize.¹⁴⁶ Its analysis reported both aggregate results and results broken down into the industry segments noted above.¹⁴⁷ For unexplained reasons, rather than use the aggregate figures,

¹⁴¹ *See id.* at 17.

¹⁴² *See id.* at 18. As discussed *infra* Part IV.A, this assumption is unfounded.

¹⁴³ *See id.* at 14.

¹⁴⁴ *See id.* at 16.

¹⁴⁵ Tulane explained its continued reliance on this survey as arising out of "the absence of *other* credible, relevant and authoritative data." *Id.* (emphasis added). As we argue *infra* Part IV.B., we disagree that the IPC survey satisfies such criteria.

¹⁴⁶ *See* IPC Survey, *supra* note 130, at 4.

¹⁴⁷ *See id.* at 4–6.

Tulane averaged the industry-segment figures to derive the following numbers from the survey: roughly 46% of suppliers do not deal in conflict minerals, roughly 35% of suppliers deal in conflict minerals, and roughly 18% of suppliers may or may not deal in conflict minerals.¹⁴⁸ Adding up the latter two categories, Tulane argued that only 53% of NAM’s estimated 2,000 first-tier suppliers, 1,060, would provide conflict minerals, thus triggering supplier due-diligence costs.¹⁴⁹

To complicate matters further, Tulane only used the 1,060-supplier input for large issuers. Arguing that this number was “not likely to be representative of small [issuers],” Tulane turned again to the IPC survey.¹⁵⁰ IPC reported that respondents had a median number of 163 first-tier suppliers.¹⁵¹ Tulane used this as an estimate for the number of small-issuer suppliers, then, applying the same logic as above, argued that only 53% of the 163 would deal in conflict minerals and thus incur compliance costs.¹⁵² Therefore, under Tulane’s model, small issuers were presumed to have 86 relevant first-tier suppliers.¹⁵³ Tulane used the same small issuer/large issuer breakdown in determining how many of the 5,994 implicated issuers had 1,060 versus 86 suppliers. These steps are summarized below:

Step 2a—Estimate the Number of First-Tier Conflict-Mineral Suppliers:

Small Issuers: 5,994 issuers * 72% small issuers * 86 suppliers = 371,148

Large Issuers: 5,994 issuers * 28% large issuers * 1,060 suppliers = 1,799,019¹⁵⁴

Tulane did not stop there, however. To its credit, Tulane recognized that some issuers share suppliers and that issuer/supplier “connectivity is more complex than a simple 1-to-1 relationship.”¹⁵⁵ Tulane expected that a “supplier with multiple customers [would] not have to expend 100% of the

¹⁴⁸ See Tulane Model, *supra* note 85, at 16.

¹⁴⁹ See *id.* at 16–17.

¹⁵⁰ *Id.* at 13.

¹⁵¹ IPC Survey, *supra* note 130, at 20.

¹⁵² See Tulane Model, *supra* note 85, at 17. Again, it would have made more sense for Tulane to use a figure based on IPC’s aggregate calculations rather than the one it artificially derived. See *supra* text accompanying note 148.

¹⁵³ See Tulane Model, *supra* note 85, at 17.

¹⁵⁴ See *id.*

¹⁵⁵ *Id.*

CMR program development costs repetitively” for each of its issuer customers.¹⁵⁶ In other words, a supplier may be in the supply chain of three issuers, but it would only perform diligence once. Using the number of issuers per supplier misses this point, and therefore leads to an overestimate of due-diligence costs. To correct for what Tulane labeled “supplier overlap/mutuality,” it applied a 60% overlap factor.¹⁵⁷ This translates to an assumption that each supplier shows up in about two issuers’ supply chains. The effect is to discount the number of suppliers by 40%.¹⁵⁸ Tulane provided no support for this figure.¹⁵⁹

Step 2b—Apply the Supplier Overlap Factor:

Number of Suppliers for Small Issuers: 371,148 suppliers * 40% overlap discount = 148,459

Number of Suppliers for Large Issuers: 1,799,019 suppliers * 40% overlap discount = 711,607

Total Number of Suppliers: 860,066¹⁶⁰

To complete the calculation, Tulane needed figures for the number of hours required to comply and the cost per hour. For these, Tulane maintained the same assumptions for suppliers as it did for issuers: 40 hours for a small supplier and 100 hours for a large supplier (at \$50 per hour), with small suppliers utilizing consultants for 25% of the work and large suppliers utilizing consultants for 10% (at \$200 per hour in each case).¹⁶¹ Tulane also implicitly assumed that suppliers of small issuers are also small companies and that suppliers of large issuers are large companies.¹⁶² With

¹⁵⁶ *Id.* at 12–13.

¹⁵⁷ *Id.* at 12, 18.

¹⁵⁸ *Id.* at 14–15.

¹⁵⁹ Tulane explained only as follows: “Since NAM, SEC and IPC did not provide data on the amount of supplier overlap/mutuality, we based on our estimation that in general there is likely to be greater than a 50% customer overlap/mutuality throughout the supply chain, we chose 60% as a conservative overlap factor.” Tulane Model, *supra* note 85, at 18.

¹⁶⁰ *See id.* at 18–19.

¹⁶¹ *Id.* at 18.

¹⁶² Tulane’s assumption inflates its estimate. The result is that only about 17% of suppliers are considered small companies (148,459/860,066). This is wholly without basis and is counter to the 72%/28% small issuer/large issuer breakdown that Tulane uses throughout the remainder of its analysis.

this amalgamation of numbers in mind, Tulane estimated that suppliers would spend \$5,145,052,000 to comply with the rule.¹⁶³

Step 2c—Estimate the Cost of Supplier Due Diligence:

Costs to Suppliers of Small Issuers:

Internal Compliance Costs: 148,459 suppliers * 40 employee hours * 75% of compliance workload * \$50 per hour = \$222,688,500

External Compliance Costs: 148,459 suppliers * 40 employee hours * 25% of compliance workload * \$200 per hour = \$296,918,000

Total Cost to Small-Issuer Suppliers: \$519,606,500

Costs to Suppliers of Large Issuers:

Internal Compliance Costs: 711,607 suppliers * 100 employee hours * 90% of compliance workload * \$50 per hour = \$3,202,231,500

Consultant Compliance Cost: 711,607 suppliers * 100 hours * 10% of compliance workload * \$200 per hour = \$1,423,214,000

Total Cost to Large-Issuer Suppliers: \$4,625,445,500

Total Supplier Compliance Cost: \$5,145,052,000¹⁶⁴

iii. Issuer Auditing Costs

Unlike NAM, Tulane postulated on what would be involved in a CMR audit. It argued that the audit would assess the “internal processes” set up by the regulated entities to investigate their supply chains, and how information obtained is “used and reported.”¹⁶⁵ Tulane also argued, however, that the nature of the audit would be “highly dependent on the

¹⁶³ See Tulane Model, *supra* note 85, at 19.

¹⁶⁴ See *id.* at 18–19.

¹⁶⁵ *Id.* at 22.

complexity of the issuer’s management systems,”¹⁶⁶ which would vary in accordance with issuer size. Tulane’s quantification of audit costs required only an assessment of the following: (1) the number of issuers subject to the CMR audit requirement; and (2) the audit cost per issuer.

Tulane accepted, without discussion, NAM’s estimate that 75% of the implicated issuers, about 4,500 companies, would be required to complete a CMR, and therefore comply with the audit requirement.¹⁶⁷ In terms of cost, Tulane again agreed with NAM. Finding NAM’s numbers “reasonable,”¹⁶⁸ Tulane argued that an audit would cost a small issuer about \$25,000 and a large issuer about \$100,000.¹⁶⁹ Tulane applied the same small issuer/large issuer weight that it derived from the IPC survey—72%/28%—to its audit calculation.¹⁷⁰ Based on these figures, Tulane estimated that the industry could expect to spend \$207,000,000 on CMR auditing.

Step 3—Estimate Issuer Audit Costs:

Small Issuer: 4,500 issuers * 72% small issuers *
\$25,000 per CMR audit = \$81,000,000

Large Issuer: 4,500 issuers * 28% large issuers *
\$100,000 per CMR audit = \$126,000,000

Total Audit Cost: \$207,000,000¹⁷¹

iv. IT System Upgrade Costs

Finally, Tulane contended that NAM ignored size and complexity differences in corporate supply chains when it calculated potential IT-upgrade costs.¹⁷² Tulane posited that larger issuers would use highly sophisticated enterprise systems to manage complex conflict-mineral supply chains, while smaller issuers would turn to simpler alternatives.¹⁷³ Tulane also argued that NAM did not account for “shared software solutions and shared product information platforms” that would mitigate the technology

¹⁶⁶ *See id.* (emphasis omitted).

¹⁶⁷ *See id.* at 21–22.

¹⁶⁸ *Id.* at 22.

¹⁶⁹ *Id.*

¹⁷⁰ *See id.*

¹⁷¹ *See id.* at 22.

¹⁷² *See id.* at 23–24.

¹⁷³ *See id.*

costs incurred by issuers.¹⁷⁴ Here, only two inputs were needed: (1) the number of issuers; and (2) the cost per IT-system upgrade.

Tulane continued to rely on the estimate of 5,994 impacted issuers and on its 72%/28% split between large and small companies.¹⁷⁵ For cost, Tulane again turned to the IPC survey and NAM. In the IPC questionnaire, respondents were asked about “hidden costs,” and it appears that seven responded with numbers for IT upgrades.¹⁷⁶ These estimates ranged from \$12,500 to \$750,000.¹⁷⁷ Tulane took the average of the survey responses, \$205,000, and used this figure to estimate the cost for smaller issuers.¹⁷⁸ For larger issuers, it used, without explanation, NAM’s \$1 million estimate.¹⁷⁹ These numbers led Tulane to conclude that IT upgrades would cost the industry \$2,563,034,400.

Step 4—Estimate Issuer IT System Upgrade Cost:

Small Issuers: 5,994 issuers * 72% small issuers *
\$205,000 in IT upgrades = \$884,714,400

Large Issuers: 5,994 issuers * 28% large issuers *
\$1,000,000 in IT upgrades = \$1,678,320,000

Total Cost: \$2,563,034,400¹⁸⁰

The diagram below breaks down Tulane’s final calculation of the total cost of the Conflict Minerals Rule.

Tulane’s Economic Model

<u>Cost Category</u>	<u>Calculation</u>
Issuer Due Diligence	\$26,013,960
Supplier Due Diligence	\$5,145,052,000
Audit Cost	\$207,000,000

¹⁷⁴ *Id.* at 24.

¹⁷⁵ *Id.*

¹⁷⁶ See IPC Survey, *supra* note 130, at 9–10.

¹⁷⁷ *Id.* at 21.

¹⁷⁸ Tulane Model, *supra* note 85, at 24. Some respondents provided ranges or lumped IT costs with others, see IPC Survey, *supra* note 130, at 10–11; it is unclear how Tulane used such figures to reach its average of \$205,000.

¹⁷⁹ See Tulane Model, *supra* note 85, at 24.

¹⁸⁰ See *id.*

IT-System Upgrades	\$2,563,034,400
<i>Total Cost</i>	<i>\$7,938,065,960</i>

3. The SEC's Modifications to Tulane's and NAM's Models

Although frequently presented as the SEC's \$3–\$4 billion estimate, the agency did little independent analysis on the costs of the Conflict Minerals Rule. Instead, it combined the NAM and Tulane models. The low end of the range is based on Tulane's model (modified to include aspects of NAM's model); the high end is based on NAM's (modified to include aspects of Tulane's). This section will first outline the individual modifications that the SEC made to the Tulane and NAM models to create the hybrid versions. It will then show how the changes led to the SEC's cost estimate. By altering just two inputs—the cost of IT upgrades and the number of suppliers—the SEC cut the commentators' estimates by more than half.

i. Modifying the Cost of IT Upgrades in Tulane's and NAM's Models

The SEC disagreed with how Tulane and NAM estimated the cost of upgrading IT systems.¹⁸¹ While the agency concurred with Tulane that a small issuer could expect to expend \$205,000, it did not accept that a large issuer would spend several times that amount.¹⁸² Instead, the SEC presumed, without further explanation, that a large issuer would incur a cost double that of a small issuer, \$410,000, to upgrade its IT systems to comply with the rule.¹⁸³ As shown below, with changed inputs and outputs in italics, the SEC plugged this figure into Tulane's pre-existing IT-upgrade calculations for large issuers.

Modifying Tulane's Step 4—Estimated Issuer IT System Upgrade Cost:

*Small Issuers: 5,994 total issuers * 72% small issuers *
\$205,000 in IT upgrades = \$884,780,000*

*Large Issuers: 5,994 total issuers * 28% large issuers *
\$410,000 in IT upgrades = \$687,980,000*

¹⁸¹ See SEC Final Rule, *supra* note 4, at 56,351–52.

¹⁸² *Id.*

¹⁸³ *Id.*

Total Cost: \$1,572,760,000¹⁸⁴

The SEC then divided this total cost of approximately \$1.5 billion by the total number of issuers estimated to be impacted by the rule, 5,994, to reach an average IT-upgrade cost of \$250,000.¹⁸⁵ It then replaced NAM's estimate that it would cost \$1 million per issuer to upgrade IT systems with this new figure.

Modifying NAM's Step 2—Estimated Cost to Upgrade IT System:

*\$250,000 average IT-upgrade cost * 5,994 issuer =
\$1,498,500,000*¹⁸⁶

These modifications caused the models' estimates to converge at around \$1.5 billion.¹⁸⁷

ii. Modifying NAM's Supplier-Number Estimate

The SEC argued that the number of first-tier suppliers was much lower than NAM's estimate of 2,000.¹⁸⁸ It derived a lower number through the following analysis:

[T]he average number of suppliers per company in the [IPC Study] is only 163 . . . [NAM] maintains, however, that many of its members have well over 2,000 suppliers. We do think a prudent reduction in . . . [NAM's] estimate is warranted, but . . . we do not know that 163 is any more representative of an average company's experience. Thus, we use [Tulane's] estimate of 1,060 suppliers while employing [NAM's] analysis.¹⁸⁹

As noted above, Tulane created this 1,060 figure by multiplying NAM's supplier estimate by 53%, its calculation for the percentage of all suppliers that supplied or may have supplied conflict minerals to those firms that

¹⁸⁴ See *id.* at 56,354.

¹⁸⁵ *Id.*

¹⁸⁶ See *id.* at 56,353.

¹⁸⁷ *Id.* at 56,352.

¹⁸⁸ See *id.*

¹⁸⁹ *Id.*

responded to the IPC survey.¹⁹⁰ The SEC does not appear to choose it for this purpose, however, but because it falls about half-way between 2,000 and 163. This modification results in two changes to NAM’s model:

Modifying NAM Step 1—Estimated Cost to Change Legal Obligations with Suppliers:

$$2 \text{ employee hours} * \$50 \text{ per hour} * 1,060 \text{ suppliers} * 5,994 \text{ issuers} = \$635,364,000^{191}$$

Modifying NAM Step 3—Estimated Information-Verification Costs:

$$.5 \text{ employee hours} * 1,060 \text{ suppliers} * \$50 \text{ per hour} * 5,994 \text{ issuers} = \$158,841,000^{192}$$

iii. Modifying Tulane’s Supplier-Number Estimate

The SEC also disagreed with Tulane’s methodology for calculating the number of suppliers.¹⁹³ As discussed above, Tulane started with NAM’s estimate of first-tier suppliers, then discounted it to reflect, among other things, suppliers appearing in multiple supply chains.¹⁹⁴ The SEC argued that this “top down” approach generated an unreasonably high total, and that it would be simpler to count the number of conflict-mineral suppliers.¹⁹⁵

For this, it turned to NAM’s 278,000 figure. This was NAM’s estimate for the number of U.S. small- and medium-sized manufacturers,¹⁹⁶ but the SEC refashioned it as an estimate for the number of first-tier suppliers for use in Tulane’s model.¹⁹⁷ It provided no explanation for this transmogrification, except to say that NAM’s figure approximately matched other estimates for the number of manufacturers.¹⁹⁸ Before plugging this number into Tulane’s model, the SEC also applied Tulane’s 72%/28% issuer size breakdown to conclude that there are 200,160 suppliers to small

¹⁹⁰ See text accompanying *supra* note 149.

¹⁹¹ See SEC Final Rule, *supra* note 4, at 56,353.

¹⁹² See *id.*

¹⁹³ See *id.* at 56,352.

¹⁹⁴ See *supra* Part III.B.2.ii.

¹⁹⁵ See SEC Final Rule, *supra* note 4, at 56,352.

¹⁹⁶ NAM Model, *supra* note 84, at 25–26.

¹⁹⁷ See SEC Final Rule, *supra* note 4, at 56,353.

¹⁹⁸ See *id.* at 56,352–53.

issuers and 77,840 suppliers to large issuers.¹⁹⁹ These modifications resulted in the following changes to Tulane’s estimate of supplier costs:

Modifying Tulane Step 2—Estimated Costs of Supplier Due Diligence:

Costs of Suppliers to Small Issuers:

*Internal Compliance Costs: 200,160 suppliers * 40 employee hours * 75% of compliance workload * \$50 per hour = \$300,240,000*

*Consultant Compliance Costs: 200,160 suppliers * 40 employee hours * 25% of compliance workload * \$200 per hour = \$400,320,000*

Total Compliance Cost for Small-Issuer Suppliers: \$700,560,000

Costs of Suppliers to Large Issuers:

*Internal Compliance Costs: 77,840 suppliers * 100 employee hours * 90% of compliance workload * \$50 per hour = \$350,280,000*

*Consultant Compliance Costs: 77,840 suppliers * 100 employee hours * 10% of compliance workload * \$200 per hour = \$155,680,000*

Total Compliance Cost for Small-Issuer Suppliers: \$505,960,000

*Total Supplier Diligence Cost: \$1,206,520,000*²⁰⁰

iv. The Resulting SEC Estimate

Despite pages of confusing prose, all the SEC did was modify a couple of inputs in NAM’s and Tulane’s models, and then feed those new inputs back into the appropriate equations. Below are two diagrams that

¹⁹⁹ See *id.* at 56,354.

²⁰⁰ See *id.* at 56,354. As noted *supra* note 83, the SEC also estimated ongoing compliance costs of between \$207 million and \$609 million per year. The former is Tulane’s audit-cost estimate and the latter is a combination of NAM’s audit-cost estimate and its information-verification cost estimate. See *id.* As shown in Appendix A, discussed *infra* note Part IV.B., the figures on which the SEC relied are baseless.

describe the competing models after the SEC's reengineering. These changes result in the SEC's \$3–\$4 billion estimate.²⁰¹

*Tulane's SEC-Modified Economic Model
(The Low End of the SEC's Estimate)*

<u>Cost Category</u>	<u>Calculation</u>
Issuer Due Diligence	\$26,013,960
Supplier Due Diligence	\$1,206,520,000
Audit Cost	\$207,000,000
IT-System Upgrades	\$1,572,760,000
<u>Total Cost</u>	<u>\$3,012,293,000</u>

*NAM's SEC-Modified Economic Model
(The High End of the SEC's Estimate)*

<u>Cost Category</u>	<u>Calculation</u>
Updating Supplier Contractual Relationships	\$635,364,000
Information-Verification Costs	\$158,841,000
Audit Costs	\$450,000,000
IT System Upgrade Costs	\$1,498,500,000
Effect on Small Business ²⁰²	\$1,390,000,000
<u>Total Cost</u>	<u>\$4,132,705,000</u>

IV. CRITICISMS OF THE SEC'S QUANTIFICATION OF COMPLIANCE COSTS

It is easy to get lured in by the impressive chorus of equations, but do not be fooled. The length and complexity of the SEC's compliance-cost analysis and the commentator models on which it is based are a distraction. Ultimately, the SEC's estimate boils down to mere speculation. It retained inputs from Tulane and NAM that were not linked to actual legal requirements or were otherwise baseless, and the changes the SEC made to NAM's and Tulane's models were at best intuitive and at worst arbitrary.

²⁰¹ *See id.*

²⁰² As discussed *infra* text accompanying note 206, the SEC labeled this category, "Smaller Supplier Due Diligence," which inaccurately reflects how this input is described in NAM's model.

A. Mismatch Between Cost Categories and Legal Requirements

Although most of NAM's and Tulane's inputs regarding what companies would be required to do under the Conflict Minerals Rule mapped, at least loosely, onto the actual legal requirements, there were some important and puzzling anomalies. Most problematic is that both NAM and Tulane assumed that suppliers would take compliance steps that the rule did not contemplate. NAM's model speculated that small- and medium-sized manufactures in the supply chains of issuers subject to the rule would be required to incur \$25,000 in audit costs.²⁰³ But the rule does not impose an audit requirement on suppliers.²⁰⁴ This accounts for \$1.39 billion of NAM's estimate.²⁰⁵ Rather than point this out and dismiss the calculation, the SEC included it and mischaracterized NAM's figure as one reflecting "Smaller Supplier Due Diligence," and as an estimate for "providing information regarding the source of minerals."²⁰⁶

Tulane, for unexplained reasons, speculated that first-tier suppliers would incur the same due-diligence costs as issuers directly subject to the rule.²⁰⁷ Members of corporate supply chains, though, are not required to conduct due diligence. In fact, the rules impose no legal requirements on them. While it could be anticipated that suppliers would incur some cost to the extent they choose to assist issuers that are investigating their supply chain pursuant to their own obligations, supplier efforts would almost certainly pale in comparison to those of issuers. Even though Tulane's due-diligence assumption is certainly inaccurate, it accounts for over \$5.1 billion of Tulane's original \$8 billion estimate.²⁰⁸ The SEC's modification reduces this figure to \$1.2 billion, but this is owing to the agency's difference of opinion as to the number of suppliers.²⁰⁹ The SEC pays no attention to the substantive mistake.

Returning to NAM, its model was also strangely under-inclusive. It did not include an estimate for issuer due diligence, only the cost of "revis[ing] legal obligations with first-tier suppliers."²¹⁰ The due diligence demanded by the rule, however, is far more than changing legal relationships.²¹¹ Instead of addressing this modeling error, the SEC again

²⁰³ See NAM Model, *supra* note 84, at 25–26.

²⁰⁴ See *supra* Part II.

²⁰⁵ NAM Model, *supra* note 84, at 26.

²⁰⁶ See SEC Final Rule, *supra* note 4, at 56,353 & n.840.

²⁰⁷ See *supra* Part III.B.2.ii.

²⁰⁸ See *supra* Part III.B.2.ii.

²⁰⁹ See *supra* Part III.B.3.iii.

²¹⁰ NAM Model, *supra* note 84, at 24.

²¹¹ See *supra* Part II.

mischaracterized NAM’s analysis, referring to NAM’s estimate for changing obligations with suppliers as a figure for “Issuer Due Diligence Reform.”²¹² Nor did NAM include an estimate for supplier due diligence. NAM mistakenly included audit costs for one set of suppliers, small- and medium sized manufacturers (which, as noted above, the SEC camouflaged), but nothing for suppliers in general (which the SEC ignored).

Finally, both commentators included audit-cost estimates of hundreds of millions of dollars.²¹³ Since issuer audits were part of the legislation²¹⁴ and the proposed rule,²¹⁵ it is no surprise that they noted these figures. In the final rule, however, the SEC included a ramp-up provision, allowing the vast majority of companies to skip the audit for at least two years.²¹⁶ This is exactly the type of thing that one would expect the SEC to correct for in its final reconciliation, but it left the audit-cost assumptions unaltered.²¹⁷

B. Numerical Inputs without Empirical Basis

A reliable QCBA depends not only on an accurate assessment of the rule’s legal requirements, but also on evidence-based inputs into the costs of meeting those requirements. As Professor Sunstein has noted, “[a] primary goal [of QCBA] is to ensure that regulations are based on a fair assessment of the likely consequences—on evidence and data, rather than intuition, dogma, and anecdote.”²¹⁸

The figures NAM, Tulane, and the SEC used to create their estimates, however, were wholly lacking in support. Among other things, Appendix A lists each input into NAM’s and Tulane’s models. The appendix shows that every one was offered without explanation, offered

²¹² SEC Final Rule, *supra* note 4, at 56,353.

²¹³ *See supra* Part III.B.1.iv (discussion of NAM’s audit-cost estimate); Part II.B.2.iii (discussion of Tulane’s audit-cost estimate).

²¹⁴ *See* 15 U.S.C. § 78m(p)(1)(A)(i) (2012).

²¹⁵ *See* SEC Proposed Rule, *supra* note 95, at 80,949.

²¹⁶ *See* Form SD, *supra* note 34, at Item 1.01(c)(1)(iii).

²¹⁷ What may be even more problematic is that, in a later discussion, the SEC acknowledged this discrepancy. The agency claimed, however, that the resulting overestimate of costs was partially offset, because it estimated that only 75% of companies would file a CMR and therefore need to conduct an audit, while IPC guessed that nearly 100% of companies could be required to do so. *See* SEC Final Rule, *supra* note 4, at 56,356. Stated differently, the SEC is saying that uncertainty surrounding one input—the number of CMR filers—alleviated the need to correctly reflect the rule. This is sloppy speculation.

²¹⁸ Sunstein, *Limits of Quantification*, *supra* note 12, at 1380.

with conclusory intuitive reasoning, or offered with a citation to dubious anecdotal data or empirical research.

For instance, NAM gave no explanation for its estimate that 20% of small- and medium-sized manufacturers would be affected by the rule.²¹⁹ Nothing. We can only assume this is a guess. For others, conclusory logic was offered. For example, Tulane gave no other reason for its acceptance of NAM's audit-cost figures other than to say they seemed "reasonable."²²⁰ This is synonymous with conjecture.

Anecdotal evidence was also cited throughout the Tulane and NAM models. NAM, for instance, backed up its audit-cost estimate by reference to conversations "with several auditing firms and companies that use audits."²²¹ Tulane appears to have based its estimate for the amount of hours issuers and suppliers would spend on due diligence on "information available from various experts" and its "own experience."²²²

At times, Tulane and NAM pointed to empirical evidence, but these references prove to be just as problematic. NAM, for example, suggested it surveyed its members to derive the number of first-tier conflict-mineral suppliers.²²³ NAM told us nothing, however, about the survey, nothing on how many companies were surveyed, how many responded, the size of the respondents, the questions asked in the survey, statistical controls to assess the representativeness of the respondent population, etc. It is even unclear from the context whether NAM was using the word "survey" in its social-science sense or in the broader, colloquial sense. In any case, there is no reason to view this evidence as reliable.

Tulane's equivalent is the IPC survey. Unlike whatever NAM relied on, the results of the IPC survey are publicly available. An inspection thereof reveals that it lacks statistical rigor. Indeed, despite Tulane's genuflection to its results, IPC itself noted that the "intent of the survey was not to produce statistically significant data," and that "the issue of conflict minerals is so new, and there are so many unknowns, that most respondents can only speculate about the impact of the conflict mineral requirements."²²⁴

As IPC suggested, the number of responses it received was insufficient to meet minimum standards of significance. IPC surveyed 3,839 manufacturers, fabricators, material suppliers, and equipment suppliers in

²¹⁹ See *supra* text accompanying note 118.

²²⁰ Tulane Model, *supra* note 85, at 22.

²²¹ NAM Model, *supra* note 84, at 25.

²²² Tulane Model, *supra* note 85, at 14.

²²³ NAM Model, *supra* note 84, at 24 n.2.

²²⁴ IPC Survey, *supra* note 130, at 1.

the electronics industry supply chain.²²⁵ As noted above, it only received 60 responses,²²⁶ which is good for a response rate of 1.5%. A sample size of 60, when compared to a population of 3,839, fails to meet the typically required level of statistical significance.²²⁷ In other words, too few companies responded to assume that those that did are representative of the entire population. Moreover, IPC did not report any statistical-control measures to reveal potential biases in the data. For comparison, the Government Accountability Office (the “GAO”) deemed a 27% response rate, in connection with a survey that included statistical controls, to be insufficiently representative of the population it was studying for purposes of assessing the costs of Sarbanes-Oxley compliance for smaller firms.²²⁸ Despite the self-acknowledged and mathematically confirmed shortfalls in IPC’s study, it was the backbone of Tulane’s analysis, serving as the basis for myriad assumptions, including the percentage of larger versus smaller issuers affected by the rules, the number of suppliers required to incur compliance costs, and the costs incurred to upgrade IT systems.²²⁹

Tulane also twisted IPC’s data to make it fit its model. IPC surveyed members of the electronic industry supply chain, not public issuers subject to the rule (in fact, only 18 public companies responded to the survey).²³⁰ Tulane ignored this. It repeatedly used the study to estimate that 72% of the complying issuers would be small companies and 28% large ones.²³¹ But this was the IPC breakdown of companies in the conflict-mineral supply chain. There is no reason to assume that it can be carried over to represent the mix of small and large issuers directly subject to the rule. This is a fundamental—and fundamentally flawed—input in Tulane’s model. Tulane also used the study to estimate the number of first-tier suppliers for small companies. But the figure it used—163—is the reported number of

²²⁵ *See id.*

²²⁶ *See supra* text accompanying note 132.

²²⁷ To claim statistically significant results, practitioners commonly require a confidence level of 95% with a margin of error of 5%. *See* DAVID S. MOORE, *THE BASIC PRACTICE OF STATISTICS* 362 (5th ed. 2010). To meet these thresholds, IPC needed 350 responses. There are several online calculators available to crunch the numbers. *See, e.g., Survey Sample Size Calculator*, FLUIDSURVEYS, <http://fluidsurveys.com/survey-sample-size-calculator/> (last visited Aug. 21, 2015).

²²⁸ *See* U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-06-361, *SARBANES-OXLEY ACT: CONSIDERATION OF KEY PRINCIPLES NEEDED IN ADDRESSING IMPLEMENTATION FOR SMALLER PUBLIC COMPANIES* 68 (2006), <http://www.gao.gov/assets/250/249736.pdf> [hereinafter *GAO STUDY*].

²²⁹ *See supra* Part III.B.2.

²³⁰ *See* IPC Survey, *supra* note 130, at 1.

²³¹ *See supra* Part III.B.2.

suppliers by both big and small companies in the conflict-mineral supply chain, not small issuers subject to the rules.²³² It is inapt.

The 53% discount Tulane incorporated is also perplexing. Tulane applied this discount to estimate which corporate suppliers identified by IPC and NAM actually supplied conflict minerals.²³³ It came up with the figure by averaging responses across the industries IPC surveyed.²³⁴ But IPC reported the breakdown based on the actual responses—30% of suppliers had unknown conflict status, 33% of suppliers were conflict-mineral suppliers, and 37% of suppliers were conflict free.²³⁵ There was no reason for Tulane to derive its own number. If Tulane had used IPC’s figures rather than the ones it artificially came up with, it would have calculated that 63% of suppliers were potential conflict-mineral suppliers (the sum of those in the first two categories), rather than 53%, a change that would have reverberated through its model.

Moreover, applying the 53% calculation to derive the number of first-tier suppliers to issuers subject to the rule mixes apples and oranges. Again, IPC surveyed companies regardless of their place in the conflict-mineral supply chain. The percentage of their suppliers that supply conflict minerals may not be the same as the percentage of suppliers to public companies that supply conflict minerals.

Finally, as noted above, IPC did not directly survey companies on IT-upgrade costs.²³⁶ Nevertheless, 7 out of almost 4,000 companies evidently provided numerical estimates, which varied widely, in response to a question about potential “hidden costs.”²³⁷ Tulane used the average figure, \$205,000, as its estimate for IT upgrades for smaller public companies.²³⁸ Seven disparate estimates, by large and small members of the conflict-mineral supply chain, is an unreliable basis for estimating the IT-upgrade costs for smaller public companies. In its desire to found its assumptions on something tangible, Tulane made the IPC survey bear a load that it was never meant to carry.

After peeling away unexplained inputs, inputs explained with conclusory logic, and inputs based on lacking and ill-fit empirical data, there is nothing left to NAM’s and Tulane’s economic models. They are

²³² See *supra* text accompanying notes 130–131.

²³³ See *supra* text accompanying notes 149–152.

²³⁴ See *supra* text accompanying notes 148–149.

²³⁵ See IPC Survey, *supra* note 130, at 4.

²³⁶ See *supra* Part III.B.ii.4.

²³⁷ See IPC Survey, *supra* note 130, at 10–11.

²³⁸ See *supra* text accompanying note 178.

guesses hidden beneath layers of arithmetic, and the SEC gives them undo credence.

C. Unfounded Changes to NAM’s and Tulane’s Model

The SEC left intact the bulk of NAM’s and Tulane’s analyses. The alterations it did make in creating the hybrid versions—to the IT costs and supplier-number estimates in both commenters’ models—were founded on conclusory rationales and were inconsistent not only with the models themselves but with each other.

1. Modification to IT-Upgrade Costs

The SEC made one key move with regard to the cost of IT upgrades. NAM had estimated IT costs at \$1,000,000 per issuer.²³⁹ Tulane had used this as the input for IT expenditures for large issuers, and \$205,000 as the input for small issuers.²⁴⁰ The SEC argued, without supporting empirics, that “the appropriate estimate lies somewhere in between.”²⁴¹ To account for this, the agency chose to assume IT costs for large issuers of \$410,000—twice that of small issuers rather than roughly five times their projected spending.²⁴²

This change was pure guesswork. And there is no reason to believe the SEC’s guesswork is any better than Tulane’s. In fact, in Tulane’s model, small issuers had sales of under \$100 million, while large issuers had sales of anything over that, including companies with sales of over \$1 billion.²⁴³ It is easy to imagine these significantly larger issuers having IT costs of up to five times their smaller counterparts. In the end, both parties are speculating, and the SEC’s speculation is no closer to the truth.

2. Modification to NAM’s Supplier-Number Estimate

The SEC thought that NAM’s estimate of 2,000 first-tier suppliers required a “prudent reduction.”²⁴⁴ Instead of analyzing and explaining why NAM’s estimate was too high, however, the SEC chose an arbitrary number to replace it. As noted above, the agency appears to have chosen 1,060 as

²³⁹ NAM Model, *supra* note 84, at 24.

²⁴⁰ See *supra* text accompanying notes 178–179.

²⁴¹ SEC Final Rule, *supra* note 4, at 56,351.

²⁴² See *supra* text accompanying note 183.

²⁴³ IPC Survey, *supra* note 130, at 3.

²⁴⁴ SEC Final Rule, *supra* note 4, at 56,352.

the correct number of suppliers for NAM's model because it was about half way between NAM's original figure and the IPC's estimate of 163.²⁴⁵

In what has become a theme, the SEC mischaracterized the 1,060 figure. The agency referred to it as Tulane's supplier estimate,²⁴⁶ but this is incorrect. This number was Tulane's estimate of suppliers to large issuers,²⁴⁷ and the SEC was now using it as an estimate for all issuers in NAM's model.

3. Modification to Tulane's Supplier-Number Estimate

Tulane used a complex calculation to estimate 860,066 as the total number of first-tier suppliers.²⁴⁸ The SEC rejected this in favor of NAM's figure, 278,000, which was an estimate for the number of small- and medium-sized manufacturing businesses in the supply chains of issuers directly subject to the rule.²⁴⁹ The SEC then applied Tulane's 78%/28% small issuer/large issuer weighting to this figure before plugging the new number back into Tulane's model.²⁵⁰

The agency defended this move by stating, "we believe . . . [Tulane's figure] to be too high."²⁵¹ It also rationalized this change by citing Census Bureau estimates of the number of manufacturing and small-manufacturing businesses, which are close to NAM's estimate.²⁵² But the former argument is conclusory and the latter is irrelevant. NAM may be right about the total number of small and medium-sized manufacturers. This does not make its figure an appropriate estimate of conflict-mineral suppliers. Indeed, NAM itself thought that only 20% of these manufacturers would be involved with conflict minerals.²⁵³

The 278,000 figure is at odds with how the SEC uses it in four ways: it was a count of manufacturers (the SEC, though, used it as count of all types of suppliers); it was only supposed to represent small and medium sized businesses (the SEC, though, used it for suppliers of all sizes); it included the entire supply chain (the SEC, though, used it to estimate first-tier suppliers); and it was not limited to suppliers of conflict minerals

²⁴⁵ See *supra* Part III.B.3.ii.

²⁴⁶ SEC Final Rule, *supra* note 4, at 56,352.

²⁴⁷ See *supra* text accompanying notes 149–150.

²⁴⁸ See *supra* Part III.B.2.ii.

²⁴⁹ See *supra* Part III.B.3.iii.

²⁵⁰ See *supra* Part III.B.3.iii.

²⁵¹ SEC Final Rule, *supra* note 4, at 56,352–53 n.836.

²⁵² See *id.*

²⁵³ See *supra* text accompanying note 118.

(though the SEC used it as such). The agency acted as if it was choosing NAM's figure for Tulane's model because it is a better version of the same input—an estimate of first-tier suppliers—when it is nothing of the sort.

The use of this figure was also inconsistent with the SEC's treatment of NAM's model. Using 1,060 as the estimate for suppliers in that model translates to 6,353,640 total suppliers—a far cry from 278,000.²⁵⁴ This distinction is partly explained by the overlap issue: the NAM figure overcounts because it does not control for suppliers in multiple supply chains. This dissimilarity can be eliminated, however, by reversing Tulane's 60% overlap factor and applying it to 278,000. After this change, neither control for supplier repetition. The result, a calculation of 695,000 total suppliers for Tulane's model, is still about 9-times less than the figure the SEC used for NAM.²⁵⁵ The only way for these figures to roughly equal out is if an overlap factor of about 96%, rather than 60%, is applied.²⁵⁶ This would require an assumption that almost every issuer relies on essentially the same suppliers. This seems far-fetched, and even if the SEC believed it to be the case, the agency failed to even acknowledge the discrepancy between supplier figures, let alone provide an explanation as to how they could be reconciled.

In the end, the SEC's estimate that compliance would cost issuers and their first-tier suppliers \$3–\$4 billion in the first year was purely speculative. When two ill-conceived models are mixed together, the result is more of the same. QCBA is supposed to replace intuition with evidence, but to accept the SEC's quantification effort is to mistake precision for accuracy and “activity for achievement.”²⁵⁷

V. BROADER IMPLICATIONS

The foregoing critique of how the SEC quantified the compliance costs associated with the Conflict Minerals Rule not only sheds light on the

²⁵⁴ This is calculated as follows: 5,994 (the number of affected issuers) * 1,060 (the SEC's revised supplier estimate for NAM) = 6,353,640.

²⁵⁵ This is calculated as follows: $1 - 60\%$ (the overlap factor) = 278,000 (the SEC's revised supplier estimate for Tulane)/x. Solving for x, the total number of suppliers is 695,000.

²⁵⁶ This is calculated as follows: $(1 - x$ (the overlap factor)) = 278,000/6,353,640. Solving for x, the required overlap factor is roughly 96%.

²⁵⁷ This former turn-of-phrase is borrowed from Professors Heinzerling and Ackerman, *see* LISA HEINZERLING & FRANK ACKERMAN, PRICING THE PRICELESS: COST-BENEFIT ANALYSIS OF ENVIRONMENTAL PROTECTION 20 (2002), <http://www.ase.tufts.edu/gdae/publications/C-B%20pamphlet%20final.pdf>, and the latter from John Wooden, DAN GERDES, COACHING FOR CHARACTER 13 (2003) (quoting John Wooden).

controversy regarding the costs of the rule itself, but also provides a case study that empirically informs the current debate about the proper role of QCBA in the regulatory process. Our analysis suggests that the public discourse about the costs of the rule has been grossly misinformed and that QCBA should be viewed with caution.

A. Implications for the Debate over the Conflict Minerals Rule

Our analysis reveals that the SEC’s \$3–\$4 billion estimate is deeply flawed. It is anecdotal, arbitrary, contrived, unscientific, and misleading. Given its manifold shortcomings, these figures should play a muted role in public debate about the Conflict Minerals Rule, and should not be cited as authoritative evidence about the compliance costs associated with supply-chain transparency efforts.

The actual cost of the rules remains unknown and is an area for further research. That said, now that companies have begun to comply, preliminary data suggests that costs were actually far less than the SEC estimated. One study looked at how many companies complied with the rules, and what compliance consisted of.²⁵⁸ First, it noted that fewer companies filed reports than anticipated. The SEC and commentators, in fact, overestimated the number of filers by 350%. Only about 1,300 companies filed disclosures, not 5,994 as NAM, Tulane, and the SEC had forecasted.²⁵⁹ All else being equal, fewer filers translates to lower industry-wide costs.

Second, the study showed that, for many companies, the compliance effort was insignificant. Their supply-chain due-diligence process consisted of basically two steps. The Conflict Free Sourcing Initiative (“CFSI”), a non-governmental organization formed by affected industries, put together a survey that companies could use to ask their suppliers about where they obtained their conflict minerals. Filers reported sending out this survey.²⁶⁰ At the time, CFSI had also audited over 100 smelters, which means, in each case, it investigated whether the supply chain leading up to the smelter was conflict free.²⁶¹ CFSI listed, and continues to list, conflict-free smelters on its website.²⁶² Companies reported checking to see whether smelters their suppliers had identified were on the list.²⁶³ By and large, the companies

²⁵⁸ See generally Schwartz, *supra* note 2.

²⁵⁹ See *id.* at 17.

²⁶⁰ See *id.* at 23.

²⁶¹ See *id.* at 42 n.236.

²⁶² See *id.* at 10.

²⁶³ See *id.* at 25.

studied did not do additional sleuthing—this was it. As the article explained, “due diligence essentially boiled down to sending out a survey created by a third party and checking whether the smelters they uncovered were on a publicly available website.”²⁶⁴ It is beyond the scope of this Article to conduct a revised cost estimate based on this study—doing so, in fact, would require many unbacked assumptions—but, at least on a qualitative level, its results suggest that the burden was not the juggernaut the SEC’s estimate foretold.

In another study, Tulane’s Payson Center sent out a survey to filers that, among other things, asked them how much they spent.²⁶⁵ One-hundred and twelve out of the approximately 1,300 filers responded.²⁶⁶ Based on this data, Tulane estimated industry initial compliance costs to be about \$700 million.²⁶⁷

While Tulane’s figure is likely closer to reality than the SEC’s prediction, it nevertheless should be cited with caution. The response rate falls below minimum levels of statistical significance,²⁶⁸ meaning it is uncertain that the 9% that responded are a fair representation of the entire population. As noted above, the GAO deemed a 27% response rate to be insufficient in its study of Sarbanes-Oxley costs.²⁶⁹ Also, while the GAO outlined its methodology (and various statistical checks it ran on the data),²⁷⁰ Tulane has so far only discussed its results, which are as-yet-unpublished. Finally, it almost goes without saying that firms have an incentive to exaggerate when asked about how much they spent. Despite all of this, however, the fact that Tulane’s study works with the right number of filers gives it a large advantage over the original guesses. Based on the evidence that is trickling in, it is probably safe to say that the rule cost much less than estimated, even though a reliable number still escapes us.

B. Implications for the QCBA Debate

Because the SEC failed to quantify both the costs and the benefits of the Conflict Minerals Rule, it did not engage in a comprehensive QCBA. Nevertheless, what transpired in this instance—the agency’s cursory effort

²⁶⁴ *Id.* at 31.

²⁶⁵ *See generally* Tulane Model, *supra* note 85.

²⁶⁶ *See id.* at 4.

²⁶⁷ *See id.* at 26.

²⁶⁸ Tulane indicated that the survey has a confidence level of 95% with a 10% margin of error. *See id.* at 4. A 5% margin of error is typically required. *See supra* note 227.

²⁶⁹ *See supra* text accompanying note 228.

²⁷⁰ *See* GAO STUDY, *supra* note 228, at 67–69.

to quantify costs, its evasive discussion of such effort, and the public's unquestioning acceptance of the baseless figures—is a far cry from what proponents of the methodology would have hoped for. While it is tempting to blame the SEC for all of this—and to stop there—doing so would gloss over the inherent problems in QCBA, and judicial review thereof, that lurk beneath the surface. A comprehensive analysis of how QCBA interacts with the issues at stake in the Conflict Minerals Rule not only provides fodder for critics of the SEC, but also for those who are skeptical of QCBA and the courts' role in policing its use.

1. The Case for QCBA

Advocates of QCBA argue that it is the optimal form of regulatory analysis. While an informed evaluation of regulation necessarily involves some type of cost-benefit weighing, proponents of QCBA argue that quantification is superior because it forces regulators to provide apples to apples comparisons and thereby eliminates conclusory judgments about incommensurably framed considerations.²⁷¹ Arithmetic displaces intuition as the decision-making fulcrum, resulting in better outcomes.

Forcing regulators to be intellectually rigorous, it is argued, also renders them more accountable. If an agency's logic is laid bare, the public can better assess the rules and the regulator's analysis thereof, thus creating a more informed public debate about the issues.²⁷² Since regulators are ultimately servants of the public, this is a good in and of itself; moreover, the threat of looming public scrutiny creates an incentive for more thoughtful evaluation in the first place.²⁷³ Along the same lines, QCBA should provide insulation from interest-group pressure.²⁷⁴ Its objectivity and transparency leave little room for pandering.

In sum, QCBA is argued to have both substantive and procedural benefits. Critics argue, however, that neither pans out. The conflict-minerals case is in almost complete harmony with the sceptics' claims.

²⁷¹ See Posner & Weyl, *Paradigms in Financial Regulation*, *supra* note 17, at S10.

²⁷² See *id.* at S11; Ackerman & Heinzerling, *supra* note 12, at 1562; Coates, *supra* note 14, at 897, 898–99 n.36.

²⁷³ See Ackerman & Heinzerling, *supra* note 12, at 1562.

²⁷⁴ See Coates, *supra* note 14, at 897, 899 n.37.

2. Questioning the Substantive Benefit: Does QCBA Produce Better-Informed Decisions?

The abstract case for QCBA is certainly appealing. It seems nearly axiomatic that the practice of weighing costs and benefits is improved when both sides are quantified and expressed in dollar terms. Sceptics argue, however, that in practice, quantification is often exceedingly difficult, which undermines the usefulness of its results. In particular, it often involves valuing things that are impossible (or at least extremely difficult) to quantify,²⁷⁵ and forecasting the results of legal interventions on society, which is, at best, an inexact science.²⁷⁶ The Conflict Minerals Rule implicates both of these difficulties.

i. Difficulties in Valuing Nonmarket Goods

QCBA calls for quantification of things that are not naturally expressed in monetary terms. Environmental QCBA requires that regulators value the lives of bald eagles and other endangered species.²⁷⁷ Quantification of health and safety rules requires the valuation of human life and of preventing certain illnesses (both now and far in the future).²⁷⁸ While economists have developed techniques for quantifying such things,²⁷⁹ critics of QCBA take issue. They argue that in certain cases the exercise is doomed to failure because things like human life cannot be expressed in dollar terms.²⁸⁰ They also argue that, even if you accept the premise that valuation is possible, valuation techniques are frequently flawed and at times even absurd.²⁸¹

Such difficulties plague the Conflict Minerals Rule. As noted, the SEC did not attempt to quantify the benefits of the rule, deferring to Congress's judgment that it would aid the Congo by reducing human-rights abuses.²⁸² If the SEC had tried quantification, however, it would have immediately hit hurdles. Rape is one of the primary human-rights abuses in

²⁷⁵ See Ackerman & Heinzerling, *supra* note 12, at 1564.

²⁷⁶ See Sunstein, *Limits of Quantification*, *supra* note 12, at 1375.

²⁷⁷ See Ackerman & Heinzerling, *supra* note 12, at 1558; Posner & Weyl, *A Response to Criticisms*, *supra* note 17, at 250.

²⁷⁸ See Ackerman & Heinzerling, *supra* note 12, at 1559, 1569.

²⁷⁹ See Posner & Weyl, *Paradigms in Financial Regulation*, *supra* note 17, at S11.

²⁸⁰ See Ackerman & Heinzerling, *supra* note 12, at 1575–77.

²⁸¹ *See id.* at 15 (“In the EPA’s original cost-benefit analysis of arsenic . . . the estimated value of a case of chronic bronchitis was used to represent the value of a case of nonfatal bladder cancer.”).

²⁸² See text accompanying *supra* note 78.

the Congo—and, therefore, a key target of the rule.²⁸³ How much is it worth, in dollar terms, to prevent a rape in the Congo?

Though this seems like an impossible question, economists would disagree. Figures pertaining to the value of rape prevention, in the US at least, are obtainable. The Department of Justice (“DOJ”) recently considered them in connection with a rule designed to prevent prison rape.²⁸⁴ The agency relied on two earlier studies. One asked people how much they would be willing to pay to reduce the incidence of rape.²⁸⁵ The conclusion—about \$310,000.²⁸⁶ Another study looked at, among other things, the out-of-pocket costs incurred by rape victims, such as hospital bills, as well as judicial decisions awarding them compensation for emotional distress.²⁸⁷ According to this study, a prevented rape is worth around \$200,000.²⁸⁸ Rather than choose between these estimates, the agency generated two models of potential benefits, a so-called willingness-to-pay model and a victim-compensation model.²⁸⁹

While it is alluring to think that the DOJ’s figures could be carried over to the Congo, intractable problems would arise in doing so. If researchers are trying to estimate the value of preventing rape in the Congo, it should arguably be the willingness-to-pay of the Congolese people that matters. Since typical individuals in the Congo have far fewer resources than Americans, if they were asked about rape, people there would ostensibly be willing to pay far less to prevent it. U.S. figures, therefore, are exaggerated, and could only be used if appropriately scaled downward. But this conclusion is morally problematic. It implies that rape prevention in the Congo is worth far less than in the U.S.,²⁹⁰ but rape is rape no matter where it occurs or who the victim is.

The victim-compensation model includes estimates from various studies for lost wages, medical care, and other expenses incurred by rape

²⁸³ See Nelson, *supra* note 33, at 222.

²⁸⁴ See *Regulatory Impact Assessment for PREA Final Rule*, U.S. DEP’T JUST. 1 (May 17, 2012), http://www.ojp.usdoj.gov/programs/pdfs/prea_ria.pdf.

²⁸⁵ See *id.* at 40.

²⁸⁶ See *id.*

²⁸⁷ See *id.* at 42.

²⁸⁸ See *id.* at 43.

²⁸⁹ *Id.* at 4.

²⁹⁰ For similar reasons, Lawrence Summers famously argued that environmental degradation should be focused on poorer parts of the world. See Ackerman & Heinzerling, *supra* note 12, at 1574.

victims.²⁹¹ It also includes a figure for “suffering and lost quality of life” derived from jury awards in suits for things like “inadequately lighting parking lots, leaving hotel halls unsecured, or serving intoxicated patrons.”²⁹² None of these calculations fit the Congo. Out of pocket costs are different and a defendant in a case like this has a far greater ability to compensate the victim than a militant in the Congo, which undoubtedly affects the award. If rape is rape, though, the identity and ability of the perpetrator to pay should be irrelevant. While these numbers could be reduced to better reflect the realities of the Congo, this again confronts the moral issue that lives should be considered of equal value.

Perhaps the answer is that both studies should simply be relied upon without adjustment to reflect this moral equivalence. But this flies in the face of the economic logic, putting the calculation at odds with itself. There is no good answer, and this sort of complexity would confront the SEC for each human-rights violation the rule might prevent.

Another approach would be for SEC economists to come up with their own number. They could survey people in the U.S. regarding what they are willing to pay to prevent human-rights abuses, including rape, in the Congo. While they would get a number, it would be hard to have much faith in it. Rape in the Congo is not a market good that people can be expected to make informed judgments about.²⁹³

ii. Difficulties in Forecasting the Effect of Regulation

A second difficulty with quantification is that it necessitates an economic model of regulatory impact.²⁹⁴ Even if economists can derive a value for a bald eagle, to estimate the benefits of a rule, they also need to estimate how many bald eagles would be saved. QCBA, therefore, is an exercise in predicting how a particular regulatory intervention will change the future. Some consequences may be rather easy to predict. If a habitat is

²⁹¹ MINNESOTA DEPARTMENT OF HEALTH, COSTS OF SEXUAL VIOLENCE IN MINNESOTA 8 (2007), [http://wiki.preventconnect.org/file/view/Costs+of+Sexual+Violence+in+Minnesota+\(2007\).pdf](http://wiki.preventconnect.org/file/view/Costs+of+Sexual+Violence+in+Minnesota+(2007).pdf).

²⁹² *Id* at 10.

²⁹³ It is also debatable whether this reflects the right perspective. Since the rule is largely other-regarding, respondents may assign a very low value to its benefits. Some may say people in the U.S. are the correct ones to ask because they indirectly bear the cost of the rule; it is also arguable, however, that it is inappropriate to ask people to value the benefit of reducing the incidence of a crime in a far away country that is extraordinarily unlikely to directly affect them.

²⁹⁴ *See* Coates, *supra* note 14, at 939.

saved from destruction, and a particular number of endangered species live there, then regulators can likely reach a rather informed estimate of how many animals would be saved.

But things are not always so easy. Indeed, sometimes it is even difficult to figure out how many animals inhabit a particular stretch of land.²⁹⁵ Conflict minerals is a situation where predicting the impact of the rule on both sides of the equation is immensely difficult. The rule puts in place an extraordinarily indirect mechanism for confronting human-rights abuses. The idea of the rule is that transparency in corporate supply chains will reduce the extent to which U.S. corporations source from mines controlled by the military groups responsible for such violations. It is hoped that with less money at their disposal, these groups will lose their power and their ability to abuse the population.²⁹⁶ This is only a regulatory hypothesis, and there is nothing to go on to estimate how things will actually play out. Thus, even if the value of rape prevention could be reliably quantified, the actual number of rapes prevented can only be a guess. Since both figures are wholly uncertain, quantifying the benefits of the Conflict Minerals Rule would layer guesses on top of guesses.

And the cost-side is no better. Estimating costs involves predicting how much companies would spend on compliance, which depends on a prediction about how companies would comply. In this case, the SEC failed to reliably generate these forecasts. While the agency's decision to rely on NAM's and Tulane's ill-conceived models doomed its effort, such tasks also implicate epistemic constraints. It is inherent difficulty to predict how companies might respond to unprecedented regulation like the Conflict Minerals Rule. The only source of information is the companies themselves, but they are a dubious resource: companies do not know what they will do until they actually do it and, when asked, they are likely to exaggerate the costs involved. Probably the best that could have been done in this case was a scientific survey of regulated entities, suppliers, consultants, and lawyers. This would have been more insightful than the gobbledygook on which the SEC based its analysis, but it would still consist of bloated and under-informed guesses. While critics often focus on the difficulty of quantifying benefits,²⁹⁷ in this case, reliable cost estimates were also out-of-reach.

²⁹⁵ See Adrian Vermeule, *Rationally Arbitrary Decisions (in Administrative Law)* 6 (Harvard Law Sch., Working Paper No. 13-24, 2013), <http://ssrn.com/abstract=2239155>.

²⁹⁶ See Press Release, Senator Dick Durbin, Statement on US District Court Decision Regarding Conflict Minerals (July 7, 2013), <http://www.durbin.senate.gov/newsroom/press-releases/durbin-statement-on-us-district-court-decision-regarding-conflict-minerals>.

²⁹⁷ See sources cited *supra* note 25.

The claim is that QCBA replaces intuition with arithmetic, which is more objective and therefore more trustworthy. But in this case, QCBA could not provide these paybacks. While the SEC did not attempt to quantify benefits, if it had, it would have quickly run out of solid answers. Similarly, the agency produced a cursory estimate of costs; but even a perfect effort would have yielded questionable figures. Given its inherent limitations in this context, even a rigorous QCBA would have left the SEC with plenty of slack to drive its calculations in the direction of its priors.

3. Questioning the Procedural Benefit: Does QCBA Lead to a More Informed Public and Less Interest Group Influence?

Sophisticated advocates of QCBA acknowledge practical difficulties in its execution, but counter that even flawed approximations are better than nothing. Questionable methodology can be scrutinized by the public, which can decide how much faith to put into the estimates. Dissatisfied interest groups and scholars can counter with their own studies.²⁹⁸ This useful public dialogue would never happen without a QCBA—even if imperfect. Moreover, because agencies have to show their work, there is less room for them to indulge sloppy thinking or cater to interest-group pressure.²⁹⁹

The conflict-minerals case does not bear out this happy narrative. The public did not cry foul on the \$3–\$4 billion estimate. Instead, the figures have falsely anchored the debate on the topic.³⁰⁰ This is problematic, not only because it creates a misunderstanding of the rules themselves, but also because it bleeds into the conversation about the feasibility and shape of future conflict-mineral transparency laws, which are currently under consideration, most notably in the EU.³⁰¹ The public discourse would have likely been better if the SEC had never released these figures.³⁰² It is tempting to think that QCBA provides a benign addition to the information pool; but in this case it actually degraded public understanding.

This Article, it could be argued, is an exception, because it critiques the SEC’s analysis just as QCBA supporters would predict. The problem is that people cannot unread the thousands of articles repeating the agency’s figures—and the chance of retraction are nil. While this Article will hopefully shift the debate going forward, much damage has already been done.

²⁹⁸ See Posner & Weyl, *A Response to Criticisms*, *supra* note 17, at 249–250.

²⁹⁹ See Posner & Weyl, *Paradigms in Financial Regulation*, *supra* note 17, at S11.

³⁰⁰ See *supra* text accompanying note 5.

³⁰¹ See Emily Chasan, *supra* note 11.

³⁰² This counterfactual is assessed *infra* Part V.B.4.

This arc of understanding—where figures are blindly repeated before being questioned when considered more deeply—is predictable. It is easy and free to accept a regulator’s estimate, but there are extensive information-processing costs to discovering its flaws. The pressure on news sources to publish and opine makes it almost assured that problematic estimates on controversial rules will be widely disseminated before being called into doubt.³⁰³ The information dissemination model that QCBA’s adherents propound neglects the temporal dynamic, which leads them to forecast an informed dialogue rather than the misguided one that transpired here and seems much more likely to occur.³⁰⁴

Nor does it appear that the threat of public oversight made for sterling regulatory analysis in this case. Indeed, this Article is devoted to outlining the flaws therein. Instead, what the potential for public condemnation likely contributed to was the effort to cover up the frailty of the examination. Unpacking the QCBA was a grueling task. Part of this owes to its inherent complexity; but the SEC muddled things further with its disjointed analysis and vague explanations.³⁰⁵

In addition, the SEC was not forthcoming about the weaknesses in its analysis. We already discussed how the agency mischaracterized, and thereby papered over, oddities in NAM’s model that it incorporated into its own.³⁰⁶ While, at one point, the agency acknowledged that “even” NAM and Tulane “did not provide sufficiently documented evidence to support all of their assumptions,”³⁰⁷ the SEC gave the impression it had resolved the shortcomings with its own contributions:

We have therefore . . . made modifications to the analyses provided by the manufacturing industry association and university group commentators accordingly. What follows is a modified analysis . . . that we believe better synthesizes the information provided to us in the comment process.³⁰⁸

³⁰³ Lisa Heinzerling and Frank Ackerman noted the same phenomenon in environmental regulation. *See* HEINZERLING & ACKERMAN, *supra* note 257, at 20.

³⁰⁴ One curiosity is that human-rights groups have not raised our concerns. Perhaps they lack the resources to engage with the figures on this level of granularity.

³⁰⁵ Professor Coates made a more acerbic observation in his article, describing the SEC documents he reviewed as “turgid, vague, and full of jargon.” Coates, *supra* note 14, at 983.

³⁰⁶ *See supra* Part IV.B.

³⁰⁷ SEC Final Rule, *supra* note 4, at 56,351.

³⁰⁸ *Id.*

This is not the behavior predicted by QCBA advocates, but it makes sense. No regulator wants to make itself an easy target, and the SEC has been particularly beset as of late.

Finally, it does not look like QCBA provided insulation from interest-group pressure. NAM's shoddy cost estimate served as the basis of the SEC's. One cannot help but wonder whether the agency did this to make it more difficult for NAM to later argue in court that the SEC's QCBA was biased and inadequate. Similarly, the SEC may have selected inputs that would help it reach a final calculation likely to appease NAM; it may have thought that a \$3–\$4 billion estimate would be high enough to avert, or at least weaken, a court challenge.³⁰⁹

The conflict-minerals example suggests that the procedural case for QCBA is just as weak as the substantive one. Pundits predictably gravitated towards the SEC's calculation without wading through the logic behind it. A misleading public debate ensued. Looming public scrutiny did not cause the SEC to tighten its analysis. Rather than eliminate weaknesses therein, it buried them with verbiage. Finally, QCBA appears to have done nothing to quell interest-group pressure. The rule's primary industry critic took center stage in the SEC's calculations. While the agency is certainly culpable here, its actions were also a predictable response to incentives embedded in QCBA. Public confusion likewise appears endemic to the methodology, its complexity a mismatch for the fast pace of public commentary.

3. Unreliable Judicial Review

A large part of the controversy surrounding QCBA is the institutional context in which it operates, including the proper role of the courts.³¹⁰ When executive agencies conduct QCBA's involving economically significant rules, their QCBA is reviewed by the Office of Information and Regulatory Affairs ("OIRA"), an expert on the topic.³¹¹ While their rulemaking is subject to judicial review under the APA's "arbitrary and capricious" standard,³¹² it is only when such agencies are proposing rules pursuant to a statute that requires QCBA that their QCBA effort is also

³⁰⁹ As discussed *infra* Part V.B.3, if this was the agency's motivation, it got what it wanted.

³¹⁰ See Sunstein, *supra* note 12, at 2259; Sunstein, *supra* note 17, at 267–69; see generally, Bartlett, *supra* note 53.

³¹¹ See Bartlett, *supra* note 53, at S383; Sunstein, *supra* note 17, at 269.

³¹² See 5 U.S.C. § 706(2)(A); Vermeule, *supra* note 295, at 3.

subject to judicial review under that standard.³¹³ Otherwise, its QCBA is off limits.

Like executive agencies, SEC rulemaking is subject to judicial review under the APA.³¹⁴ In addition, because QCBA has been read into the securities laws, the agency’s QCBA analysis may also be scrutinized by courts.³¹⁵ The SEC, though, is outside OIRA’s purview.³¹⁶

While OIRA is not problem-free,³¹⁷ it is the role of the courts that has been viewed most skeptically.³¹⁸ In general, courts are viewed as lacking the appropriate expertise to review QCBA and are seen as too political.³¹⁹ In particular, the *Business Roundtable* line of cases (and the case itself) has been subject to scathing academic commentary.³²⁰ Most argue that the court made a mockery of the deferential standard that “arbitrary and capricious” review is supposed to represent.³²¹

The conflict-minerals QCBA, itself the subject of protracted litigation, informs the debate over the courts’ role as well. While certain aspects of the legal opinions are defensible, the judiciary’s overall performance when called upon here illustrates why so many are critical.

Shortly after the rule was finalized, NAM and other business groups sued to overturn it in the D.C. District Court.³²² Among other challenges, they raised the familiar accusation that the SEC failed to consider costs and benefits with sufficient rigor.³²³ On the benefits side, they argued that it was arbitrary and capricious for the SEC to accept Congress’s determination that the rule would aid the Congolese people rather than “independently

³¹³ See Bartlett, *supra* note 53, at S384–85.

³¹⁴ See 5 U.S.C. § 706(2)(A); *Chamber of Commerce v. SEC*, 412 F.3d 133, 140 (D.C. Cir. 2005).

³¹⁵ See Bartlett, *supra* note 53, at S381 fig.1, S389.

³¹⁶ See Sunstein, *supra* note 17, at 268.

³¹⁷ See *id.* at 269.

³¹⁸ See *id.* at 268; Coates, *supra* note 14, at 920, 1005–06; Posner & Weyl, *A Response to Criticisms*, *supra* note 17, at 261.

³¹⁹ See, e.g., Posner & Weyl, *A Response to Criticisms*, *supra* note 17, at 261.

³²⁰ See Coates, *supra* note 14, at 918 n.116.

³²¹ Kraus & Raso, *supra* note 17, at 316 n.139.

³²² See Christopher M. Matthews, *Business Groups Sue to Block “Conflict Minerals” Rules*, WALL ST. J. CORRUPTION CURRENTS (Oct. 22, 2012, 4:38 PM), <http://blogs.wsj.com/corruption-currents/2012/10/22/business-groups-sue-to-block-conflict-minerals-rules/>.

³²³ See *Nat’l Ass’n of Mnfrs. v. SEC*, 956 F. Supp. 2d 43, 55 (D.D.C. 2013), *rev’d in part*, *Nat’l Ass’n of Mnfrs. v. SEC*, 748 F.3d 359 (D.C. Cir. 2014), *overruled by American Meat Institute v. U.S. Dept. of Agriculture*, 760 F.3d 18, 22–23 (D.C. Cir. 2014), *reaffirmed by Nat’l Ass’n of Mnfrs. v. SEC*, No. 13-5252 (DC. Cir. Aug. 18, 2015) [hereinafter *Nat’l Ass’n I*].

evaluate whether the [rule] would actually achieve the social benefits Congress envisioned.”³²⁴

In rejecting plaintiffs’ argument, the court distinguished the *Business Roundtable* line of cases on two grounds. According to the court, Congress’s social aim made these rules different:

As should be clear, however, [earlier] cases involved shortcomings on the Commission’s part with respect to the *economic* implications of its actions—economic implications that the SEC was statutorily required to consider in adopting the challenged rules. By contrast, none of those decisions lends support to Plaintiffs’ theory that the Conflict Minerals Rule must be invalidated because the SEC failed to consider whether the Rule would actually achieve the *humanitarian* benefits identified by Congress.³²⁵

The prescriptive nature of the legislation was the other distinguishing feature:

[T]he Commission promulgated the Conflict Minerals Rule pursuant to an express, statutory directive *from Congress*, which was driven by *Congress’s determination* that the due diligence and disclosure requirements it enacted would help to promote peace and security in the DRC. As a result, the SEC rightly maintains that its role was not to “secondguess” Congress’s judgment as to the benefits of disclosure, but to, instead, promulgate a rule that would promote the benefits Congress identified and that would hew closely to that congressional command.³²⁶

Both of these distinctions are reasonable legal arguments, which draw defensible boundaries on the *Business Roundtable* precedent. The court’s analysis is less convincing, however, when it comes to considering costs.

In upholding the quantification effort, the court described the SEC’s decision to primarily rely on the NAM and Tulane comment letters, and to modify their estimates based on its independent analysis, to be “eminently

³²⁴ *Id.* at 56.

³²⁵ *Id.* at 58.

³²⁶ *Id.*

appropriate.”³²⁷ The court also stated that it was not “arbitrary or unreasonable” for the SEC to choose a figure for IT-upgrade costs that “lies somewhere in between” NAM’s and Tulane’s estimates.³²⁸ Finally, it upheld the SEC’s assumption, loosely based on Tulane’s study, that companies subject to the rule have on average 1,060 suppliers. Because the SEC “weighed comments received from the various parties and exercised its discretion” in finding this figure to be the “most reasonable,” the agency’s analysis was appropriate.³²⁹

This court’s reasoning completely misses the mark. How is it “eminently appropriate” to rely on estimates that were built on sand? Perhaps it is debatable whether the SEC’s reliance on those estimates was “arbitrary and capricious,” but the agency’s analysis was not beyond reproach. The court’s conclusory defense of the SEC’s “somewhere in between” logic is also highly questionable under existing law. As the D.C. Circuit has explained:

Although the “scope of review under the ‘arbitrary and capricious’ standard is narrow and a court is not to substitute its judgment for that of the agency,” we must nonetheless be sure the Commission has “examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”³³⁰

A decision without any grounding violates this standard. As Professor Sunstein has argued, in the context of QCBA, “[a]gencies might have to *pick*, meaning that they might not have reasons for their decisions, and they might be doing the equivalent of flipping a coin. Under standard principles of administrative law, an approach of this kind is arbitrary and therefore unlawful.”³³¹ In estimating the cost of IT upgrades, the SEC looks to have engaged in this unlawful picking; so too with its supplier-number estimates.³³² Setting aside whether it would have been good policy to send the rule back on APA grounds (a subject we address below), there is a

³²⁷ *Id.* at 60.

³²⁸ *Nat’l Ass’n I.*, 956 F. Supp. 2d at 60.

³²⁹ *Id.* at 61.

³³⁰ *Chamber of Commerce v. SEC*, 412 F.3d 133, 140 (D.C. Cir. 2005) (citations omitted).

³³¹ Sunstein, *supra* note 17, at 278.

³³² *See supra* Part IV.C.

strong argument that this is what the court should have done based on existing precedent.³³³

The district court did not have the final say on the Conflict Minerals Rule. Plaintiffs appealed to the D.C. Circuit Court, where so many SEC rules have gone to die. Here again, however, their challenges to the SEC’s analysis failed. The agency’s decision not to assess whether the rule would provide the benefits that Congress intended was again upheld. The court even said that “we find it difficult to see what the Commission could have done better.”³³⁴ The court went so far as to explicitly excuse the SEC from conducting a quantitative analysis of benefits in this context:

Here, the rule’s benefits would occur half-a-world away in the midst of an opaque conflict about which little reliable information exists, and concern a subject about which the Commission has no particular expertise. Even if one could estimate how many lives are saved or rapes prevented as a direct result of the final rule, doing so would be pointless because the costs of the rule—measured in dollars—would create an apples-to-bricks comparison.³³⁵

This analysis is far less convincing than the district court’s, which distinguished the case from *Business Roundtable* based on the directive nature of the underlying legislation and the rule’s humanitarian goals.³³⁶ It is disconcerting that the D.C. Circuit, the champion of QCBA, and “the nation’s premier administrative law tribunal,”³³⁷ would state that a comparison of “lives saved” or “rapes prevented” would result in an “apples-to-bricks” comparison. QCBA is exactly about comparing apples to bricks; a core element is quantification of otherwise incommensurable things.³³⁸ Even more on point, agencies routinely value human lives—the

³³³ Professor Vermeule argues that administrative law should recognize and uphold “rationally arbitrary” decisions, i.e., those where there is no “first-order reason” available to the agency on which to make a choice. See Vermeule, *supra* note 295, 16.

³³⁴ *Nat’l Ass’n of Mfrs. v. S.E.C.*, 748 F.3d 359, 369 (D.C. Cir. 2014) *overruled by* *Am. Meat Inst. v. U.S. Dep’t of Agric.*, 760 F.3d 18 (D.C. Cir. 2014), *reaffirmed by* *Nat’l Ass’n of Mfrs. v. SEC*, No. 13-5252 (DC. Cir. Aug. 18, 2015) [hereinafter *Nat’l Ass’n II*].

³³⁵ *Id.* at 370.

³³⁶ See *supra* text accompanying notes 325–326.

³³⁷ Vermeule, *supra* note 295, at 4.

³³⁸ See Posner & Weyl, *A Response to Criticisms*, *supra* note 17, at 262 (“the valuations that are relevant to environmental, health, and safety regulation . . . frequently involve measuring the impact of non- market goods on human well-being.”).

going rate is \$9 million³³⁹—and we already discussed how the DOJ valued rapes prevented.³⁴⁰ A court that views itself as the champion of QCBA cannot excuse the SEC’s conduct on the basis of incommensurability.

The plaintiffs appear to have dropped their cost-side challenge on appeal. Nevertheless, the court gave the SEC’s analysis a gratuitous thumbs-up in dicta. According to the court, “[t]he Commission exhaustively analyzed the final rule’s costs. It considered its own data as well as cost estimates submitted during the comment period, and arrived at a large bottom-line figure that [NAM] does not challenge.”³⁴¹

This analysis is again disappointing. While the SEC used a lot of words to analyze the costs of the rules, this does not mean its analysis was “exhaustive.” That the SEC reached a “large bottom-line figure” has no bearing on whether the analysis was rigorous or thoughtful.³⁴²

This ruling also creates troubling incentives. The logic tells the SEC that if it comes up with a large cost estimate that relies on the work of the rules’ primary opponent, and backs this up with sufficient circumlocution, it should be safe. QCBA should be an exercise in truth-seeking and transparency, but the court’s commendation of shoddy workmanship turns it into an exercise in gaming judicial review.

In fact, the entirety of the QCBA makes sense through this lens—as an artifice designed to satisfy the court. From this perspective, the SEC relied so heavily on NAM and chose such a large estimate to help its chances in litigation.³⁴³ Likewise, it made sure its consideration was lengthy and glossed over its numerous data problems and arbitrary choices. The court’s decision is an endorsement of this approach, which likely means more of the same. This political theatre drains agency and judicial resources, encourages the SEC to cow to interest groups, and misinforms the public.

³³⁹ See Sunstein, *supra* note 17, at 271.

³⁴⁰ See text accompanying *supra* notes 284–292.

³⁴¹ *Nat’l Ass’n II*, 748 F.3d at 369 (citations omitted).

³⁴² The rules did not survive completely untouched. The court ultimately overruled a portion of the rule mandating that companies disclose whether their products are “conflict free.” See *id.* at 373.

³⁴³ Basing its calculation on NAM’s estimate is likely a better litigation strategy for the SEC than relying on a scientifically rigorous survey, which could still be attacked in court if results are not to industry’s liking. As noted *supra* text accompanying note 67, the SEC was criticized for taking insufficient account of industry comments in *Business Roundtable*. To conform to this precedent, if the SEC had done its own survey, it would have somehow had to distinguish NAM’s figures or meld NAM’s estimates together with its own, again opening itself up to critique.

A commentator has recently argued that the *Business Roundtable* line of cases is laudatory, and that the circuit court’s decision in this instance represents a “quiet turning point in the court’s attitude” toward QCBA.³⁴⁴ He maintains that “the underlying spirit (though not the letter) of the much-maligned [*Business Roundtable*] opinion has brought economists to the table in the SEC rulemaking process,”³⁴⁵ and that, as a result, the SEC’s conflict-minerals analysis contained “real economic work.”³⁴⁶ The implication is that the circuit court’s shot across the bow has improved SEC rulemaking and now the court is wisely taking a back seat in response to the agency’s improvements. Our analysis shows that this take is mistaken. Rather, the intervention—up to and including the circuit court’s conflict-mineral decision—has created an unhealthy QCBA masquerade.

While the conflict-minerals cases lend credence to judicial review’s skeptics, politicization did not appear to be the main problem. Judge Wilkins, a Democrat appointee, rendered the lower-court opinion.³⁴⁷ Judge Randolph, a Republican, wrote the appellate-court opinion. The three-judge panel at this stage consisted of two Republicans and a Democrat.³⁴⁸ The differing party allegiances at the two levels of review may explain why the lower court distinguished *Business Roundtable*, while the appellate court chose more abstract reasoning. But since the results mesh (and the Democrat on the circuit-court panel went along with its ruling), it is difficult to make too much of party affiliation here.

Instead, what stands out is the lack of expertise, as well as how judicial review may actually degrade agency analysis. Neither the district court nor the circuit court evidenced any real understanding of QCBA. It is particularly troubling that the D.C. Circuit Court appears wholly disconnected from the sophisticated debate about the practice despite its central role therein. Moreover, when the SEC panders to the courts, it does nothing to advance the cause of informed rulemaking. If an agency is conducting QCBA, it is best for the public if it seeks the most accurate estimate possible and openly discusses the inevitable shortcomings in its analysis. Our analysis suggests that court review, as currently conducted, incentivizes agencies to do just the opposite: to elevate interest-group input, even if poorly conceived, and to gloss over problems, even at the expense of public debate.

³⁴⁴ Kraus & Raso, *supra* note 17, at 290.

³⁴⁵ *Id.* at 304.

³⁴⁶ *Id.* at 290.

³⁴⁷ See *Nat’l Ass’n I.*, 956 F. Supp. 2d 46.

³⁴⁸ See *Nat’l Ass’n II*, 748 F.3d at 362.

4. Policy Implications and Counterarguments Thereto

While the conflict-minerals example is only one data point in the broader debate about QCBA and its role in policymaking, the problems that arise in this context mirror those that arise in others. This Article, therefore, contributes to a burgeoning body of research that calls QCBA into doubt.³⁴⁹ When viewed alongside other evidence of what QCBA looks like in practice, our study suggests that the D.C. Circuit was wrong to mandate that the SEC engage in this mode of analysis,³⁵⁰ and that the ever-deepening trust in QCBA displayed by policymakers may be unwarranted.

This reading of the study flows naturally from the above analysis, which shows how problems with QCBA in this instance match the broader critique of the practice. Nevertheless, it could be argued that the conflict-minerals example is *sui generis* in two important respects, which limit its contribution to the broader debate. The first is that the rule was human-rights regulation, not financial regulation, which is the SEC's specialty, and therefore has little to say about whether the practice is useful for the agency.

While this critique is right that this rule involves novel subject matter, the SEC is being called on more and more to use securities regulation to pursue broader social goals, and even to pursue such goals when the benefits would primarily accrue outside of national boundaries.³⁵¹ While this drift has many critics,³⁵² it is the SEC's new reality. Moreover, the difficulties with estimating costs on display here owe, at least in part, to epistemic constraints that would hinder the analysis of any sort of novel regulation, regardless of the subject-matter motivation. It is inherently difficult to forecast how companies will respond to new compliance requirements. Similarly, the content of the rule has nothing to do with the problematic aftermath of the SEC's flawed analysis. Regardless of topic or

³⁴⁹ See, e.g., ACKERMAN & HEINZERLING, *supra* note 12; Ackerman & Heinzerling, *supra* note 12; Coates, *supra* note 14; Gordon, *supra* note 17; Daniel A. Farber, *Rethinking the Role of Cost-Benefit Analysis*, 76 U. CHI. L. REV. 1355 (2009); Thomas O. McGarity, *Professor Sunstein's Fuzzy Math*, 90 GEO. L.J. 2341 (2002).

³⁵⁰ While ours is a policy argument, the legal grounding is dubious as well. See Ahdieh, *supra* note 17, at 1990; Coates, *supra* note 14, at 914.

³⁵¹ See generally David M. Lynn, *The Dodd-Frank Act's Specialized Corporate Disclosure: Using the Securities Laws to Address Public Policy Issues*, 6 J. BUS. & TECH. L. 327 (2011); Galit A. Sarfaty, *Human Rights Meets Securities Regulation*, 54 VA. J. INT'L L. 97, 114 (2013); see Jill E. Fisch, *The Mess at Morgan: Risk, Incentives and Shareholder Empowerment*, 83 U. CIN. L. REV. 651, 664 (2015).

³⁵² See, e.g., Daniel M. Gallagher, Comm'r, SEC, Statement at SEC Open Meeting: Proposed Rule to Implement Section 1502 of the Dodd-Frank Act—The “Conflict Minerals” Provision (Aug. 22, 2012), available at <http://www.sec.gov/news/speech/2012/spch082212dmg-minerals.htm>; Lynne, *supra* note 351, at 339; White, *supra* note 31.

accuracy, an agency's numerical estimates about its rules naturally enjoy a privileged place in public debate.

Finally, QCBA in financial regulation has been subject to criticisms similar to those raised herein. Professor Coates's recent article used six cases studies to show the futility of QCBA in this context.³⁵³ He went into less depth in his examples than we do, but his conclusions are in near perfect harmony with ours.³⁵⁴ Thus, viewing these articles together makes the case that QCBA is inapt for *all* of SEC rulemaking.

Another thing that makes the Conflict Minerals Rule somewhat unique is the directive nature of the legislation pursuant to which it was drafted. QCBA is supposed to assist agencies in designing regulations; when the rules are prescribed, as in this case, the analysis is particularly farcical.³⁵⁵ Perhaps then, the only lesson from this case is that QCBA should not be required when regulation is a *fait accompli*.

This conclusion, however, does not fit with the broader lessons of the case study. The conflict-minerals example supports the notion that QCBA itself is flawed, regardless of the extent of agency discretion. Even if the SEC had done everything right, it still would have reached suspect results, and it still would have been faced with an incentive to paper over the shortcomings in its analysis. This case study supports abolition of the QCBA mandate, not partial rollback.³⁵⁶

The response is the same to those who might argue that the only lesson to be drawn from our analysis is that the court should have sent the rule back on APA grounds. We have argued that this was the right result based on the language in *Business Roundtable*.³⁵⁷ A judicial rebuke, however, would have gotten the policy wrong. This would have forced the SEC to spend more time and money considering a preordained rule. Moreover, in upholding the flawed QCBA mandate, it would have taken us

³⁵³ See generally Coates, *supra* note 14.

³⁵⁴ See *id.* at 1011.

³⁵⁵ It could be argued that QCBA for prescriptive rules is not wholly senseless, because an agency could quantify aspects of the rules where it does have discretion. But there are often no bright lines to distinguish these, and even if there are, the narrow areas in which the agency exercises discretion are likely to be the most difficult to quantify and have the smallest social impact. See *SEC Memorandum*, *supra* note 46, at 25. Finally, in the rare case where quantification of a discretionary component would be beneficial, the agency would be free to take on the task.

³⁵⁶ Removing the QCBA mandate only from directive rules would also create a perverse incentive. As Professor Coates has pointed out, if agency decisions are less scrutinized when rules are more prescriptive, they have an incentive to push for explicit Congressional directives in controversial cases, which flips the notion of regulatory expertise and accountability on its head. See Coates, *supra* note 14, at 1005–06.

³⁵⁷ See *supra* text accompanying note 333.

further down the wrong path. Rather than reject the rule or praise the SEC's analysis, the court could have overruled *Business Roundtable*, thereby realigning precedent with policy.

On a more general level, one could argue that the Conflict Minerals Rule was a “hard case” and that difficulties that arise in such an inherently complicated context provide little data about the benefits of the practice across the regulatory spectrum. In theory, this is right. The strongest evidence against QCBA would show its failure in even the simplest context. That said, the modern face of regulation is complicated. As Professor Vermeule has eloquently put it, “[t]he arc of the administrative state bends towards uncertainty.”³⁵⁸ While the issues in play with regard to the Conflict Minerals Rule are complex, they are not *exceptionally* so. Rather, they are emblematic of those faced by regulators in many circumstances.³⁵⁹ What happened in this case is therefore relevant for assessing the proper role of QCBA more broadly.

Finally, supporters of QCBA might wonder what mode of analysis would take its place. It could be argued that, despite its flaws, this approach is still better than alternatives. While it is beyond the scope of this Article to comprehensively lay out a substitute framework, our analysis supports Coates's recommendation for “conceptual” cost-benefit analysis,³⁶⁰ an approach where agencies weigh costs and benefits, but do not seek out a quantified net-benefit calculation.³⁶¹

Conceptual cost-benefit analysis would have likely worked out better in this case. While the agency probably would have cited estimates made by NAM, Tulane, and others, it would have had no reason to reengineer commentator contributions or attempt to hide their flaws. A discussion free of such legerdemain would have been cheaper for the SEC to produce and public debate would have been enhanced. While NAM's and Tulane's figures would have likely entered the fray, their numbers would have lacked the SEC's imprimatur. Likewise, the quality of the SEC's analysis would not have suffered. Indeed, the discussion of the rule would have likely been more thoughtful had the SEC not been concerned about the judicial repercussions that could flow from acknowledging uncertainty regarding the rule's welfare consequences. In general, a thorough and less guarded qualitative discussion may very well be more illuminating than a speculative and cloudy quantitative one.

³⁵⁸ Vermeule, *supra* note 295, at 21.

³⁵⁹ See Sunstein, *Limits of Quantification*, *supra* note 12, at 1406-1413 (listing numerous hard cases).

³⁶⁰ See Coates, *supra* note 14, at 886.

³⁶¹ See *Id.* at 892-93.

Because QCBA is so complex, it is only through case studies that we can empirically assess its usefulness. While any one study provides an insufficient basis to conclude that the practice should be discarded, the growing body of research to which this Article contributes suggests that policymakers should reassess their longstanding commitment thereto.

VI. CONCLUSION

This Article shows that, despite years of uniform and unquestioned acceptance thereof, the SEC's estimate of initial compliance costs for the Conflict Minerals Rule was pure guesswork. Therefore, as pundits and policymakers continue to debate the merits of the Rule, and whether it should be used as a template for future supply-chain reform efforts in other contexts and in other countries, they should give the SEC's assessment of its costs minimal weight. More generally, our assessment of the SEC's effort, and the issues at stake in regulating conflict minerals, suggests that QCBA is not nearly the analytical tool that courts and policymakers seem to think it is. As such, this Article joins a growing literature that challenges its required use in regulatory analysis.

APPENDIX A: AN ASSESSMENT OF MODELING INPUTS AND SEC ALTERATIONS

This Appendix analyzes the basis for each input relied upon by NAM and Tulane in modeling the potential compliance costs associated with the Conflict Minerals Rule; it then analyzes the basis for each SEC alteration to their models. Neither the inputs nor the alterations rest on a sound empirical basis.

NAM Model Inputs			
Input Category	Input Figure	Rationale Provided, if Any	Assessment
Number of Public Companies that Would Submit Disclosures	5,994	This figure comes from the SEC's proposed rules. The SEC explained that it "arrived at this number by estimating the number of issuers that fall under all the SIC codes that our staff believes most likely to manufacture or contract to manufacture products with conflict minerals necessary to the functionality or production of products manufactured or contracted to be manufactured by those issuers." ³⁶²	The described approach is reasonable, but no information is provided to assess its validity.
Number of First-Tier Conflict-Mineral Suppliers	2,000	NAM stated only that it "surveyed a cross-section of its membership." ³⁶³	A survey is a reasonable approach, but no information is provided to assess this survey's validity. ³⁶⁴
Number of Employee Hours to Change Contracts with First-Tier Suppliers	2	NAM stated only that "companies conservatively estimate" this number of hours. ³⁶⁵ This estimate may have come from the survey noted above.	NAM's source is unclear. ³⁶⁶

³⁶² SEC Proposed Rule, *supra* note 95, at 80,966 n.176.

³⁶³ NAM Model, *supra* note 84, at 24 n.2.

³⁶⁴ See *supra* Part IV.B.

³⁶⁵ NAM Model, *supra* note 84, at 24.

³⁶⁶ See *supra* Part III.B.1.i.

NAM Model Inputs			
Input Category	Input Figure	Rationale Provided, if Any	Assessment
Cost Per Employee Hour to Change Legal Obligations	\$50	None provided. ³⁶⁷	No basis provided.
Cost to Upgrade IT Systems Per Issuer	\$1,000,000	NAM stated that the number is “based on previous changes to supply chain computer systems.” ³⁶⁸	While reasoning from analogous situations is reasonable, no basis is provided to assess the validity of doing so in this case.
Employee Time to Assess Credibility of Supplier Information	.5 hours	None provided. ³⁶⁹	No basis provided.
Cost Per Employee Hour to Assess Credibility of Supplier Information	\$50	None provided. ³⁷⁰	No basis provided.
Number of Companies that would Complete an Audit	4,500	NAM argued that 75% of issuers would be unable to rule out the Congo region as a potential source of their conflict minerals, thereby triggering the CMR and CMR-audit requirement. ³⁷¹	No basis provided.
Cost of a CMR Audit	\$100,000	NAM cited conversations “with several auditing firms and companies that use audits,” as well as estimates by NAM members. ³⁷²	Reasoning anecdotal and basis unclear. ³⁷³

³⁶⁷ See *supra* Part III.B.1.i.

³⁶⁸ NAM Model, *supra* note 84, at 24.

³⁶⁹ See *supra* Part III.B.1.iii.

³⁷⁰ See *supra* Part III.B.1.iii.

³⁷¹ See *supra* Part III.B.1.iv.

³⁷² NAM Model, *supra* note 84, at 25.

³⁷³ See *supra* Part IV.B.

NAM Model Inputs			
Input Category	Input Figure	Rationale Provided, if Any	Assessment
Number of Small- and Medium-Sized Manufacturers	278,000	None provided. ³⁷⁴	No basis provided.
Percent of Small- and Medium-Sized Manufacturers in Conflict Mineral Supply Chain	20%	None provided. ³⁷⁵	No basis provided.
Audit Cost for Small- and Medium-Sized Manufacturers	\$25,000	This figure was provided by the SEC's proposed rule. The SEC said this is the estimate of "[o]ne industry group," but provided no further details. ³⁷⁶	Nothing provided on which to assess validity.

Tulane Model Inputs			
Input Category	Input Figure	Rationale Provided, If Any	Assessment
Number of Public Companies that Would Submit Disclosures	5,994	This is the SEC estimate from the proposed rules. Tulane accepted it without explanation. ³⁷⁷	No basis provided.
Small Issuers Required to Comply with the Rules	72% of 5,994 or 4,316	Tulane calculated this number based on figures from the IPC survey. ³⁷⁸	The IPC survey is statistically insignificant and does not reflect the cross-section of public companies implicated by the rule. ³⁷⁹

³⁷⁴ See *supra* Part III.B.1.v.

³⁷⁵ See *supra* Part IV.B.

³⁷⁶ SEC Proposed Rule, *supra* note 95, at 80,966.

³⁷⁷ See *supra* Part III.B.2.i.

³⁷⁸ See *supra* Part III.B.2.i.

³⁷⁹ See *supra* Part IV.B.

Tulane Model Inputs			
Input Category	Input Figure	Rationale Provided, If Any	Assessment
Large Issuers Affected by the Rule	28% of 5,994 or 1,678	Tulane calculated this number based on figures from the IPC survey. ³⁸⁰	The IPC survey is statistically insignificant and does not reflect the cross-section of public companies implicated by the rule. ³⁸¹
Hours Required for Issuer Due Diligence	40 hours (small issuers) 100 hours (large issuers)	Tulane cited “information available from various experts in the industry (as well as [Tulane’s] own experiences in other sectors/studies).” ³⁸²	Anecdotal. ³⁸³
Cost Per Employee Hour for Issuer Due Diligence	\$50	None provided. ³⁸⁴	No basis provided.
Cost Per Consultant Hour for Issuer Due Diligence	\$200	Based on Tulane’s estimate of rates charged, and percent of work performed by, traditional and environmental consulting firms. ³⁸⁵	Tulane inappropriately cited SEC figures for traditional accounting firms; no basis provided as to how Tulane estimated the rates of environmental consultants or the proportion of work they would perform. ³⁸⁶
Proportion of Internal versus External Resources Used for Compliance Work	25% (small issuers) 10% (large issuers)	The 25% figure is based on the SEC’s estimate in its proposed rule; no basis provided for the 10% estimate. ³⁸⁷	The SEC provided no basis for its figure; the SEC’s figure was for all issuers, not just small issuers; Tulane provides no explanation for limiting its application or for its 10% figure. ³⁸⁸

³⁸⁰ See *supra* Part III.B.2.i.

³⁸¹ See *supra* Part IV.B.

³⁸² Tulane Model, *supra* note 85, at 12.

³⁸³ See *supra* Part IV.B

³⁸⁴ See *supra* Part III.B.2.i.

³⁸⁵ See *supra* Part III.B.2.i.

³⁸⁶ See *supra* Part III.B.2.i.

³⁸⁷ See *supra* Part III.B.2.i.

³⁸⁸ See *supra* Part III.B.2.i.

Tulane Model Inputs			
Input Category	Input Figure	Rationale Provided, If Any	Assessment
First-Tier Suppliers For Large Issuer	1,060	This figure is 53% of NAM's estimate. 53% is Tulane's calculation, based on figures from IPC, of the percent of suppliers that are conflict-minerals suppliers. ³⁸⁹	The IPC survey is statistically insignificant and does not reflect the cross-section of public companies implicated by the rule; Tulane unnecessarily derived its own figures rather than use IPC's. ³⁹⁰
First-Tier Suppliers For Small and Medium Issuer	86	Respondents in the IPC survey had, on average, 163 suppliers. This figure, 86, is 53% of 163 (Tulane's calculation, based on figures from IPC, of the percent of suppliers that are conflict-minerals suppliers). ³⁹¹	The IPC survey is statistically insignificant and does not reflect the cross-section of public companies implicated by the rule; Tulane unnecessarily derived its own figures rather than use IPC's. ³⁹²
Supplier Overlap Factor (an estimate of the extent to which issuers rely on the same suppliers)	60%	In Tulane's words, this figure is "based on our estimation that in general there is likely to be greater than a 50% customer overlap/mutuality throughout the supply chain, we chose 60% as a conservative overlap factor." ³⁹³	Conclusory logic. ³⁹⁴
Hours Required for Supplier Due Diligence	40 hours (small suppliers) 100 hours (large suppliers)	Tulane assumed that suppliers to small and large issuers would spend the same amount of time as small and large issuers, respectively. ³⁹⁵	No basis provided. ³⁹⁶

³⁸⁹ See *supra* Part III.B.2.ii.

³⁹⁰ See *supra* Part IV.B.

³⁹¹ See *supra* Part III.B.2.ii.

³⁹² See *supra* Part IV.B.

³⁹³ Tulane Model, *supra* note 85, at 18.

³⁹⁴ See *supra* Part III.B.2.ii.

³⁹⁵ See *supra* Part III.B.2.ii.

³⁹⁶ See *supra* Part III.B.2.ii.

Tulane Model Inputs			
Input Category	Input Figure	Rationale Provided, If Any	Assessment
Cost Per Employee Hour for Supplier Due Diligence	\$50	Tulane assumed that suppliers would pay employees the same amount as issuers. ³⁹⁷	No basis provided. ³⁹⁸
Cost Per Consultant Hour for Supplier Due Diligence	\$200	Tulane assumed that suppliers would pay consultants the same amount as issuers. ³⁹⁹	No basis provided. ⁴⁰⁰
Proportion of Internal versus External Resources Used for Compliance Work	25% (small suppliers) 10% (large suppliers)	Tulane assumed that suppliers to small and large issuers would hire consultants for the same proportion of work as small and large issuers, respectively. ⁴⁰¹	No basis provided. ⁴⁰²
Percentage of Issuers Required to Complete an Audit.	75%	Figure taken from NAM's model. ⁴⁰³	No basis provided. ⁴⁰⁴
Cost Per Audit (Small Issuer)	\$25,000	Figure taken from NAM's model. Tulane deemed "reasonable" NAM's assumption that \$25,000 would "cover the initiation of an audit for a small company with a simple supply chain." ⁴⁰⁵	Conclusory logic. ⁴⁰⁶
Cost Per Audit (Large Issuer)	\$100,000	Figure taken from NAM's model, with Tulane deeming it "reasonable." ⁴⁰⁷	Conclusory logic. ⁴⁰⁸

³⁹⁷ See *supra* Part III.B.2.ii.

³⁹⁸ See *supra* Part III.B.2.ii.

³⁹⁹ See *supra* Part III.B.2.ii.

⁴⁰⁰ See *supra* Part III.B.2.ii.

⁴⁰¹ See *supra* Part III.B.2.ii.

⁴⁰² See *supra* Part III.B.2.ii.

⁴⁰³ See *supra* Part III.B.2.iii.

⁴⁰⁴ See *supra* Part III.B.2.iii.

⁴⁰⁵ Tulane Model, *supra* note 85, at 22.

⁴⁰⁶ See *supra* Part IV.B.

⁴⁰⁷ Tulane Model, *supra* note 85, at 22.

⁴⁰⁸ See *supra* Part IV.B.

Tulane Model Inputs			
Input Category	Input Figure	Rationale Provided, If Any	Assessment
IT-Upgrade Cost for Small Issuers	\$205,000	Tulane calculated this number based on figures from the IPC survey. ⁴⁰⁹	The IPC survey is statistically insignificant and does not reflect the cross-section of public companies implicated by the rule. This figure is inappropriately based on 7 responses (out of 3,839 surveyed) about potential “hidden costs.” ⁴¹⁰
IT-Upgrade Costs for Large Issuers	\$1,000,000	Figure taken from NAM’s model. ⁴¹¹	No basis provided. ⁴¹²

SEC’s Modifications to Tulane			
Input Category	Input Figure	Rationale Provided, if Any	Assessment
IT-Upgrade Cost for Large Issuers	From \$1,000,000 to \$410,000	The SEC argued it was more reasonable to think large issuers would spend twice that of small issuers rather than several times their expenditures. ⁴¹³	No basis provided. ⁴¹⁴
First-Tier Suppliers Per Small Issuer	From 860,066 to 200,160	The SEC took NAM’s figure for the number of small- and medium-sized manufacturers in corporate supply chains, 278,000, and multiplied it by 72% (Tulane’s calculation for the percentage of small issuers); it defended this approach by referencing statistics affirming NAM’s figure. ⁴¹⁵	NAM’s assessment of the number of small- and medium sized manufacturers in corporate supply chains is irrelevant. ⁴¹⁶

⁴⁰⁹ See *supra* Part II.B.2.iv.

⁴¹⁰ See *Supra* Part IV.B.

⁴¹¹ NAM Model, *supra* note 84, at 25.

⁴¹² See *supra* Part III.B.2.iv.

⁴¹³ See *supra* Part III.B.3.ii.

⁴¹⁴ See *supra* Part IV.C.1.

⁴¹⁵ See *supra* Part III.B.3.iii.

⁴¹⁶ See *supra* Part IV.C.3.

SEC's Modifications to Tulane			
Input Category	Input Figure	Rationale Provided, if Any	Assessment
First-Tier Suppliers Per Large Issuer	From 148,459 to 77,840	The SEC took NAM's figure for the number of small- and medium-sized manufacturers in corporate supply chains, 278,000, and multiplied it by 28% (Tulane's calculation for the percentage of large issuers); it defended this approach by referencing statistics affirming NAM's figure. ⁴¹⁷	NAM's assessment of the number of small- and medium sized manufacturers in corporate supply chains is irrelevant. ⁴¹⁸

SEC's Modifications to NAM			
Assumption Category	Numerical Assumption	Rationale	Assessment
IT-Upgrade Cost	From \$1,000,000 to \$250,000	The average cost for small and large issuers based on the SEC's modification of Tulane's IT-upgrade figure. ⁴¹⁹	No basis provided. ⁴²⁰
Number of First Tier Suppliers	From 2,000 to 1,060	Arguing that NAM's original estimate required a "prudent reduction," ⁴²¹ the SEC chose this figure because it was about halfway between the number of suppliers reported by respondents in IPC's survey, 163, and NAM's original figure. ⁴²²	Arbitrary. ⁴²³

⁴¹⁷ See *supra* Part III.B.3.iii.

⁴¹⁸ See *supra* Part IV.C.3.

⁴¹⁹ See *supra* Part III.B.3.i.

⁴²⁰ *Supra* Part IV.C.1.

⁴²¹ SEC Final Rule, *supra* note 4, at 56,352.

⁴²² See *supra* Part III.B.3.ii.

⁴²³ *Supra* Part IV.C.2.