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Rhetorical Metrics

*Building Securities Regulation in America's Era of Booms
and Busts, 1890-1940*

Abstract

How do regulators regulate with metrics? This article offers a rhetorical approach to this question, using early U.S. securities regulation as a case in point, and reliance on credit ratings as empirical illustration. A rhetorical approach challenges economists' claim that metrics are limited to providing technical guidance to policy formation: the fact is that the role of metrics in regulation can be appreciated only if technical and social aspects are considered together. A rhetorical perspective also fills an important gap in sociological studies of "co-production" that claim that procedural deliberation enhances the legitimacy of regulation but underemphasize the role of quantification when procedural rules are lacking. This article suggests that rhetoric is not suboptimal or irrational but a vital form of deliberation in contexts of uncertainty, when decision-making requires some amount of persuasion outside a procedural context. I observe that metrics can be a powerful vehicle of rhetorical change. Two components of rhetorical metrics are highlighted. First are cognitive clutches, or the capacity to shift prevailing models of attention. Second are actionable arguments, the capacity to embed cognitive deviance into a compelling argument for change. I conclude with reflections on the legacy of rhetorical decisions on current policy debates.

Keywords: Quantification and Regulation; Rhetoric; Institutional Change; Credit Ratings; Interwar United States Financial History.

Regulation is a central institution of market economies. According to handbook treatments, regulation shapes the conduct of firms and individuals by way of prescriptions and proscriptions, and markets do not stand outside it nor can they function without it. Today, what we call "regulation" involves a variety of state, civil and private projects at the local, national, and transnational levels. Against all expectations, the regulatory embeddedness of markets is not weakening, but rather gaining ground [Levi-Faur 2005]. An activity of

market construction, regulation is also constructed by its metrics: regulation works best when its contractual features are enforced against clear, quantifiable standards. Under such circumstances, compliance with regulation is calculative rather than based on an appeal to moral responsibility.

How do regulators regulate with metrics? Economists offer two simple answers. First, they insist on a rigid separation between regulation and politics: regulation is cultivated for its economic utility, and its deepest problems arise out of issues of technical specification. Second, quantification helps regulators specify the most cost-effective rule among those available [Posner 1973]. For economic theory, then, metrics bring regulation closer to rational agency by providing ideologically neutral guidance to policy determination. This may be fine when regulators have stable preferences and utility calculus generates univocal results. But what happens when regulators face multiple utility equilibria [Mirowski 1989] or when they are unable to assess with a degree of certainty the effects of their action in the real world? And what about contexts where rule-making interacts with democratic rules, social norms or political interests? Can metrics drive regulation beyond its technical significance? Do they have a symbolic role in the regulatory process? If so, what is it, and how do we assess it?

Despite broad sociological acknowledgement of the central importance of quantification in policy [Desrosières 2002; Porter 1995; Power 1997; Espeland and Stevens 1998a], these questions remain largely unsettled. Sociology's main model for grasping the interactional context of quantification and regulation is the theme of "co-production" developed in the science and technology studies (STS) literature. Co-production is shorthand for the proposition that social and technical developments are discussed jointly in policy through a process of mutual accommodation [Jasanoff 2004; Shapin and Schaffer 1985]. On the one hand, regulators mobilize quantitative models as technical resources to legitimate normative projects and regulate in publicly accountable ways. On the other hand, such models are not immediately authoritative without negotiations between technical experts and regulators about what diagnostics count as credible, and how they should be presented and interpreted.

A useful insight of co-production is that the social and the technical are never distinct: regulation acquires legitimacy in sociotechnical deliberations. A related, but in my view problematic, insight is that sociotechnical deliberations are enhanced through formal procedures that stress compromise and negotiation, such as scientific panels and

advisory committees [Jasanoff 1995].¹ We know little, however, about the role of quantification in regulation outside a procedural context. More specifically, we lack accounts of the ways in which numbers legitimate important changes in regulation when deliberative forums do not yet exist or are unstable because of fast-paced or distressed market environments. Under such circumstances, how do metrics drive regulation? And what sort of symbolic properties do metrics possess to convince people to accept significant change?

To be sure, symbolic resources like narratives, dramaturgy, and rhetoric have been emphasized as important factors in the ways in which regulators settle debates and legitimate change [Hilgartner 2000; Jasanoff 1990]. But it is not yet clear if symbolic resources are intrinsic to any policy deliberation or if they are enabled in specific and historically-situated contexts. Here, co-production should be brought into more explicit dialogue with institutional theory: the fact is that how regulators regulate with metrics varies in different contexts. In routine contexts, regulators follow steady scripts incorporated in deliberative procedures, and quantification is mostly reproductive of prevailing models of regulation. But in fast-paced or distressed environments, models are contested, procedural routines become unsettled, and regulators use quantification as a symbolic resource to legitimate institutional deviance. At that very moment, metrics are less about reproducing extant models and more about engineering possible paths of creative change. Quantification becomes the main site where regulators wage and win rhetoric battles about what should be regulated and how. Such rhetorical controversies typically open and close within a short time frame, but their legacy often lives on in future generations. I examine one such controversy to explore how regulation and quantification are co-produced in rhetoric.

My case covers the 1890-1940 period, America's first era of booms and busts. Speculation on the stock exchange disrupted economic welfare and was soon to undermine the Federal Reserve System, then in its early years. I assess the role of quantification in the building of early U.S. securities regulations. In particular, I recount the first instances of regulatory reliance on ratings from 1926 until 1938. The use of credit ratings in financial regulation is among the most interesting and consequential instances of regulating with metrics. Today, regulators in Washington DC and Frankfurt use ratings as

¹ The claim that procedural rules of deliberation improve the legitimacy of policy decisions can also be found in studies of deliberative democracy [Cohen 1997; Benhabib 1996].

references in a wide array of prudential rules. Besides private actors, ratings are also used to regulate public risks. For instance, the European Central Bank evaluates the sovereign bonds of Eurozone members based on their ratings [Pénet 2014: 164-187]. The 2008 financial crisis has brought ratings to the forefront of the U.S. regulatory debate as well as in Europe, where the Greek debt crisis revealed the pervasive influence of ratings in Eurozone supervisory procedures [Pénet and Mallard 2014].

Much has been said about the constitutive role of calculative devices like credit ratings on financial market developments [Muniesa, Millo, and Callon 2007; Lamont 2012], much less on the reasons why regulators have been using them in regulation for almost a century. This is unfortunate because, as this study intends to show, the constitutive potential of any particular information technology rests ultimately on a whole series of bureaucratic interactions about what to regulate, how, and with whom. Likewise, studies assessing the epistemic deficiencies of ratings [Sinclair 2010; Flandreau, Gaillard and Packer 2011; MacKenzie 2011], now make up an established literature. But comparatively less effort has gone into identifying the factors driving the incorporation of deficient metrics in regulation.

As I will show, how and why ratings entered regulation is entirely congruent with a co-productionist model: ratings had an endogenous role in the design of regulation; in turn, regulation bestowed ratings, then a rather obscure scientific development, with a form of authority that they did not previously possess. And yet, the linking of ratings and regulation attests to a peculiar deliberative context of science and society. It was not a case of change legitimated through repeated negotiations in institutional worksites. The sociohistorical analysis that follows shows how regulators used ratings as rhetorical resources to represent and legitimate profound change in the fabric of financial regulation. A thick analysis of a single case of regulatory dispute does not preclude generalization. The research design of this article was chosen not only to obtain an empirical grasp on early U.S. securities regulation but also to gain analytical leverage on the general practice of regulating with metrics.

This article offers three insights. First, rhetoric is not suboptimal or irrational but rather a vital component of regulation when important decisions occur without a procedural context. Second, rhetorical metrics can be a vehicle of institutional change in regulation. Two components of rhetorical metrics are highlighted: cognitive clutches and actionable arguments. Finally, this research suggests that

decisions of a rhetorical nature tend to become naturalized in subsequent debates. Therefore, the legacy of antecedent determination is forgotten and rhetorical arrangements can become sticky, sometimes persisting long after their inefficiency has become evident.

Rhetorical Metrics

The theoretical argument of this article is based on three insights. First, regulators live simultaneously in the worlds of normative expectation and technical specification, and they seldom consider one world without thinking about the other. Thus, regulatory metrics are not limited to providing technical guidance to policy determination: the role of numbers in regulation is constructed in sociotechnical deliberations. Second, the menu of social and technical issues deliberated in regulation is patterned after prevailing institutional models. Therefore, legitimating new rules that do not fit a prevailing model requires displacing that model in order to establish new sociotechnical legitimacy. Third, I argue that this can be done through the use of rhetoric.

Metrics

Metrics are standards of measurement. In science, units of length, mass or electric potential are used for measuring the physical world. Regulators use metrics to categorize and standardize markets activities. Regulatory metrics involve commensuration, defined as “the transformation of different qualities into a common metric” [Espeland and Stevens 1998b: 314]. Regulators use rankings, ratings and indexes as standards and referentials for the valuation and supervision of market activities. While metrics are fundamentally about categorization, they also imply quantification, defined as “the production and communication of numbers” [Espeland and Stevens 1998a: 402]. Rating grades can generate numbers or ratios: for instance (the following are hypothetical examples) “30% of all AAA-rated securities were in default last month.” With price indexes, regulators can also communicate important changes in business cycles: “inflation has increased three-fold since last year.” In other words, metrics are at once standards, categories and numbers.

Metrics and the numbers they generate play a fundamental role in regulation. As standards, they help convert projects into a concrete course of action. Sociologists have noted that normative intents remain putative unless instrumentation of some kind converts them into policy [Lascoumes and Le Galès 2007]. Food purity levels, credit ratings and carbon footprints have nothing else in common except that, at different times and places, these metrics have all served to translate regulation into standardized rules. Not unsurprisingly, the development of an administrative capacity to produce metrics has been linked to successful regulation [Schneiberg and Bartley 2001; Davis *et al.* 2012]. But epistemic irregularities and representational challenges in standard definitions of risk have been reported [Williams 2012; Scott 1999]. The processes by which risk metrics are evaded [Thiemann and Lepoutre 2017; Carruthers and Lamoreaux 2016] or reshaped through interactions with regulated groups [Huault, Lazega and Richard 2012] have also garnered much attention. Comparatively less effort has gone into identifying the endogenous role of metrics in regulatory-building processes.

Metrics have a legitimating role in regulation. Numbers are technologies of trust [Porter 1995]: they confer legitimacy and authority to policy projects by making them amenable to demands for objectivity, impartiality and accountability. Models of quantification also have an important role in the development of new projects beyond the legitimation of preordained ones: new metrics are forged, unknown risk regularities are discovered, and regulators begin to assign value to problems that once stood outside the scope of regulation. This productive pattern is attested at the turn of the last century, when the first hygienic tables by the U.S. Ministry of Chemistry established food purity, then an abstract notion, as a new object of regulatory intervention [Young 1989: 151-157].

Finally, the significance of metrics in regulation is to be shaped by regulation itself. Metrics do not develop in any way removed from policy projects. Sociologists have noted that major innovations in quantification have historically followed state-building developments [Desrosières 2002]. Scientific debates about how to represent risk are often ratified in regulation. For instance, Fourcade [2011] shows how “contingent valuation” supplanted alternative methods and metrics for valuing the costs of environmental disasters because it resonated with regulatory models of risk and control. Metrics, thus, become authoritative not simply by virtue of their intrinsic truth or superior technical design, but also due to their proximity to prevailing

regulatory models. Shifts in models can also curtail numbers: in France, the precedent of collecting information on Jewish people during World War II made ethnic statistics intolerable, and prompted the state to place a ban on them [Simon 2008].

Overall, sociological research on regulation and quantification provides broad support for the co-productionist lessons developed in STS: metrics legitimize regulation and, in turn, the credibility of metrics is a regulatory achievement. At the same time, these studies also point to wider institutional models patterning sociotechnical interactions. How regulators regulate with metrics, the central issue of this article, is not entirely clear without a broader institutional perspective.

Institutional Models

An “institutionally embedded” view [Carruthers 1996; Fligstein 2002; Abolafia and Kilduff 1988] situates regulatory processes against prevailing models and schemas that constrain agency, and within which perspectives of change emerge. A regulatory model contains cognitive frames and conceptions of control. Cognitive frames provide scripts and templates that distribute the attention of actors and orient the ways in which they make sense of their environment [Friedland and Alford 1991; Ocasio 1997]. Conceptions of control reflect preferred ways of exerting authority and controlling situations [Fligstein 1996]. Institutional models channel action into prevailing templates of cognitive security and professional order. Regulatory decisions reproduce models, making them sticky.

And yet models change. In institutional theory, attempts to change or displace prevailing models are characterized as acts of institutional entrepreneurship [DiMaggio 1988]. Institutional entrepreneurs exploit contradictions and ambiguities in extant models to justify institutional deviance [Seo and Creed 2002]. But how and why entrepreneurial efforts succeed is not clear without a situated perspective on the processes by which actors mobilize interpretative resources to make comprehensible the desirability and relevance of change [Fligstein 1997]. Here, co-production offers precision in understanding the concrete deliberations through which actors successfully recreate local practices around insurgent models. Nevertheless, shifts in models tend to generate considerably more contention and contingency than can be absorbed in procedural deliberation.

Procedural debates in institutional worksites may fuel conflict rather than providing a negotiated way out of it. Under such circumstances, the manipulation of deliberative procedures is key to the success of entrepreneurial efforts.

Studies have emphasized cultural and symbolic resources to gain perspective on the success of insurgent institutional processes [Ocasio and Joseph 2005; Rao and Giorgi 2006]. Discursive practices have been found to facilitate the restructuring of local practices around new models [Hirsch and de Soucey 2006; Rao, Monin and Durand 2003]. Recent studies have extended this discursive approach to quantification, with the observation that numbers provide activist resources to manipulate prevailing models and legitimate contested policies [Bruno, Didier and Prévieux 2015; Espeland 2015]. The weaponization of statistics and “numerical argumentation” [Deringer 2018: 231] can often be key to winning a policy debate.

Rhetoric

Rhetoric is the use of means of persuasion for strategic ends. Regulation is not usually categorized as rhetorical, except perhaps to characterize the use of political posturing and ideological arguments in lieu of the prudent and rational guidelines set out by economics. The productive aspects of rhetoric have become clearer, however, in recent studies showing the centrality of language, discourses and narratives in structuring social change. Rhetorical factors have been emphasized in the emergence of economic models [Carruthers and Espeland 1991; McCloskey 1998], strategies of valuation [Degenshein 2017], and organizational change [Suddaby and Greenwood 2005]. This article demonstrates that rhetoric is also an important driver of institutional change in regulation.

Recently, rhetoric has become somewhat of a buzzword to characterize any social activity that requires legitimation. To avoid any misunderstandings, I make two preliminary remarks. First, rhetoric is not an intrinsic property of regulation but a mechanism of policy deliberation. As a mechanism, rhetoric is enabled and constrained depending on the degree of stability of the bureaucratic exchange in which regulation is debated. When regulation has a stable platform of exchange, regulators accommodate social and technical aspects through routine procedures, without the need of rhetoric. In contexts of change, however, routines become unsettled, extant models of

exchange are shattered, and regulators no longer know what “counts” or what doing the “right” thing means. Decision-making turns contentious, and policy formation rests on something other than procedural consultations. Here, rhetoric becomes a vital mechanism through which important decisions are taken. Second, I only assess rhetoric in relation to metrics. Many things can be rhetorical in regulation. Individual behavior can be rhetorical, when charismatic regulators mobilize negotiating skills and persuasive language to move a policy debate. Additionally, organizations with communicative imperatives insert rhetorical tropes into public speech so as to shape audience expectations [Moretti and Pestre 2015; Holmes 2013]. But to say that metrics carry rhetorical significance is not intuitive and requires greater elaboration.

Rhetorical metrics have two components. The first is a *cognitive clutch*, or the capacity to shift prevailing models of attention.² Regulators cannot pay attention to everything with the same intensity. Regulation verifies the broad claim made in organizational theory that cognition is limited and distributed [March and Olsen 1976; Ocasio 1997]. Precisely how regulators allocate attention depends on the level at which available metrics are applied. Metrics may measure different layers of risk, for instance: banks’ exposure (firm-level metrics) or changes in monetary aggregates (sectorial-level). Available metrics, thus, structure action at a given level or set of levels. What metrics measure may, however, change. Innovations in quantification can displace the level at which regulators ascertain market risks: new regularities are discovered, and regulators come to alternative understandings of risk and conceptions of control. For instance, as this study will show, insurgent metrics can capture risks at the level of financial instruments (object-level) that were previously unaccounted for by firm—or sectorial-level metrics. Insurgent metrics may shift—“clutch”—the locus of attention and invite regulators to consider new avenues for policy action. Such instances are rare but when they occur they typically bring out conflict because the force of routine makes the reversal of extant arrangements difficult and costly. Thus, with the mechanism of clutch, I suggest that regulators can acquire insurgent metrics as rhetorical resources to expose contradictions in prevailing models and legitimate change. As cognitive clutch, new metrics can unleash a process of “cognitive liberation” [McAdam 1982] or

² My use of the term “clutch” comes from the mechanics of driving. In a car, pressing the clutch pedal is how the driver shifts gears.

a “liberating effect” [Bruno, Didier and Prévieux 2015: 14] by which regulators realize that extant models can be rearranged.

Nevertheless, clutching cognition is often insufficient to produce change. The second component of rhetorical metrics is *actionable arguments*, or the capacity of a metric to embed cognitive deviance into a compelling argument for change. Claims of inaccuracy or inefficiency are often inadequate to legitimate shifts in models. Proponents of change must find persuasive language to convince constituencies of the desirability and relevance of change. Regulators can use metrics to articulate three broad types of persuasive arguments in a debate: confrontational arguments, when regulators seek to convince their opponents of the validity of an insurgent model; conciliatory arguments, when regulators attempt to deconstruct pitfalls in counter-claims made by opponents; and interventionist arguments, when they try to justify some action against an impending threat. The former two arguments arise most clearly in a rhetorical contest over a plurality of regulatory rules. The latter points to the force of rhetoric in legitimating action against the cost of inaction.

This article focuses on rhetorical struggles about securities regulations articulated in the flesh of a bureaucratic correspondence from the Progressive Era to the New Deal. To investigate this rhetorical exchange, I examined the correspondence between Benjamin Strong and Carl Snyder, respectively Governor and chief statistician of the Federal Reserve Bank of New York, as well as additional data collected through multi-site archival research. The Strong-Snyder correspondence appears in the Papers of Benjamin Strong digitalized by the Reserve Bank of Saint Louis.³ At the National Archives in College Park, Maryland, I consulted the Records of the Federal Reserve System, Record Group 82. At the Reserve Bank of New York, I used the Central Files Collection. At the Reserve Bank of Kansas City, MO, I used the Correspondence of the Chief National Bank Examiner, 10th Federal Reserve District and the Bank Examiner’s Reports.

This article is organized as follows. I begin by discussing early attempts to regulate speculation during the Progressive Era (1890-1920). These attempts failed because the social and technical aspects of regulation developed separately rather than jointly in sociotechnical deliberations. Second, I analyze how regulators resumed attempts to regulate speculation during the interwar years (1920-1938), in a deliberative context where procedural rules of exchange were lacking. I

³ Cf. <https://fraser.stlouisfed.org/>

assess the rhetorical value of metrics in the adjudication of a bitter dispute over rival models of market control. In particular, I provide empirical evidence of how, circa 1926, New York regulators used creative conflict resolution by building credit ratings into regulation. I further analyze the swift rating colonization of U.S. regulation from 1930 to 1936. Finally, I discuss the Washington Ruling of 1937, the first comprehensive attempt to ratify the use of ratings in regulation. I conclude by assessing the legacy of rhetorical decisions in current regulatory debates.

Regulation Before Sociotechnical Deliberations

U.S. finance capitalism was of minor importance until after the Civil War, when monetary stability and the institutionalization of a network of stock exchanges caused a significant increase in the volume and variety of securities issuances.⁴ The stock market crash of 1893 brought in its wake a cascade of corporate bankruptcies and violent labor conflict. Twenty years before the foundation of the Federal Reserve, legislators were at the forefront of designing rules of market control.⁵ Unfortunately, Congress did not possess an administrative capacity to develop technical standards. And even if it did, metrics and their promises of “mechanical objectivity” [Porter 1995: 149] were not yet a natural language among U.S. regulators who preferred to delegate the careful analysis of the facts to the judgment of investors. The Progressive Era thus offers an experimental case in which to observe the development of regulation before the establishment of sociotechnical deliberations.

Securities exchanges generated important questions of a general regulatory nature [Stäheli 2013: 43-92]. Legislators recognized that securities markets offered financing opportunities for commerce, but they did not ignore the problems caused by a distinct class of speculators interested not in the securities’ underlying attributes but in the prospect of obtaining a profit from changes in prices. As speculation began to disrupt economic welfare, legislators focused on one critical question that continues to confuse regulators today: what

⁴ Securities are financial claims turned into a tradable object. They can be claims on debt (bonds) or equity (stocks).

⁵ The Office of the Comptroller of the Currency (OCC), the main Federal regula-

tory agency and presumptive venue to engineer such rules, did not yet have mandate to regulate securities.

is a sound investment and what model of regulation should be used to distinguish permissible from impermissible transactions?

The core of the debate was the problematic reality of securities: they bore no relation to precious metals of “intrinsic” value, and had the value that exchange participants gave them. In a statement that captured the frame of mind of many legislators, Nevada Senator John Jones noted that “value, being a conception of the mind, cannot be intrinsic or inherent. This cannot be difficult to perceive when we bear in mind the teaching of science, that color does not reside in the object in which we appear to see it, but is an attribute of the eye itself, and that sound is not a quality of bodies, but a property of the human ear” [U.S. Congress 1893: 10]. This mental journey into the meaning of value implied that, just like color or sound, financial value could be assessed not in the intrinsic attributes of securities *objects* but in the character of the human *subjects*. Based on that cognitive frame, legislators embarked on an effort to regulate the trading public, and policy became a matter of sorting between financially literate traders having an “eye” from those unfit or unskilled to scientific conduct.

The insistence placed upon financial literacy also pervaded scholars’ framing of exchange value. Max Weber, assessing the economic function of the stock exchange, noted that “It is all a matter of the *persons* involved” [(1894) 2000b: 332, emphasis in original]. He praised the virtues of the “strong hands” and the “large-scale capital-holders” on financial stability and advocated taking exclusionary measures against the “horde of small speculators armed with practically nothing beyond good lungs, a little notebook, and a pencil” [(1894) 2000a: 367].

In Europe, state authorities passed laws mandating the exclusion of small speculators from exchange floors.⁶ But calls to regulate the trading public were nowhere more controversial than in the U.S. for political reasons related to industry structure. Because of a ban on branch banking, the U.S. banking sector was a loose network of small banks, most of them located in rural areas [Bordo, Redish and Rockoff 2015]⁷. These were viewed by the financiers of the urban northeast as paragons of provincialism and inefficacy. Such critics were well deserved since they often operated despite elementary rules of

⁶ In Germany, the 1896 Börse Act imposed entry controls and restrictions over lists of traded securities.

⁷ Even large U.S. banks were small in comparison to their European counterparts: the National City Bank, the largest U.S. bank

in 1913 with capitalization of £57 million was not part of the world’s largest ten banks, a ranking dominated by English, French, and German banks with capitalization in excess of £100 million [Cassis 2011: 176].

prudence. But the model of financial literacy ran counter to a strong Jacksonian tradition of democratic inclusion: agrarian and antitrust interests in Congress saw risk-taking as a fundamental right in a free market economy, and opposed any forms of public control of securities exchanges [Hawley (1966) 2015: 312]. As a result, entry controls were pursued by the stock exchanges themselves as measures of self-regulation.⁸ The private enclosure of exchange floors expelled small and amateur traders from exchange floors but it did not stop them from speculating: despite private membership controls, the “small hands” continued to finance securities purchases on margin in call loans to New York brokers.

During the Panic of 1907, the market value of securities dropped 50%, destroying networks of trust, with dramatic consequences for depositors. Large volumes of watered stocks and fictitious securities brought heavy losses, hurting all investors irrespective of literacy or size [O’Sullivan 2016: 189-230]. Unsound securities attributes pointed to elements of issuer-risk that were not directly about the education of traders. Nevertheless, public authorities continued to emphasize behavioral remedies to financial instability. New York Governor Charles Hughes reaffirmed calls to distinguish transactions “carried on by persons of means and experience [from those] carried on by persons without these qualifications” [Hughes Committee 1909: 4]. Unfortunately, the regulation of the trading public failed to secure political support, thanks in part to a public campaign orchestrated by the NYSE portraying America as a nation of investors [Ott 2009]. But even if it did, it was a normative project without a concrete course of action: financial literacy resisted standardization, as it was virtually impossible for public authorities to assess with a degree of certainty how knowledgeable a trader was. Meanwhile, the risk attributes of securities were abstract notions and remained unregulated. Expertise at the level of tradable objects was developed for the first time by private statistical agencies, affording them an important regulatory role before the advent of the Federal Reserve in 1913.

Financial expertise experienced a drastic reorientation when private firms began to condense information into forecasts. Like legislators, forecasters reckoned that the trading public consisted of a majority of small traders with low management resources and little knowledge of financial risk. But in spite of calls to regulate the trading

⁸ The New York Stock Exchange was a private association of brokers. It became publicly registered only in 1934.

public on a hypothetical criterion of literacy, forecasters substantiated the growing popular perception after the Panic of 1907 that, since the illiterate speculator could not be inculcated or prevented from trading, the lesser evil was to “accept the services of professional speculators to enable him to speculate.”⁹ Among forecasters were rating agencies like Moody’s Investors Service. In 1909, John Moody began to rate the risk incorporated in the bonds issued by railroad companies, borrowing the rating format from mercantile agencies [Olegario, 2006].¹⁰ The informational reach of rating forecasts was centered on businesses and their securities issues. A rating forecast appraised all local environmental attributes defining the “intrinsic” quality of a security on a scale from “AAA” to “D”. Investors used rating-implied measures of intrinsic quality to identify instances of over- or under-valuation in securities pricing.

Circa 1910, the rating business was established as a profession and an industry [Friedman 2013]. Ratings quickly became popular as a way of ascertaining economic facts and maintaining transparency in lending and borrowing transactions. However, it is unclear how much investors’ use of them was based on trust or reputation. Investment recommendations were black boxes: rating firms did not explain how they arrived at judgment, making reverse engineering impossible. And since they did not publish records of performance, investors could not assess forecasting accuracy. Presumably, the source of investors’ interest in ratings was more cultural and symbolic than based on their reputation as providers of accurate information.¹¹ Accuracy notwithstanding, ratings possessed many desirable properties. They provided simple, visual representation of what people understood only impressionistically. Nature-evoking notions like intrinsic value grounded investment decisions in a reassuring principle of stability, beyond the seemingly chaotic behavior of the market. In this way, ratings talked and possessed discursive significance. In particular, intrinsic value evoked the value attributes of gold. But, unlike gold, whose value inhered from nature, the intrinsic value of bonds derived from a judgment expressed on a rating scale.

⁹ “Speculation as an Art,” *New York Times*, July 27, 1913.

¹⁰ In 1914, Moody’s expanded its rating coverage to public utility, municipal, and industrial bonds. Poor’s began issuing ratings for all four industries in 1922, followed by Standard Statistics and Fitch in 1924. For a useful summary of the origins of the rating

industry, see Flandreau, Gaillard and Packer [2011: 502–507]

¹¹ According to a reputational view, “rating agencies exist in a competitive market of information providers and live or die based on their reputational capital” [Partnoy 1999: 635].

Ratings shaped investment decisions and, in so doing, they performed a regulatory role. But their capacity to standardize such decisions was limited in the absence of an external source of ratification. In this instance, private metrics had only latent regulatory authority because the rating industry was not backed by any structures of legitimacy on what counted as credible knowledge. Unregulated and unrated, the rating industry developed rival standards of risk: a rating assessment by Poor's was not commensurable with a rating by Moody's, which was difficult to compare with a Fitch rating. Private metrics possessed currency only within the narrow perimeter of their subscription base, thus weakening their capacity to standardize markets.

To summarize, the Progressive Era testifies to the difficult rise of regulation when policy intents and technical standards develop separately rather than interactively in sociotechnical debates. The model of financial literacy endorsed by legislators was circumscribed to behavioral injunctions directed at investors. Based on an appeal to moral responsibility, this model was restricted to being purely platonic, without any impact on securities transactions. Forecasters' metrics too failed to normalize exchange because they lacked authority. A co-productionist perspective suggests that technical resources are implicated in the development of normative projects. So why didn't legislators develop metrics to legitimate action at the level of securities? This is unclear without an institutional perspective. The prevailing model of financial literacy narrowed down the scope of legitimate action to the level of individual traders. Without statistical resources to clutch attention to the level of financial instruments, legislators did not see that securities in circulation had different merits. Hence securities were unregulated.

The Progressive Era legacy of failure would have important consequences on future courses of action. After the Federal Reserve Act of 1913, regulators became an actor in statistical production, devising their own metrics to ascertain and regulate financial developments. Metrics directed regulators to consider models of policy engagement at broader levels, beyond the person of traders. But regulators would also discover the meaning of developing statistical capacity in a context where private agencies were the prime movers, giving them an influence in future regulatory debates. The following section discusses the interactional context of science and society during the formative period of the Federal Reserve System (hereafter the "System").

Sociotechnical Deliberations Without Procedures

The System was established with the purpose of furnishing currency via the rediscounting of bank loans arising from financing trade or production (“real bills” in economic parlance). The founders expected to adjust the monetary supply according to the productive needs of commerce. Yet, a major concern was the discovery that banks engaged in speculative trading using Federal credit, thus linking their own balance sheet position with that of the System. Speculative use of Federal credit was a major cause for concern, but regulators were divided as to what solutions the System could offer.

The debate on speculation polarized into two positions, each reflecting a distinct model of regulation. The “qualitative” position prescribed direct controls of banks’ investments to ensure that Federal lending was used to finance the productive needs of commerce. In contrast, the “quantitative” perspective favored making changes in the discount rate and government bond sales in the open market to regulate the cost and availability of credit and deter speculative absorption of Federal credit. The qualitative stance of regulation was put forward by the Federal Reserve Board (hereafter the “Board”) in continuity with the real bills doctrine, the cornerstone of the Federal Reserve Act.¹² It received the backing of the System’s founders, powerful figures in Congress such as Carter Glass, and much of the financial press. Advocates of the quantitative doctrine congregated at the Federal Reserve Bank of New York (hereafter “New York”) governed by Benjamin Strong. Among them were prominent economists such as John Maynard Keynes and Gustav Cassel who praised the countercyclical effects of open market operations. Bankers also tended to back New York, not because they fully adhered to the theoretical underpinnings of the quantitative position, but because they considered the Board a threat against the regional character of the System. Patterned into this doctrinal exchange was a political conflict over decision-making: the Federal Reserve statutes did not clarify who from the Board and New York was the primary locus of power [Meltzer 2003: 137-138].

The fierce battle waged by the champions of each camp started after the war and continued unabated until the dawn of the Hoover

¹² The Board was a politically-appointed supervisory body overseeing the System from Washington. The 1913 Act also organized a network of twelve regional Reserve banks to maintain decision-making at the local level.

administration. This debate was crucial because each camp developed distinct cognitive frames about the nature of financial risk and rival conceptions of market control. In this contest over regulatory models, the level at which regulation was exercised was the most contested issues. The Board urged action at the bank level to gain more active control over banks' securities investments. Unfortunately, the legal basis for direct supervision was specious under the 1913 Act and, in any event, the Board lacked the sort of granular information at the level of bank units that qualitative action required. New York, on the other hand, viewed speculation as an issue of secondary order to the quantity of money in circulation, which it proposed to regulate on the basis of sectorial-level assessments of financial conditions. This sectorial approach afforded the regulation at-a-distance of a wide spectrum of financial problems but, according to its critics, it also made difficult the incarnation of a policy engagement at the level of the thousands of bank units and their securities transactions.

This level-perspective on regulation indicates that speculation could not be read in the terms of either of the two models. Each camp relied on an incomplete policy stance. The Board and New York justified their respective positions on speculation based on something the other did not see or did not want to see. As historians of the Federal Reserve have noted, this conflict paralyzed policy from the mid-1920s and was a major cause of the Great Depression [Friedman and Schwartz 1963: 254-265]. While entirely accurate, this representation is also partial: the same regulators who were pulled into the policy standoff also sought to find innovative ways to duck and dilute it. Perhaps the most interesting sociological aspect of the dispute was to provide fertile ground for regulators to invent and justify new policy paths under significant pressure.

In this instance, creative conflict resolution was not pursued procedurally à la Jasanoff in official sites of deliberation. During the interwar period, the System was young in years and confronted the usual teething troubles associated with new ventures. Because the nexus of power was untested and untried, actors acted outside role identities and most decisions were taken outside institutional work-sites. Official bodies like the Open Market Investment Committee served more as sites to voice disagreements and wage conflicts over decisions already taken than as forums to build consensus. As for advisory committees, they were few and their function was not to

generate research but to give private interests a vehicle for lobbying regulation.¹³ Without a stable platform to unify debates, each camp began to construct its own deliberative sites and forums, in the hope of shaping the regulatory debate.

In the following section, I analyze how each camp laboring under the paradox of its own models engaged in a rhetorical exchange about metrics. The mobilization of metrics was key to resolving debates over competing projects. In this exchange, the strength of rival models depended on how well these were articulated and sustained in metrics. Those with metrics had leverage: while the Board struggled to lay down its qualitative position into technical standards, New York successfully stabilized quantitative policy into innovative metrics to become the dominant central banking authority of the 1920s.

A Rhetoric Of Metrics

In the early 1920s, the System began developing an independent research activity. Statistical capacity was an integral component of the regulatory-building process. And, in many ways, the buildup of research activities became patterned after the conflicted exchange discussed above. The Board and New York had their own team of statisticians organized into distinct research divisions. Statisticians worked in intimate connection with regulators, and they seldom considered scientific projects in any abstract or theoretical fashion. The development of metrics was part of an entrepreneurial effort to justify institutional deviance. Metrics provided cognitive clutch for use by regulators in articulating the relevance of their respective models and creating the impetus for change. Regulators derived from them three actionable arguments to persuade constituencies of the desirability and relevance of contested decisions.

Metrics of Confrontation

The Federal Reserve of New York was the leading regulatory authority of the 1920s. A major protagonist in New York's dominance

¹³ The main advisory body was the Federal Advisory Council, a group of twelve private bankers elected by the reserve banks to advise the Board on business conditions and monetary policy. The Council did not

produce research and its main purpose was to give banks a direct line of influence on the Board [Federal Reserve Bank of Saint Louis 1949].

over the Board was Carl Snyder, hired in 1920 to oversee New York's statistical research. Snyder was an early developer with Irving Fisher of quantity equations to express the price level in terms of the quantity of money in circulation [Friedman 1970]. As New York's chief statistician, his main work involved pooling statistics on prices, production, trade and employment into synthetic indexes. Snyder's most significant creation was the General Price Level index formalizing the assumptions made by the quantitative camp that the quantity of money could be used to influence the price level. Based on changes registered in the index, regulators could infer expansive or restrictive monetary policy decisions. Snyder was the first System statistician to provide an empirical foundation for quantity theory, the precursor of monetarism [Garvy 1978].

The adversarial relationships between the Board and New York inspired Snyder with a militant faith in the potency of indexes to serve as a guide for policy formation. This is reflected in the correspondence between Snyder and Benjamin Strong, the governor of the Federal Reserve Bank of New York: "We must get some kind of automatic rule back into the making of the bank rate, and... it cannot be left to the conflicting views and interests of several bodies of men, as it is now" (Snyder to Strong, April 19, 1923). He proposed to override the System's conflict-ridden political organs by making indexes the basis of the technocratic conduct of the regulatory activity so to achieve "automatic prosperity" (Snyder to Strong, May 1, 1923).¹⁴ Much to the irritation of the Board, Snyder relentlessly advertised his militant thoughts in the *American Economic Review* [Snyder 1923] and in frequent lectures at the American Academy of Political Science, hoping to build support within and outside the System.

According to Strong's biographer, Snyder was "the economist who probably had the greatest influence" over New York's governor [Chandler 1958: 51]. This is a disconcerting statement given that Snyder mostly resented and kept away from the routine research activities of the statistical division. His only formal engagements were contributions to the Bank's weekly *Business and Financial Summary*, and the coordination of a research seminar. This could be interpreted as a sign that Snyder was a "lone wolf," playing no significant role in policy formation [Garvy 1978: 459]. The private correspondence between Strong and Snyder (which Garvy did not review and which

¹⁴ This debate nicely illustrates the point made by Porter [1995: 4, 90, 193] that when a consensus between experts is hard to reach,

mechanical objectivity tends to replace expert judgment and personal trust in scientific deliberations.

Chandler probably had in mind) suggests, on the contrary, that Strong developed a close intellectual relationship with his chief statistician. Strong gave careful consideration and often wrote lengthy replies to the hundreds of memoranda that Snyder sent him. He had the highest regards for Snyder's indexes: "I have always felt that your index [the General Price Level] is the most comprehensive" (Strong to Snyder, September 15, 1924). And although Strong refused indexes as sole guides for policy determination, he extensively relied on them in discussions with System officials.

By the mid-1920s, price indexes had reorganized the daily practice of regulation around new frames of risk cognition. Snyder's indexes clutched cognition at the level of sectorial trends, thus enabling New York to articulate the desirability of the quantitative stance of regulation. Yet, clutching cognition alone was insufficient to win over the reticence of the Board. Adolph Miller, Strong's main opponent at the Board, rejected price indexes as too coarse for policy formation: "In order to obtain [price stability] we have to look at things closer to the source or beginning of troubles than the price index" [U.S. Congress 1926: 837]. Walter Stewart, the Board's chief statistician, also criticized Snyder's overall price indexes as a "meaningless" endeavor for they ignored demand-induced credit factors arising at the bank level [Yohe 1990: 484]. Yet, however justified was the Board's critic of Strong, it never backed its more granular qualitative position with a proper statistical test.

This fundamental weakness in the Board's position gave New York a rhetorical edge to oppose qualitative controls as meddling in bank affairs. New York claimed that "the only way the reserve banks could prevent some use of its credit as bank capital would be to dictate bank policy in details... this is, of course, clearly impossible and undesirable" (Case to Young, 1926, June 11, NY431).¹⁵ Strong and Snyder also recognized that the holistic reach of sectorial indexes left them without a method to incarnate policy at the level of individual banks. However, while lucid about the limitations of indexes, they made rhetorical use of them to justify the benefit of their sectorial-level engagement against the lack of viable policy alternatives at the level of individual banks and bankers:

¹⁵ The date and box number are provided for materials found at the Federal Reserve of New York (these are marked "NY") and the National Archives in Maryland ("MD").

The data collected at the Reserve bank of Kansas City, Missouri ("MO") was not organized by boxes.

[W]here does our responsibility lie? Must we accept parenthood for every economic development in the country? That is a hard thing for us to do. We would have a large family of children. Every time any one of them misbehaved, we might have to spank them all... [w]e have no direct responsibility to deal with isolated situations and must rely for the development of our policy upon estimates of the whole situation (Strong to Snyder, 1925, May 21).

Of course, our bugbear is the stock exchange speculation; and just how far we should feel a responsibility for what is happening there is, of course, a question. I only wish they [bankers] would come to their senses! (Snyder to Strong, 1925, January. 25).

This emphasis on sectorial responsibility explains Strong's 1927 decision to lower the discount rate after declines in the wholesale price index and rising unemployment. The decision was immediately controversial. As the Board feared, the upturn in industry and construction activity resulting from the easing measure caused a wave of speculative transactions. A former banker, Strong was doubtless aware of this risk, but as a regulator, he acted upon what he saw most clearly. Snyder's indexes allowed Strong to make a convincing claim that the price level ought to serve as the main guide of policy-making. Strong's decision only confirms that metrics have a rhetorical role in legitimating contested decisions: in this instance, indexes supplied confrontational arguments that Strong fully exploited to justify the conduct of monetary policy with reference to sectorial variables.

Unfortunately, indexes did not register the corresponding effects of monetary action on speculation. Financial indexes were like a powerful car with only one gear resulting in a one-metric-frames-all policy framework. In 1927, indexes initially gave New York rhetorical leverage to justify quantitative action against the reluctance of the Board. Soon after, however, clutching attention down to the lower level of securities became a most pressing issue. This is in substance the concern that Gustav Cassel, a supporter of the quantitative position and frequent advisor to the System, raised before Congress:

Perhaps it is impossible... to entirely prevent speculation on the stock exchange, but I think it ought to be possible in the long run to restrict it within fairly reasonable limits, and I hope that that shall prove possible without... raising the rate of discount, which is likely to have a very detrimental influence on the whole monetary policy [U.S. Congress 1928: 381].

As is known, Cassel's exhortation remained without effect. The speculative mania of 1927-1928 weakened the confrontational value of indexes. Strong's untimely death at the age of 55 in October 1928, and the stock market crash a year later, transferred the locus of power away

from New York. The Board now dominating policy claimed the benefit of qualitative controls of investments but was still without a formal method to discriminate between proper and improper uses of Federal credit.

Metrics of Conciliation

New York's rhetorical use of financial indexes is one important regulatory development of the 1920s. Another most central and interesting aspect of the interwar regulatory debate is how New York managed to neutralize calls made by the qualitative camp to interfere with banks' investments. In the mid-1920s, New York learned to adapt confrontational tactics with strategic retreat to counter intensifying criticisms. In 1925, the Board requested that New York provided the names of banks borrowing continuously at the discount window as well as detailed information on borrowing purposes (Eddy to Federal Reserve Agents, 1925, September 15, NY431). The Board's interference was a source of much concern for Strong, who feared the release of this data would inevitably expose the fact that New York City banks were using rediscounting facilities to make security purchases on a large scale (Strong to Reynolds, 1926, June 22, NY431). The governor sought to strike a more conciliatory tone with the Board.

It is in this precise context that credit ratings entered the regulatory debate. Ratings were first discussed in late 1926 in connection with the controversy surrounding rediscounting abuses. In an independent initiative, New York regulator Gustav Osterhus pioneered the use of private ratings to appraise the investment quality of banks' securities portfolios (Gidney to Case *et al.*, 1927, January 21, NY536).¹⁶ Presumably, New York used Osterhus' method as an expedient to reassure the Board that member banks could at once borrow Federal credit for trading purposes and remain sound (per rating measures of intrinsic worth). In this way, New York expected to protect banks from being sanctioned by the Board. Little else is known about the initial rating method. It resurfaced in 1929 in a study conducted this time by the Board as a method to assess securities depreciation [Federal Reserve Board 1930]. Under the label "bond

¹⁶ Osterhus joined New York in 1921 as credit officer. His career followed the threads of regulatory reliance on ratings. He was promoted to assistant national bank examiner

in 1926, around when he devised the rating method. He became national bank examiner in 1931, when the OCC borrowed its method (cf. following section).

quality index,” the rating method graded bonds according to their ratings in order to derive the intrinsic quality of a bank’s investment account.

For almost twenty years, ratings had supplied investment recommendations to private investors. Circa 1926, they became used as a rhetorical resource in the regulatory debate. Osterhus most likely devised the initial rating method to relieve the Board’s pressures about rediscounting abuses. The device certainly did not end the conflict but it sent reassuring signals that New York would begin to consider qualitative information about securities in its policy equation. Interestingly, the rating method was introduced informally and seemingly without concertation. This suggests that what regulation lacked in procedural deliberation, regulators made up for in discreet actions of rhetorical nature. The method was a “provisional metric” [Lamp-land 2010: 387] and was not devised in anticipation of a future policy that would place bank borrowing under rating conditionality. This explains why the linking of regulation and ratings was undertaken without rating agencies ever being consulted or having petitioned to have their ratings integrated into provisions.

An issue that immediately arises concerns the credible alternatives to ratings. First, why did New York pick ratings rather than another metric? Ratings were just one of many metrics available for regulatory use. Other firms had developed statistical techniques to aggregate financial information into forecasts [Brine and Poovey 2017: 96-125]. In this competitive market of information providers were barometric agencies like the Babson’s Statistical Organization (founded by Roger Babson in 1904) and the Harvard Economic Service (founded by Warren Persons in 1915). But the reach of barometric forecasts was broad and sectorial.¹⁷ Ratings, not barometers, entered the regulatory debate because the former centered squarely on individual securities issues while the latter were calibrated to provide guidance on market cycles, a concern which was only remotely connected to the core of the regulatory dispute between New York and the Board. Second, another issue arising is why New York did not devise its own rating system to pass judgment upon the intrinsic merits of securities. Private ratings

¹⁷ Babson borrowed from early research on business cycles by Jevons and Mitchell to represent markets according to the idea that past, present and future market changes are linked by phenomena of cycles and trends. Locating the present investment decision according to the degree of advancement in

a market cycle generated a buy or sell decision that was represented on a barometer chart. For more on the rise of barometric forecasts in the U.S. during the Interwar period, see Friedman [2013] and Chancellor [2006].

were already available and New York probably did not see how developing in-house capacity was any more relevant, given that the rediscounting controversy was seen as a temporary one. Furthermore, private ratings computed outside regulation procured a useful, neutral and untainted resource to appease the dispute with the Board.

To summarize, regulatory reliance on ratings was initially only a rhetorical tool to appease the policy conflict between New York and the Board. Throughout the 1920s, bank examiners continued to appraise the value of securities using market inputs, not rating metrics. Ratings were not yet perceived as a natural source of authority; in fact, they were distrusted by bank examiners who generally emphasized “competent judgment” over any “mechanical process” of auditing a bank’s account [Harger 1924: 670]. But this market-based yardstick of value became hard to maintain after 1930 when securities began to sharply depreciate, prompting regulators to intensify their reliance on ratings, using Osterhus’ method as a template. As regulators entered the Great Depression, their rhetorical use of metrics evolved.

Metrics of Intervention

The crisis took a decisive turn in late 1930 when bank failures erupted in the country’s main financial centers, leaving hundreds of thousands of depositors unable to make withdrawals. Banks liquefied portfolio assets to boost their liquidity position, further depressing market values. Depreciation in securities values became the chief cause of bank failures. But despite the changing character of the depression, the Board and New York favored a passive policy stance.¹⁸ In the absence of policy leadership, and with a countercyclical program decidedly not in sight, the Comptroller’s Office (OCC) took the lead role.

Drawing on Osterhus’ rating method, the OCC urged national bank examiners to exempt all securities of the first four rating grades from any charge-offs (Pole to National Examiners, 1931, August 29, MD353). This change in examination standards directed examiners to value high-grade securities at their purchase price rather than at their current, distressed market prices. More lenient examinations

¹⁸ For the Board, Strong’s expansionary policies had violated the strictures of the real bills doctrine and its effects had to be purged. For New York bank borrowing had fallen

and banks maintained record levels of excess reserves. According to the quantitative position, the correct policy was a passive one.

bolstered banks solvency by offering a buffer against securities depreciation. But the deflation of securities values alone could not counter the trend of bank failures, which resumed in late 1931 after Britain's departure from the Gold Standard.

Efficacy notwithstanding, the ruling is important because it shifts previous debates about value. In the words of the OCC, it was "a pioneer effort to shift the criterion of examination of a bank's bond investments from market value to something akin to 'intrinsic' values" [U.S. Congress 1931: 1077-1078]. Despite initial resistance, rating-based measures of intrinsic value appealed to regulators as a convenient alternative to market valuation. They implied that, very much like precious metals, securities could possess value beyond the turbulent surface of the market. Under such circumstances, ratings gave the OCC rhetorical ammunition to represent the need for action. They gave an actionable argument of intervention against the wait-and-see attitude that paralyzed the System. A rhetorical perspective is relevant because, at the time of the ruling, no study had been made into rating accuracy.¹⁹ Here, rhetoric was more than just an incidental accessory to more "rational" processes; it was determinant. To legitimate important changes in the fabric of regulation, regulators turned themselves into rhetoricians.

A similar argument of intervention explains subsequent emulations of rating-implied provisions in a context of regulatory expansion. From 1932 to 1936, ratings spread across the regulatory network to become associated with major financial reforms undertaken under Hoover and Roosevelt. Both the Reconstruction Finance Corporation in 1932 and the Federal Deposit Insurance Company in 1933 used rating-based measures of intrinsic value to control the risk-sharing mechanisms implied by their respective activities of fund allocation and deposit guarantee. During the bank holiday, examiners used ratings to review the assets of suspended banks and expedite readmissions into the System (Morrill to Federal Reserve Agents, 1933, January 31, MD1660).

The influence of ratings cannot be overstated: without them, fund allocation and deposit insurance would have faced greater problems of policy specification, and the reopening of the banks would have certainly taken longer to complete. Here, again, historical records point to no evidence that regulators expressed the need to know whether ratings were accurate. The fact was that rating accuracy was

¹⁹ The first of such studies were published later by Gilbert Harold [1934].

an entirely secondary concern in regulators' minds to the more important question of the type of intervention that ratings legitimated.

The worst of the Great Depression had passed by late 1934. Yet, banks continued to use Federal credit to purchase large numbers of risky securities. In a landmark decision, the 1933 Banking Act had divorced banks from their securities affiliates, prohibiting banks from underwriting for their own account. But it did not instruct banks what securities to buy or for what purpose. The appointment of Marriner Eccles in 1934 as chairman of the Federal Reserve marked a significant shift in tone. Eccles urged controls on bank investments to "divert bankers' attention from the semblance of paper to its substance." And by substance he meant "soundness, rather than liquidity" [Eccles 1935: 11]. The 1935 Banking Act introduced for the first time the term "soundness of assets", and empowered the OCC to determine the classes of securities that banks could purchase. In February 15, 1936, the OCC prohibited all national and state banks from purchasing securities of "distinctly or predominantly speculative" character with the exception of Government, state, and municipal securities. A footnote to the ruling stated that eligibility "must be supported by not less than two rating manuals" [Board of Governors of the Federal Reserve System 1936: 5].

The 1936 ruling formalized the sort of qualitative controls of bank investments that the Board had sought unsuccessfully during the 1920s. While public authorities had long regulated speculation obliquely as a secondary issue to bankers' competence, eligibility requirements at the discount window and sectorial index metrics, ratings for the first time allowed regulators to clutch cognition and incarnate a direct engagement at the level of securities. The 1936 ruling was forthcoming to a broad restructuring of banks' investment policies as banks were forced to replace downgraded bonds with high grade issues and limited investment within a narrower bandwidth of risk. After the ruling, ratings increasingly entered the subjectivities of investors. They quickly learned to demonstrate formal adherence to regulation by pressing rating agencies for higher ratings for their speculative issues. And in many instances, they granted such demands (Security National Bank to American Bond and Quotation Service, 1939, February 6, MO).

A handful of economists did not miss the historical significance of the ruling: February 15, 1936 "was an important day in banking and financial history" [Wilkinson 1938: 105]. In a visionary statement, Melchior Palyi, a University of Chicago economist, wrote that "sooner or later, the words which have emanated from the [OCC] are bound to become the prevailing standards of policy for the overwhelming volume

of institutional investments and, thereby, of the flow of capital in general” [Palyi 1938: 74]. Yet, such broad considerations remained entirely foreign to interwar regulators. Ten years into regulatory reliance on ratings, the bureaucratic conversation on ratings remained informal. Exchanges with rating firms were sporadic and limited to subscription-related issues.

The swift rating colonization of regulation raises important questions about the practice of regulating with metrics. An astonishing development arises from the fact that regulators built ratings into regulation without much consideration given to the value of ratings. Regulators’ agnosticism vis-à-vis rating accuracy complicates economists’ claims that regulatory decisions are guided by the rational outcome of action. Regulatory reliance on ratings (hereafter “RRR”) no longer substantiated the claim that science and policy were co-produced in procedural debates. Sociotechnical deliberations were not structured formally and they often followed decisions rather than preceded them.

RRR is better explained as an instance of institutional deviance legitimated in rhetoric. From 1926 to 1936, the successive iterations of RRR indicate that ratings entered and then spread within the regulatory network as symbolic resources to justify profound change in the fabric of regulation under conditions of uncertainty. As cognitive clutch, ratings enabled regulators to direct attention towards the fundamental problem of securities valuation after decades of neglect. But clutching cognition alone was insufficient to trigger a concrete course of action until proponents of change derived from ratings an actionable argument to make comprehensible the need for actual change. At inception, New York extracted from ratings a conciliatory argument to appease the Board’s criticisms and maintain its dominant position. After the stock market crash, the rhetorical role of ratings was less about reproducing existing patterns of action, and more about constructing the possibility of intervention beyond the policy standoff. Only in 1937 did regulators begin to assess the modalities of rating incorporation, turning to administrate the ties they forged with rating agencies. The next section describes the series of agreements that normalized ratings according to regulation.

The Ratification Of Rhetorical Change

After 1936, the OCC, FDIC, RFC and the twelve reserve banks used ratings in their daily work. Their rating requirements often

differed, creating problems of cross-agency collaboration. Even more troublesome was the fact that rating firms employed distinct rating scales, making it difficult to compute aggregated measures of risk. In the summer months of 1937, regulators launched an investigation into the methods governing the production of ratings. This effort was coordinated from the Board in Washington by Leo Paulger and Glenn Goodman.²⁰ Paulger made arrangements to have representatives of Standard, Fitch, Poor's, and Moody's discuss ratings with Goodman. A year later, Fitch Vice President Henry Clancy called the outcome of this series of informal meetings the "Washington Ruling" (Paulger to unknown recipient, 1938, August 25).²¹ The so-called ruling was the first comprehensive attempt to regulate ratings, some 40 years before the Securities Exchange Commission devised the Nationally Recognized Statistical Rating Organization license. The details of the ruling were never published in an official promulgation. This explains why it has been entirely forgotten, although it contributed significantly to making rating agencies what they are today.

The meetings reports are instructive of the inner workings of the rating industry during the interwar period. Poor's and Standard said that they used weights to compute ratings but provided no indication about where and how they were placed. This led Goodman to suspect that their weighting was partial rather than comprehensive (Goodman to Paulger, 1937, Oct. 22). Moody's rejected any such comprehensive approach: "it [has] been found impossible to rate securities on the basis of a fixed formula" (*ibid.*). Fitch stated that the determination of its ratings was the expression of "opinion concerning the standing of the issue with respect to others in the field" (Goodman to Paulger, 1937, December 12). Goodman also reported that rating agencies hesitated on the attitude to adopt regarding regulation. All four agencies complained that RRR had created unfortunate ties between agencies and bankers. Standard complained that it placed a "serious responsibility" upon the agency and decreased its capacity to operate autonomously (*ibid.*). In contrast, Moody's praised rating-implied regulations since they generated more business.

Although they now had in mind Harold's findings that rating agencies were poor forecasters (Goodman to Paulger, 1937, April 8),

²⁰ Paulger was director of the division of examinations (1932-45). Goodman was Federal Reserve examiner (1934-52) and assistant director of the division of examinations (1952-66).

²¹ All references for this section are from the National Archives (MD), Record Group 82, boxes 353-356.

Paulger and Goodman barely challenged agencies' officials on the matter of rating methodology. Their chief interest was to make rating scales uniform by standardizing rating agencies' interpretations of the investment limits set by regulators.²² Poor's had a rating scale with more grades than its competitors, and made their first seven grades eligible according to regulatory rules (according to the OCC, the first four were eligible). This scale afforded a finer grain of evaluation. However, Poor's also recognized that the deviation from regulatory recommendations made its ratings unpopular among bank examiners. Poor's eventually dropped its A*****, A**** and A*** grades, and advised purchases of bonds in the first four grades. Standard and Moody's also adjusted their recommendations, having previously advised purchasing bonds no lower than "A" (third grade). Only Fitch already complied with regulatory requirements. The standardization of rating scales was achieved just in time for the adoption of the Uniform Agreement on Bank Supervisory Procedures of June 27, 1938. In the examinations of the OCC, reserve banks, FDIC, and RFC, the agreement distinguished for the first time between investment-grade (authorized for purchase) and speculative (prohibited) bonds. This distinction would have an enormous influence on future financial developments.

The discussion continued throughout the summer of 1938. Rating agencies and regulators agreed on a majority rule to make ratings conclusive when at least three agencies agreed (Fitch to Paulger, 1938, August 29). Rating firms also accepted to mark the regulatory status of bonds in their manuals with special symbols X, Y, Z (Standard to Paulger, 1938, August 31). But a major disagreement occurred when Paulger asked agencies to compute the eligibility status of rated bonds in order to have regulatory requirements continuously updated by the rating agencies themselves rather than by the regulators. The proposal implied that agencies would swap information on rating changes, something that they refused because of the proprietary nature of information (Moody's to Leavitt, 1938, June 25). Rating firms refused to become agencies working for regulators. They considered they had more to lose than to gain from merging with government since they could as well remain independent agencies and reap private profits from assuming a governmental role.

The Washington Ruling gave the rating industry its modern shape. Its impetus was regulators' assessment that if metrics did not originate

²² This echoes Espeland's [1997: 1111] observation that regulators often resolve the tension between rule uniformity and accuracy in favor of uniformity.

in regulation, they still had to bear its endorsement. One legacy of the ruling was to give monopoly privileges to Moody's, Fitch, Poor's, and Standard (the latter two merged in 1941), thereby narrowing the competitive dynamics of the rating industry. Ratings not hardwired in regulation fell into disuse. For instance, the American Bond Quotation Service, a Chicago-based rating firm, did not receive regulatory recognition and was put out of business in 1938 (Paulger to unknown recipient, 1938, September 2). The ruling also weakened alternative metrics like barometers. Barometers were not inferior to ratings: in fact, Babson had accurately predicted the market crash of 1929 [Friedman 2013: 43]. But barometers were calibrated to provide guidance on market cycles, a sectorial brand of metrics which became irrelevant after the Federal Reserve began to publish the variations of their price indexes. Barometers and other private metrics not hardwired in regulation fell into disuse. With barometers crowded out and ratings incorporated, regulators shrunk the dynamic ecology of private statistical firms that existed until the late 1920s. This is evidence of the paramount influence of regulatory practice on the industry of expert knowledge.

Sticky Rhetoric: The Imprint Of History On Current Debates

The swift rating colonization of U.S. regulation was the culmination of half a century of public debates about the stock exchange. This high point, which was only reached after a long preparation, was to have immense consequences on future financial developments. "The history of economic development is the history of regulation", writes David Levi-Faur [2005: 14]. I extend this claim by suggesting that the history of regulation is in part the history of the influence of quantification on regulation.

The objective of this research was to understand the significance of metrics in regulation. It suggests the following pattern. First, regulation embeds social and technical developments into processes of co-production and co-evolution. Regulation acquires legitimacy in sociotechnical deliberations. Second, the deliberative context of science and society varies according to the degree of stability of the bureaucratic exchange in which regulation is debated. In routine contexts, regulators accommodate social and technical aspects following steady scripts incorporated in deliberative procedures.

Sociotechnical interactions are reproductive of prevailing models of regulation. In unsettled environments, models are contested, and regulators engage in entrepreneurial efforts to manipulate extant models and legitimate institutional deviance. Such efforts often generate too much conflict to be absorbed in formally-constituted worksites, along the procedural lines described by Jasanoff. Here the mobilization of symbolic resources is required to make comprehensible the desirability and relevance of change. Third, I claim that this can be accomplished through the use of rhetoric. Regulators use metrics as rhetorical resources to exploit contradictions and ambiguities in extant models and justify creative paths of change. Ultimately, rhetoric is not suboptimal or irrational but rather a vital mechanism through which important policy decisions are taken in contexts of uncertainty.

Using the building of early U.S. securities regulation as an empirical case, this article makes four contributions to the social studies of regulation and quantification. First, it challenges the separatist perspective that characterizes many approaches of quantification in policy. The Progressive Era legacy of policy failures recalls that regulation works best when it is debated and enforced against metrics. In this sense, the general distrust of quantification that often characterizes critical legal studies is misplaced. For instance, Supiot's claim [2007: xi] that "calculating is not thinking" misses that metrics often provide a bedrock for regulatory reasoning. This research also suggests that economists have much to learn from regulators whose use of numbers rarely conforms to utility calculus, a too narrow perspective to serve as any guide for a pragmatic analysis of the practice of regulation. Quantification does more than provide neutral guidance to policy determination. It can evoke the development of innovative policy projects that were once unthinkable. This endogenous role of numbers also recalls that regulation is more than a technical achievement which warrants cost-advantage analysis. It is a normative activity whose perspective arises from the standpoint of market construction rather than stationary passivity within fixed market equilibria.

The second key insight of this paper is to emphasize the rhetorical value of metrics in policy debates. Examining the role of metrics in the building of securities regulation requires us to take seriously the rhetorical capabilities of metrics, as seriously as we take seriously their rationality. Rhetorical metrics combine two elements: cognitive clutches and actionable arguments. With the mechanical metaphor

of “clutching,” I have sought to explain how metrics (in the context of this article, price indexes and credit ratings) help regulators articulate the desirability and relevance of change. Clutching cognition is integral to regulation where actors typically develop competing claims over the nature of risk and over the right level of policy action. During the interwar period, rival models of regulatory ordering of markets were available, each involving distinct costs and benefits. Regulators used metrics as rhetorical resources to clutch attention at their preferred levels. Today, the question of the levels of policy also permeates the conversation about environmental protection, food safety and the regulation of trade and finance. Many studies emphasize “cross-scale” governance, or the necessity to distribute regulation across policy sites and platforms [Lemos and Agrawal 2006]. This research suggests that the issue of effective regulation is not just about bridging geographic levels (the local and the global for instance); it is also about finding innovative ways to coordinate a plurality of policy targets at once so that relationships between different agents of risk (individuals, firms, and objects in circulation) are addressed comprehensively.

Clutching cognition is often insufficient to trigger a concrete course of action, until proponents of change find an actionable argument to make comprehensible the need for actual change. The use of persuasive language is key to ensuring the success of cognitive deviance. A situated perspective on the interpretative resources that policy-makers mobilize to resolve local conflicts is, therefore, key to understanding regulatory change. This article emphasizes three actionable arguments derived from metrics: confrontational, conciliatory, and interventionist. Although I suspect that this contribution on rhetorical change can find generalization in other policy domains, this remains an empirical question.

The third contribution concerns the history of quantification. This article presents a perfectly Porterian story, which even matches Porter’s chronology: at the turn of the 20th century, regulators resisted the use of metrics and instead entrusted investors to perform risk analysis. At the end of the 1920s, regulators abandoned their reliance on investors’ judgment in the name of standard metrics which became crucial reference points in regulation. Metrics had a legitimating effect on regulation: they gave new and ambitious regulatory projects a line of defense against charges of partiality and subjectivity. If this article broadly aligns with a Porterian account of the spread of mechanical objectivity in policy, its rhetorical approach offers precision to understand how this process occurred.

The first insight relates to Porter's claim [1995: 17] that numbers "create new things and transform the meanings of old ones." Here, Porterian studies of quantification should be brought into more explicit dialogue with institutional theory—a suggestion also made by Espeland [1997: 1121]—to understand how the constitutive role of numbers is enabled in specific and historically-situated contexts. This article suggests that whether and how metrics transform regulation varies across deliberative contexts: in stable contexts, the preferences of regulators are formed and quantification is mostly reproductive of prevailing institutional models of government; but in unstable policy environments, models are contested, and regulators may use quantification as a symbolic resource to legitimate institutional change. Ultimately, by bringing in institutional theory, historians of quantification could become more appreciating of the validity and limits of the claim that "numbers create new things."

Second, I suggest that studies of quantification ought to address more explicitly the question of rhetoric to unpack the symbolic role of metrics in institutional. This article's rhetorical perspective can be understood as an effort to take seriously Porter's claim [1995: viii] that numbers are "strategies of communication" with independent effects on policy-making. This communicative approach can be specified further along the rhetorical lines highlighted in this article. The two rhetorical components presented above are helpful in gaining perspective on precisely how numbers are communicated and with what policy effects. The component of cognitive clutch suggests that regulators can acquire metrics as rhetorical resources to expose contradictions in prevailing models. Actionable arguments are helpful to understand how the need for institutional change is communicated: either through confrontational or conciliatory arguments or through a rhetoric of intervention against the cost of inaction. Ultimately, numbers as strategies of communication can lead to fundamentally different ways of communicating trust and objectivity.

The last contribution of this research concerns the imprint of rhetorical decisions on current debates. The 2008 financial crisis revealed many problems plaguing rating production including conflicts of interest and profit-driven behaviors. In the run-up to the financial crisis, these structural problems resulted in rating firms bestowing generous ratings to debt instruments that were defaulting at a much higher rate than anticipated [MacKenzie 2011]. U.S. and European lawmakers called for the elimination of ratings from financial regulation. But despite strong political commitment,

progress in that direction has been limited. Why superficial metrics like ratings continue to enjoy official regulatory status has proved a constant source of amazement for scholars. Considerations of accuracy did not drive the institutionalization of RRR (regulatory reliance on ratings) any more than they are today the sole factor in the regulatory debate. If so, regulators would have removed ratings a long time ago.

The sociohistorical analysis developed in this article offers an analytical perspective on the stickiness of rhetorical decisions. The difficult removal of ratings has first to do with their significance as regulatory metrics. Ratings have crossed the 20th century as standardized metrics standardizing exchange. Today, ratings pattern the market conduct of firms and individuals, making it difficult for regulators to remove them from provisions without at the same time weakening regulation. Thus, ratings verify the classical claim of path-dependency made by David [1970] that technologies, however artificial or superficial they might be, become “locked in” once used by everyone. Another explanation of the slow progress towards reform is the cognitive mechanism of clutching: removing ratings from regulation forgoes the capacity of regulators to maintain cognition at the level of financial objects. A major concern among regulators is the loss of granularity for assessing different levels of credit risk [Soroushian 2016]. Without ratings, regulators are left with the alternative option of relying on banks’ internal risk assessments. This proposal revives “associationalism,” the policy stance favored under Hoover which prescribed voluntary partnerships between government and business in lieu of coercive regulation. As this article recalls, entrusting investors to carefully investigate their risk position is often assuming too much. Despite their inaccuracy having long been exposed, ratings continue to express important choices which have long been forgotten. By emphasizing metrics as a mere technical matter, critics of ratings miss the rhetoric of stability that ratings offer, and that is hard to resist even in the face of ratings’ technical limitations.

This study has shown that metrics have social and technical meanings in regulation. One must be sensitive to the sociohistorical context in which they acquired regulatory significance. Metrics assumed an important rhetorical role during the building of modern financial regulation. Today, they continue to have rhetorical value, beyond any consideration of efficacy. For the students of regulation and quantification, the conclusion is that the interactional context of science and society is key to analyzing regulatory outcomes and

examining the standard metrics that regulators use to standardize human activities.

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Résumé

Comment les régulateurs régulent avec des métriques ? Cet article répond à cette question au moyen d'une approche rhétorique. Le recours à la notation du crédit dans la régulation du marché obligataire américaine au début du xx^e sert de cas empirique. Une approche rhétorique permet de relativiser l'idée répandue chez les économistes que les métriques n'ont d'autre utilité que de servir de référence technique dans l'élaboration des politiques publiques. On part de l'hypothèse alternative que le rôle des métriques dans la régulation ne peut être apprécié qu'en étudiant conjointement leurs aspects techniques et sociaux. Une approche rhétorique vient également combler une lacune dans les études sociologiques de la « co-production ». Ces travaux suggèrent que la régulation gagne en légitimité lorsqu'elle s'incarne dans des règles formelles de délibération mais néglige le rôle de la quantification lorsque ces règles font défaut. Cet article suggère que la rhétorique n'est pas sous-optimale ou irrationnelle mais une forme essentielle de délibération dans des contextes d'incertitude, lorsque la prise de décision exige de la persuasion dans des contextes d'informalité. On observe que les métriques peuvent être un puissant vecteur de changement rhétorique. Ces « métriques rhétoriques » impliquent deux composants : premièrement un « embrayage cognitif » pour réorienter les modèles d'attention des acteurs vers des sentiers nouveaux ; ensuite un « argument décisionnel » pour convertir la déviance cognitive en un argument convaincant de changement. On conclut avec une réflexion sur la postérité des décisions rhétoriques dans les débats actuels autour de la régulation.

Mots-clés : Quantification et Régulation ; Rhétorique ; Changement institutionnel ; Notation du crédit ; Histoire financière.

Zusammenfassung

Wie regulieren Regulatoren mit Hilfe von Metriken? Auf diese Frage antwortet der Beitrag mit einem rhetorischen Ansatz. Als empirischer Fall dient hier die Verwendung von Ratings im Rahmen der Regulierung des US-Anleihenmarktes zu Beginn des 20. Jahrhunderts. Dank des rhetorischen Ansatzes kann die unter Ökonomen verbreitete Idee relativiert werden, dass Metriken ausschließlich als technische Referenz bei der Entwicklung öffentlicher Politiken dienen. Wir gehen von der alternativen Hypothese aus, dass die Rolle der Metriken bei der Regulierung nur gewürdigt werden kann, wenn gleichzeitig ihre technischen und sozialen Aspekte untersucht werden. Der rhetorische Ansatz schließt ebenfalls eine Lücke in den soziologischen Studien der "Koproduktion". Diese Untersuchungen legen nahe, dass formale Beschlussregeln die Regulierung stärken, ihr Fehlen jedoch die Rolle der Quantifizierung mindert. Dieser Artikel legt nahe, dass Rhetorik nicht suboptimal oder irrational ist, sondern eine wesentliche Form der Überlegung in Unsicherheitskontexten darstellt, sobald Entscheidungen im informellen Kontext Überzeugungsarbeit erfordern. Metriken können ein starker Vektor rhetorischer Veränderungen sein. Diese "rhetorischen Metriken" umfassen zwei Komponenten: erstens eine "kognitive Kupplung", um die Aufmerksamkeitsmodelle der Akteure auf neue Wege zu lenken; dann ein "Entscheidungsargument", um die kognitive Abweichung in ein überzeugendes Argument für Veränderung umzuwandeln. Wir schließen mit einer Reflexion über die Berechtigung rhetorischer Entscheidungen in aktuellen politischen Debatten.

Schlüsselwörter : Quantifizierung und Regulation; Rhetorik; institutioneller Wandel; Kreditrating; amerikanische Finanzgeschichte zwischen den Weltkriegen.