HISTORY

WHEN LAW AND ECONOMICS WAS A DANGEROUS SUBJECT

How the early 20th century controversy over railroad regulation embarrassed the University of Chicago and ruined an economist's career.

BY NICOLA GIOCOLI

At the turn of the 20th century, railroad regulation was hotly debated in the United States. Railways were accused of abusing their monopolistic positions, particularly because of their use of rate discrimination—the charging of different rates for seemingly similar services. Public pressure for tighter regulation led to the 1906 Hepburn Act, which strengthened the regulatory powers of the Interstate Commerce Commission (ICC).

American economists were actively involved in this debate. While most of them belonged to the pro-regulation camp, the best economic analysis came from those who used the logic of modern law and economics to argue that most railroads' practices, including rate discrimination, were rational, pro-efficiency behavior. However, as one of those economists, the University of Chicago's Hugo Richard Meyer, would discover, arguing those ideas before they had gained broad scholarly acceptance could prove professionally costly.

This article uses Meyer's sad tale to review the pre-1906 American debate on railroad rate regulation. My goal is to show how a few economists had already embraced the gist of what would become law and economics, but also how the majority of the discipline, as well as legislators and public opinion, rejected this approach and, with it, what today's observers would consider sound economic analysis.

The incident illustrates two broad points: First, new industries always challenge economists and public authorities in their attempt to determine whether market forces are working satisfactorily and what the effects of government intervention would be. Late 19th-century railroads raised puzzles for scholars and regulators. That those who in hindsight got the puzzles right had little effect on their profession and policy at the time should somehow reassure those who despair today about the ill-devised regulation of, say, Internet industries. In matters of regulation, it can take a long time for public policy to get things right. Second, my story shows that economic ideas never fail or succeed in a vacuum. Regardless of their intrinsic validity, they are only accepted when their end-users—be they economists or policymakers and lawmakers—find them persuasive in terms of a broader socio-political framework. The economists' power to persuade is, in short, always contextual.

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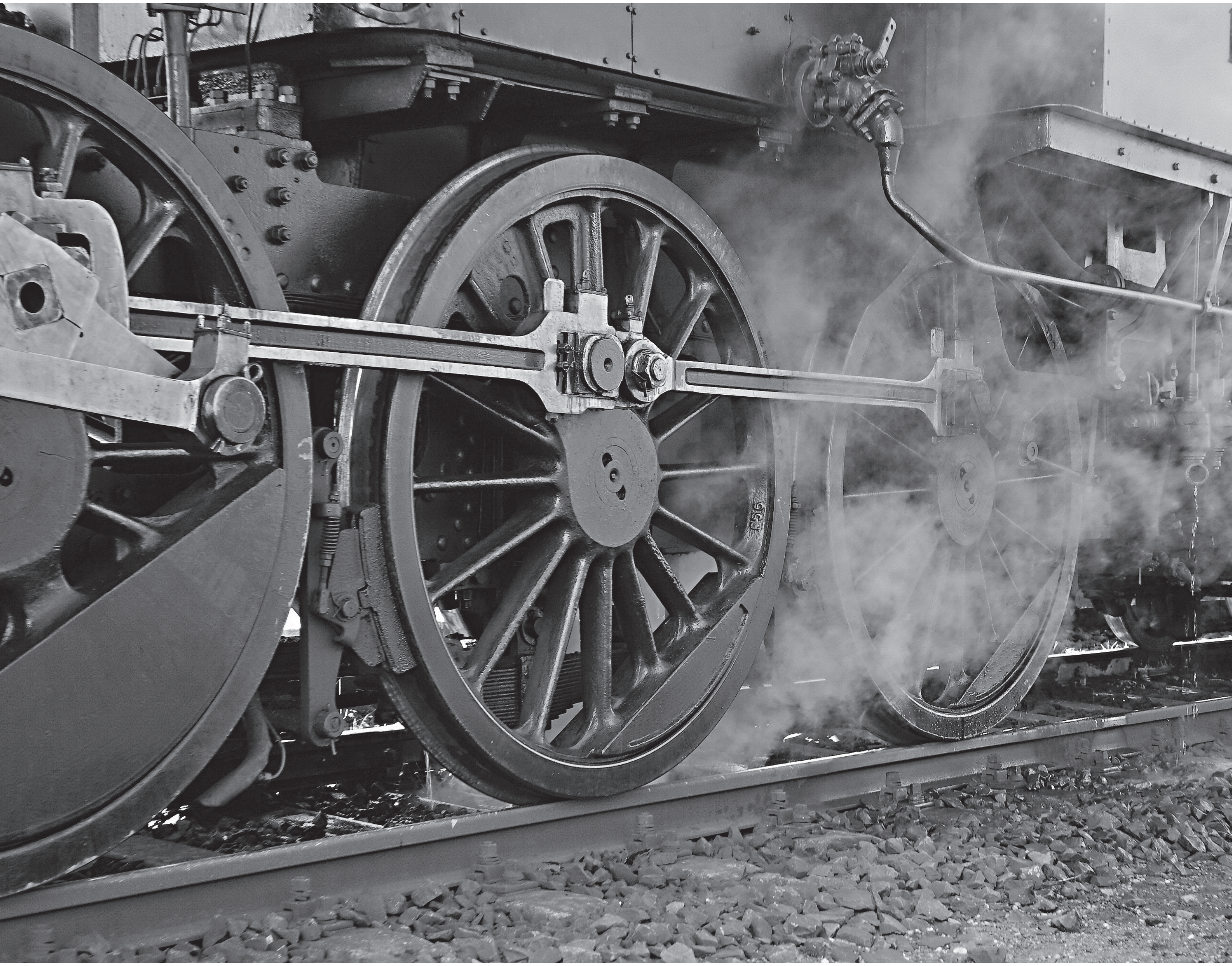
THE (ALLEGED) INEVITABILITY OF RATE REGULATION

The free play of market forces would benefit society as a whole: that was the main message—and promise—of classical economics. The message was supported by a theoretical apparatus in which full capital mobility and the profit equalization theorem (that is, the tendency of risk-adjusted rates of return to equalize across industries) occupied center stage.

Railways presented post–Civil War America with a wholly different scenario, one where, because of the enormous amount of fixed capital required, a business could not easily enter and exit the market, while competition led active firms toward either financial ruin or absolute monopoly. The underlying assumptions and fundamental theorems of classical economics simply made no sense in the industry, or so it seemed. "The railway system is not one which is amenable to the laws of supply and demand,"



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observed Charles Francis Adams, a pioneer of modern regulation. The reason was scale economies: "It is an undisputed law of railway economics that the *cost of movement is in direct inverse ratio to the amount moved*" (emphasis in original). Competition simply did not apply in this case. The inverse relation between cost and traffic pointed to "a conclusion which is at the basis of the whole transportation problem: *competition and the cheapest possible transportation are wholly incompatible.*"

A decade later, every American economist had become aware of the peculiarities of the railway industry. Another Adams, University of Michigan economist and ICC statistician Henry Carter Adams, was archetypal of the almost universal recognition that "where the law of increasing returns works with any degree of intensity, the principle of free competition is powerless to exercise a healthy regulating influence." The underlying economics was easy to grasp: "The capacity of the old road may be extended at a cost comparatively less than would be required by the building of a new road; and, so decided are the advantages of an established business over one struggling into existence, that it is fair to regard the old road as practically free, for a long time at least, from the competitive interference of new capital." Complete monopoly seemed the inevitable outcome of the lack of competition, as well as the most obvious way to achieve "the cheapest possible transportation."

Such an outcome was, however, unacceptable to Americans, who loathed monopoly, especially in the case of so vital an industry as railways. Railroads were commonly depicted as abusing their monopoly power. High rates were accompanied by discriminatory practices, where railroads arbitrarily charged different rates to different customers (often in the form of selective rebates). Most American economists and the public believed that railroads were inevitable—that is, natural—monopolies and the only way to control their market power was to regulate their rates.

RAILROADS' WORST EVIL: RATE DISCRIMINATION

Neither monopoly pricing nor rate wars raised so much passion and complaint in American society as the discrimination of railway fares. The public opinion's fury verged on hysteria. The practice even featured in popular novels—such as Frank Norris's *The Octopus*—as the epitome of the railroads' rapacious and ruthless attitude toward customers and competitors. Rate discrimination was the single most important and controversial problem of railroad regulation during the Gilded Age.

Among the various forms of discrimination, the one attracting most attention, and protest, was the so-called short-haul/long-haul discrimination. It occurred when a railroad charged a higher price per mile for a short distance than it did for a long one. Net of the fixed cost of loading and unloading the trains, which explained part of the differential, long- and short-haul rates were often not proportional to actual direct costs of service. It was not just a matter of short hauls costing proportionally more than long hauls. The loudest complaints arose from the fact that short hauls frequently cost *absolutely* more than long hauls, even though the short haul was completely contained within the long-haul route. Little surprise that the practice could stimulate the fantasy of talented writers.

Novelists are not always good economists, though. What the American public failed to understand was that competition, rather than cost, determined railway rates. Among those who understood was the ICC chairman himself, Martin Knapp. "The power to compete is the power to discriminate," he acknowledged, so that any legislation that "declares unlawful every discrimination between individuals or localities is plainly inconsistent with competitive charges." Indeed, the full understanding of the rationale of rate discrimination was among the most valuable contributions of the late 19th-century marginalist turn in economics.

In the 1885 treatise *Railroad Economics* that earned him international acclaim, future Yale professor Arthur Twining Hadley applied marginalist techniques to demonstrate what a few earlier commentators had already grasped, namely that railway lines did not have to be "parallel" in order to compete. The market for railroad services between distant points was much more competitive than commonly believed precisely because variable costs were so small, so that actual mileage did not really affect total cost. Thus, competing lines often existed that connected the same commercial centers—major American cities—but passed through different points en route. It followed that competition for traffic between those centers was far greater than competition for traffic between the points along the way. This simple observation lay at the heart of the short-haul/long-haul problem.

Many had recognized that the portion of fixed costs borne by any class of railroad traffic was price-*determined* rather than price-*determining*. Whenever no competition existed on a certain route, railroads set a rate high enough to cover both variable and fixed costs. This was typically the case for short-haul rates—that is, for traffic between local points almost always connected by a single, monopolistic railroad. Those fixed costs that were not covered by the rates charged on more competitive, long-haul traffic were thus repaid by the short-haul rates charged upon monopoly routes. Several observers concluded that railroads were using their monopolistic short-haul overcharges to cross-subsidize their competitive long-haul expenses and that, therefore, short-haul shippers were unjustly discriminated to the benefit of long-haul ones.

Technically speaking, however, no cross-subsidization was involved in the practice, at least as long as long-haul rates exceeded direct operating costs. As Hadley wrote in a comment to the 1887 Interstate Commerce Act: "There is not in American railroad practice a collision of interest between shippers as a class and railroad owners as a class. Laws based on the supposition that there was, have done much more harm than good." He explained in his treatise that even the shippers who paid the high local rate benefited from the short-haul/long-haul discrimination. "The points where there is no competition," he conceded, "are made to pay the fixed charges, while the rates for competitive business will little more than pay train and station expenses." Still, everybody gained. Long-haul shippers enjoyed the benefits of competition, because for the railroads "it is better to have business on those terms than to have it go by the rival route." As for short-haul customers, their gain stemmed from the fact that

> the local business at intermediate points is so small that this alone cannot support the road, no matter how low or how high the rates are made. In other words, in order to live at all, the road must secure two different things—the high rates for its local traffic, and the large traffic of the through points which can only be attracted by low rates. If they are to have the road, they must have discrimination.

The message was clear: cancel the long-haul traffic and the short-haul customers would have no railway at all to ship their goods. Who was actually subsidizing whom?

A CLASSICAL RATIONALE FOR DISCRIMINATION

Hadley did not fight the battle for sound economic thinking alone. Another seminal contribution to the development of regulatory economics came in 1891, when Harvard professor Frank William Taussig, the influential editor of the *Quarterly Journal of Economics*, gave his own version of why price discrimination was important for industries with high fixed costs. Differently from Hadley, Taussig's approach rested on the traditional premise of railroads as natural monopolies. Thus the peculiar structure of their production costs, rather than competitive effects, drove his analysis, which borrowed more heavily from classical economics.

Railroads were an industry subject to joint, indivisible costs. This was, generally speaking, the case of "any industry in which there is a large plant, turning out, not one homogeneous commodity, but several commodities, subject to demand from different quarters with different degrees of intensity." As Taussig recognized, John Stuart Mill had already studied this case, including its main economic implication: each commodity or service contributed to these joint costs "in proportion to the demand for it," that is, the more price-sensitive the demand, the lower the contribution to fixed cost. The application to railroad rate-making was straightforward: "the different sorts of traffic contribute in very different proportions towards paying the fixed charges, or the return to capital." "Traffic which will continue to come even at comparatively high rates," Taussig explained, "will continue to be taxed high, and will contribute largely towards fixed charges. Traffic for which the demand is sensitive to price, and which can be got only at low rates, will contribute little."

Indeed, railroads were a joint cost industry like no other. In their case, not only fixed costs, but also the largest part of operating expenses, represent "outlay not separate for each item of traffic, but common to the whole of it or to great groups of it." A careful analysis of the different components of these expenses led Taussig to claim that only a very small portion of total railway costs was directly dependent on the amount of traffic.

Competition entered into play here. The joint nature of most railway costs increased "the fierceness of railway competition, due in part to the fact that the enormous plant is irrevocably committed to that particular business." Under competitive conditions, only variable costs would be calculated into price: "a railway will not retire from the competitive business as long as it yields anything above the small fragment of expense directly traceable to that particular traffic." But if fixed costs were not accounted for, the railroads would be unprofitable and there would be no new investment in them, to the detriment of the entire economy. Because the competitive pricing mechanism contributed nothing to fixed costs, how could they be repaid? Taussig's first conclusion was that cost of service—so beloved by anti-discrimination campaigners—had nothing to do with rational rate-making, except for the very tiny portion related to variable costs. The pervasiveness of the joint cost phenomenon entailed that no cost-based rule could determine railroad rates.

Even more explicitly than Hadley, Taussig described what is now called the "second-best" approach to efficient pricing. Today we know that in the presence of a multiproduct firm—whose overhead costs need to be covered by total revenues but cannot be assigned to individual products—a proper use of differential pricing can raise total output, spreading the joint costs' burden among more customers. The idea is that the firm would set each product's price above its marginal cost, at a level sufficient to cover overheads and obtain a normal return on investment. An optimal set of markups exists that would generate the required total revenue with a minimum loss of output with respect to the first-best. These efficient markups depend on the elasticity of demand and are known in modern jargon as Ramsey prices. Whenever total revenues are larger than total costs, including overhead and a normal return, the firm is earning supra-competitive profits. Hence, the proper test for monopoly power looks at total revenues and total costs, not at the size of the markup on any specific product: even a very high markup is not by itself an indicator of monopolistic profit.

Taussig had a clear understanding of the technique and its implications. In his terminology, the most efficient way to repay railroad investments meant charging "what the traffic will bear"—i.e., what others called *value of service*. The principle aimed at maximizing railroad traffic on the basis of the customers' willingness to pay—that is, of the different elasticities of the various portions of demand. Taussig's second conclusion was therefore that price discrimination—whatever its basis: freight classification, geography, or the amount of competition along a particular route—was sound economic behavior, and an efficient one at that. "This seems to me to be the fundamental explanation of the classification of freight," he concluded. "As time went on, experience forced on managers, whether in charge of public or of private railways, that adaptation of rates to demand which is the inevitable outcome of the peculiarities of the industry." All kinds of discrimination, even the most despised ones, stemmed from the inexorable logic of joint costs—a purely technological feature.

Rate discrimination had nothing to do with justice, but with technical necessities: "I trust I have succeeded in showing that the main peculiarities in railway rates, *those which have appeared under government management as well as under private management*, are

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not to be explained on a supposed basis of justice and right, by which the well-to-do are charged high, and the needy are left off easily" (emphasis added). No form of railroad ownership—public or private—which aimed at preserving financial integrity could be exempt from applying this iron logic.

IN THE LION'S DEN: MEYER'S AEA PAPER

By the turn of the century it was clear that Hadley and Taussig had failed to reorient the debate on rate discrimination. In fact, they had not even managed to persuade the majority of their fellow economists. Absent a shared understanding of the theoretical basis for rational rate-setting behavior, a simple change of personnel had sufficed for the ICC to embrace a harsher attitude toward price discrimination. Under the new chairmanship of William Morrison, the ICC had started to systematically challenge railway rates, asking railroads to contain them within "just and reasonable" limits, but providing no legal or economic anchor for this provision.

Still, the "evils" of railroads' monopolistic practices had remained intact. The 1887 act had conferred weak powers to the ICC, in particular no authority to at least suspend rates under investigation, let alone set them. Moreover, federal courts had consistently rejected the ICC's efforts to expand its statutory authority and directly engage in rate-setting. Railroad regulation was in a stalemate, both administratively and jurisprudentially. Efficient or not, railroad pricing practices could go on unabated.

In 1905, the controversy about railroad regulation in general, and rate discrimination in particular, was as intense as ever. Railroads remained on top of the public enemies' list. President Theodore Roosevelt rode the anti-railroad wave and made the strengthening of the ICC a top item of his political agenda. The passions raised by the issue were such that those who dared oppose the populist calls for tighter restraints on the railroads' rate-making freedom "were identified as nothing more than mouth-pieces for the railroad interests," according to legal historian Herbert Hovenkamp. The principle that competition and technology, rather than cost of service, determined the rates was therefore a dangerous one to defend. Surveying the topic a year later on behalf of the American Economic Association (AEA), University of Michigan economist Harrison Smalley could uphold the principle, but only because his essay's policy proposals (he supported stricter regulation, aimed at promoting public interest over railroads' rights) counterbalanced—in fact, contradicted—the theoretical part. As Hugo Meyer experienced, no such escape existed when the policy conclusions consistently followed the analysis.

At the time, Meyer could be optimist about his academic future. His lingering career had finally taken a positive bent in 1904, with an appointment as assistant professor of political economy at the University of Chicago. Now he had been invited to present one of the two papers at a special session on railroad regulation during the December 1905 meeting of the AEA.

Meyer had learned his economics well. Hadley and Taussig's work inspired his claim that only "upon superficial examination" could "the railway rates of this country … appear to be arbitrary, inconsistent, and grossly discriminating." Proper inquiry revealed that they were

> not arbitrary but compelled, that is, fixed by competition between the railways and the waterways, the competition of rival railways, and, most frequently, by the competition between rival producing centers and distributing points. … Examined more carefully, they cease to appear grossly discriminating, and prove to be honestly and intelligently discriminating. Moreover, they prove to be marvelously well adapted to the needs of our country.

Yet, Meyer went beyond the repetition of economic doctrines. He brilliantly mixed legal and economic arguments in an outstanding application of what we would now call the law-and-economics point of view. The discipline's key principles (that the law should never disregard the efficiency considerations stemming from economic analysis and that, conversely, economists should always keep an eye on how legal rules affect the economy) were the guiding lights of Meyer's argument—only a few decades too early.

Meyer underlined how correct economic reasoning had found support in judicial decisions. "For eighteen years we have had in force the act to regulate commerce, which forbids not all discrimination, but only undue and unjust discrimination," he reminded his audience. "Under that statute the federal courts have sustained every great American railway rate practice brought before them for adjudication; and the characteristic feature of those practices is discrimination, intelligent and honest, made for the purpose of meeting the needs of trade and industry." Data showed that railroads disobeying the ICC's rate-related orders had won almost every time the controversy had reached a federal court (32 times out of 35). Against "the statesmanlike spirit in which the federal courts have construed the act," and contrary to what the ICC itself had done

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in its early years, the commission was now reading "at its pleasure" into the same act "political and economic theories, none of which the Congress had made a part of the established law of the land, and at least one of which is in direct conflict with the intentions of the framers of our federal constitution." The principles followed of late by the ICC—for instance, "to grant each community the rightful benefit of location," or "to keep different commodities on an equal footing"—found no legitimacy in economic theory or in express statutory provisions. These principles "one and all, have meant: not the promotion of trade, but the restraint and the partial destruction of trade and of competition." The ICC's regulatory efforts were, in short, destroying efficiency rather than augmenting it.

Abusing its limited power to prescribe railway rates, and notwithstanding its nature as a pure administrative body, the ICC had become, in fact, "a deputy Congress, free to make and unmake the public policy as well as the law of the land." This exercise of a quasi-legislative function contradicted established constitutional doctrines and was bad economics. "The doctrine that railway rates must be based upon respective costs of service" led to dismal results: "Restraint of competition and trade, and disregard of the rights of several of the parties to each controversy over railway rates, has been the characteristic feature of every decision in which the Commission has condemned a great American railway rate practice." Meyer's bottom line was clear. While a new statute, like the pending Hepburn Act, could settle the legitimacy issue by formally granting rate-setting powers to the ICC, use of those very powers without a proper understanding of the economics of railroad pricing would spell disaster for the American economy.

Unsurprisingly, Meyer's tirade met hostile reactions, both at the AEA meeting and elsewhere. The discussant in the session, Dartmouth economist Frank Dixon, deemed Meyer's views unacceptable. The political climate of the period in general, and of the AEA in particular, led Dixon to declare: "The views of Mr. Hugo Meyer … lead inevitably to the policy of extreme laissez-faire, to the general conclusion that the interaction of competitive forces, undisturbed by state interference, has led and will lead to beneficent results to the people and industries of this country, and that any governmental interference must have a tendency to thwart the working of this beneficent policy."

Having so dismissed the old laissez faire dogma, Dixon moved on to defend the cost of service principle of rate-making, which he dubbed "the distance tariff." He turned Meyer's argument against the principle, and in favor of rate discrimination, on its head, arguing that "the policy of disregarding distance, which is carried to such an extreme by American [rail]roads" had actually been deleterious for the U.S. economy. As he put it: "the country has been obliged to bear the burden of indirect shipments on differential roads, and cross-shipments of goods of the same character to markets far removed from producing sections." In short, what benefited railroads was not necessarily good for the country as a whole.

Sadly for Meyer, the negative reactions did not end with an unfavorable discussant. This would have been business as usual in a scientific meeting. What was really surprising was that the second paper read at the session was by and large an attack on Meyer's work rather than an autonomous contribution. The session was, in fact, an ambush.

The author of the second paper was another Meyer, Balthasar Henry Meyer, an economist and sociologist at the University of Wisconsin, who was also a member of the state's railroad commission and a future ICC commissioner. Unsurprisingly, he defended the work of regulatory bodies. The final sentence of his paper said it all: "There are two, and only two, alternatives before the world today with respect to railways: either government ownership and operation, or rigid governmental control. My choice is the second alternative." Like Dixon, Balthasar Meyer had no faith in the beneficial effects of competition: "Competition as a regulator of rates and a protector against unreasonable or unjust rates has proven itself a failure in every country in which railway systems have been developed." The reason was simply that railways were enterprises like no others:

> In current discussions it is frequently asserted that railway enterprise is like every other business enterprise, and that no more legislation is needed for a railway than for a soap factory. This paper assumes that the railway differs in many of its most vital aspects from other commercial enterprises, and that upon these differences, well understood by nearly every member of this Association, but not by many *outside* of the association, rests the necessity of more far-reaching restrictive legislation.

The message was clear. How could an economist deserving his name fail to understand that railways were not like soap factories?

Against Hugo Meyer's opinion, Balthasar Meyer was skeptical that courts could replace expert commissioners on railroad matters. Only one "tribunal with power over the rate to which an appeal may be taken for the establishment of a just and reasonable basis" did exist: "A railway commission is peculiarly well fitted to arbitrate and decide questions arising from antagonistic interest." If granted more power, the ICC would not abuse of it nor manifest any "dogmatic adherence to any one principle of rate-making." It was actually true that the ICC's approach to the rate issue had vacillated over the years. Yet, Hugo Meyer's point was precisely that no such swinging was justified in view of the right economic explanation of railroad pricing, namely the explanation by Hadley and Taussig. Balthasar Meyer's conclusion was the opposite: no correct economic theory of railway rates existed; railroad managers just followed unscientific rules of thumb; regulators should thus have a free hand at setting rates in their stead. Any "sane man" denying this truth was either a bad economist or a puppet in the railroads' hands—and probably both.

FINALE: A CAREER-ENDING INCIDENT

The onslaught of Hugo Meyer's views did not remain a mere academic controversy. Because of his ideas, the Chicago economist was directly charged with corruption by a prominent member (and future chairman) of the ICC, Judson Clements, and by a U.S. senator, Iowa Republican Jonathan P. Dolliver. The indictment followed Meyer's expert testimony before the U.S. Senate Committee on Railways in May 1905, a few months before the AEA meeting. The testimony was so badly received that it triggered accusations of bribery by railroad companies. The incident caused great agitation in the academic community, especially because of the broader allegation that railroads and their privileged clients (e.g., oil companies) were influencing education in top American universities as a strategy to further their interests.

Commissioner Clements declared that "wealth always finds it is easy to employ men of theory and doctrine and ability to express its views, and they are often directed to educating the public up to the idea of the superior sanctity of vested rights as against individual rights and individual opportunities in the contests in which engage in the different walks of life. It is ordinarily to be expected that these gentlemen would attack a doctrine or practice that was at variance to the doctrines dear to the patron saint." As for Senator Dolliver, he found a way to impugn Meyer and his University of Chicago colleagues by publicly proclaiming that "the University of Chicago smelled of oil like a Kansas town"—this, of course, in reference to the munificent sponsor (John D. Rockefeller) to which the university was allegedly subservient.

The public at large liked Meyer's ideas no better. "Partisan and untrustworthy": with those words the April 4, 1906, issue of the *Boston Evening Transcript* saluted Meyer's monograph *Government Regulation of Railway Rates*. Such was the measure of popular tolerance for any law-and-economics reasoning that, regardless of its merit, did not conform to the dominant view that competition could not work in the case of railways and that government intervention was compulsory to protect public interest against railroad practices.

In June 1906, Roosevelt's pressing eventually prevailed. An almost unanimous Congress passed the Hepburn Act, empowering the ICC to declare an existing rate unreasonable and prescribe a new one. The commission now had full rate-making powers. Despite the economists' massive involvement in the debate, the enacted solution was not the one suggested by the best law-and-economics scholarship. The time for accepting the legal implications of efficiency-based economic reasoning had not come yet. In the hands of the ICC, "just and reasonable" rates could be twisted to pursue goals other than economic efficiency and, sometimes, other than U.S. constitutional values.

Meyer's academic career ended. Following these incidents, he left for Australia in 1907, where he died in 1923 without ever returning to the United States. While we cannot be sure about the motives for this decision, he never had an academic affiliation again. In his new country, he continued to do research on British public utilities and the history of state ownership in Victoria, but never became a university professor.

The assault against his—and his employer's—academic integrity did not remain unanswered, though. The powerful head of Chicago's Economics Department, James Laurence Laughlin, published a note titled "Academic Liberty" in the January 1906 issue of the *Journal of Political Economy*, of which he was editor. Laughlin's words are a good yardstick for appreciating what railroad regulation would actually mean in early 20th-century America.

"On the railway question the prevailing tone is one of general hostility to large corporations," he complained. "In some academic circles the necessity of appearing on good terms with the masses goes so far that only the mass-point-of-view is given recognition; and the presentation of the truth, if it happens to traverse the popular case, is regarded with something akin to consternation." Yes, academic freedom was at risk, but the threat did not come from the railroads' or oil barons' money:

> It is not amiss to demand that measure of academic freedom that will permit a fair discussion of the rights of those who do not have the popular acclaim. It is going too far when a carefully reasoned argument which happens to support the contentions of the railways is treated as if necessarily the outcome of bribery by the money kings.

Not only was the law-and-economics point of view far from gaining acceptance, but with it also the more basic idea that, even when dealing with politically sensible issues like railroad regulation, theoretical controversies should be handled independently of popular and political pressure. R

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