**Marcus Alexis and Regulatory Reform in Surface Transportation Industries**

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**Abstract**

***Marcus Alexis was a major contributor to the debate on deregulation of the surface transportation industry. He hypothesized that easing restrictions on rate-setting and firm-entry would promote efficiency and enhance consumer welfare in trucking and railroad industries. As commissioner and interim chairman of the Interstate Commerce Commission (ICC) he supported legislation that opened these industries to greater competition. This study revisits the model used by Alexis to derive his hypothesis, and uses current information to test its predictive accuracy long after the initial passage of deregulation. Findings from this study are consistent with Alexis’ forecast. Such evidence of his research expertise is just part of his legacy as a pioneer in the economics profession***

1. Introduction

Regulatory reform enacted in the latter quarter of the 20th century facilitated significant change in the economics of the transportation industry. Several prominent economists were instrumental in the construction and implementation of policy that promoted greater market influence on the determination of rates and entry on trucking, rail and airline transportation services. Notable among these economists is Marcus Alexis. His unique attributes as a research economist and policy analyst are evident in his stewardship of the Interstate Commerce Commission (ICC), the oldest regulatory agency in the US, during the implementation of deregulation in trucking, and rail transportation service.

This article highlights the writings and teachings of Marcus Alexis on the political and economic movement toward regulatory change in surface transportation services.[[1]](#footnote-1) Analysis of the current state of the transportation industry and the current focus of economic regulation is also presented with the purpose of examining the accuracy of Alexis’ prediction on the effect of regulatory reform on the economics of trucking and rail industries and their labor markets. The following section presents the economic importance of the ICC and the policy decisions of its commissioners by describing the regulatory history of US surface transportation. Section 3 applies the theoretical framework developed by Marcus Alexis to explain the changing political and economic opinion toward surface transportation regulation by the early 1970s. Section 4 test the accuracy of Alexis’ hypothesis on the efficacy of deregulation on product and labor market outcomes in the rail road and trucking industries. Concluding remarks are presented in the last section.

1. Regulatory History of US Surface Transportation

Surface transportation in the form of rail and trucking transportation has historically depicted an important engine of economic growth in the US. By the end of the 19th century rail was the dominant mode of passenger and freight transportation. Its cost structure included significant fixed costs such as investment in way structure (terminals and tracks), and investment in large variable costs such as locomotives and cargo cars, which presented significant entry barriers. These product market characteristics are classical examples of a monopolistic market structure.[[2]](#footnote-2) Given this industry’s significance to the economic welfare of the economy and the potential for non-competitive pricing, Congress created the Interstate Commerce Commission (ICC) under the 1887 the Interstate Commerce Act (ICA). This Act established the ICC as the first national regulatory agency in the US. The Act initially mandated the appointment of five fulltime commissioners who were prohibited from having economic links to the rail industry. Interestingly, none of the original commissioners came from the ranks of the economics profession. These appointed officers were charged with the responsibility of setting industry guidelines with the objective of protecting the consumer.

The ICC’s approach toward enhancing consumer welfare was the prohibition of traffic pools and rate discrimination (Bereskin, 1995). Nonetheless, in practice the agency was relatively ineffective limiting monopoly practices of rail carriers as firms took advantage of several loopholes in the law (Stone, 1995). These legal shortcomings as well as an expansion of ICC jurisdictional authority were later addressed with a series of amendments starting with the 1906 Hepburn Act, which extended the ICC’s regulatory jurisdiction to include pipeline transportation, ferries, and terminals. Later passage of the 1910 Mann-Elkin Act strengthened the ICC’s regulatory authority by allowing the commission to set aside rates charged by railroads, set profit levels and rule on mergers (Moore, 2012). While these amendments substantially limited rail carriers’ monopoly control over rates, competition rose from the motor carrier industry. Trucking companies were able to charge rates below those set for rail and thereby reduce rails share of freight traffic as well as place downward pressure on rail profitability. In response to the poor performance of the rail industry, Congress passed the 1920 Esch-Cummins Transportation Act, which cartelized this industry and mandated the ICC establish a ‘fair rate-of-return’ for rail carries and increased the number of commissioners to eleven (Moore, 2012, Bereskin, 1995). Despite these efforts increased regulation of rail failed to curb trucking companies’ ability to successfully compete on lucrative routes as these companies undercut the minimum prices the ICC imposed on rail carriers.[[3]](#footnote-3) In a further attempt to protect rail carriers from intermodal competition and amid lobbying efforts from the rail industry Congress passed the 1935 Motor Carrier Act which granted the ICC authority to restrict entry and set rates for for-hire carriers serving interstate routes.[[4]](#footnote-4)

In sum, the ICA and amendments to this Act established the ICC as a powerful regulatory agency with wide jurisdiction over several transportation modes, with rail and trucking prominent among them. Regulatory decisions on rates, entry, mergers and route abandonment by ICC commissioners and especially the chair of the ICC had far reaching effects on the economic welfare of shippers and in turn on the economic vitality of the US.

1. Regulatory Reform and the Alexis Paradigm

In the pursuit of enhanced consumer welfare regulation of surface transportation the series of amendments to the ICA eschewed the philosophy of laissez-faire economics, and in doing so created a business environment that contributed to the poor financial performance of rail carriers and non-competitive pricing in the trucking industry (Moore 2012). Regulation of surface transportation also contributed to the development of highly organized labor markets. The concentration of a few large carriers in each industry lowered barriers to unionization by reducing the per member cost of organizing. Rail unions’ collective bargaining settlements were characterized by rigid work rules that contributed to high labor costs, which were difficult to pass on to shippers. In contrast, trucking contracts negotiated with the International Brotherhood of Teamsters were characterized by rent-sharing with for-hire carriers (Moore, 1978).[[5]](#footnote-5)

Free market economists explained this misallocation of resources was allowed to persist in large part because regulators at the ICC were “captured” by the industries they regulated (Stigler, 1971).[[6]](#footnote-6) Rather than protecting the interest of consumers, the goal of the transportation policy shifted to protection of the transportation industry (Dempsey, 2012). Politicians’ recognition of market distortions due to regulation of surface transportation services was evident by the early 1960s. For instance, in 1962 John Kennedy became the first president to send a message to Congress recommending easing of regulatory constraints of surface freight transportation (Moore, 2012). Kennedy noted that “Regulatory policy has produced a general program preserving the status quo which is in direct opposition of the overall objective of a dynamic transportation system which can best serve the economy and defense of the country” (Vachal, 1993). The process of reforming regulation gathered momentum with President Gerald Ford as he not only encouraged Congress to enact legislation to reduce trucking regulation, but he also appointed several pro-competitive commissioners to the ICC. Economist Thomas Moore (2012) observes that by the end of 1976, those commissioners were making the case for a more pro-competitive policy at the ICC. Indeed, by 1976 Congress passed the first Act easing regulation of surface transportation service with the Railroad Regulatory Reform Act (4R) of 1976. This legislation granted the ICC authority to exempt some freight services completely from regulation (Grimm and Windle, 1998).[[7]](#footnote-7) The limited scope of the 4R Act, however, did little to help enhance the financial condition of rail carriers.

President Jimmy Carter followed Ford’s example by appointing strong advocates of deregulation (Moore, 2012). In 1979 he nominated Darius Gaskins to serve as the new chair of the ICC and Marcus Alexis and Thomas Trantum as commissioners. Gaskins and Alexis were both free market economists and Trantum who was a lawyer also supported free markets (Moore 2012).[[8]](#footnote-8) Professor Alexis’ nomination is notable not only for his expertise in regulatory economics but also because he was the first African American appointed as an ICC commissioner and later became the first African American to serve as chairman of the ICC during the first half of 1981.[[9]](#footnote-9) Alexis’ analysis of the momentum to reform regulation of surface transportation services is exhibited by his critique of the prevailing economic paradigm of regulation and his description of an alternative model for explaining the regulatory movement in the later quarter of the 20th century, which will be presented later in this paper.

During Alexis’ tenure at the ICC, Congress passed the 1980 Staggers Act and the 1980 Motor Carrier Act (MCA), which are two major pieces of legislation that profoundly altered the business environment in rail and trucking. The Staggers Act permitted carriers greater freedom to set rates and to abandon unprofitable rail lines (Grimm and Windle, 1998). The Motor Carrier Act significantly reduced barriers to entry for interstate routes (Chow, 1991) and allowed carriers to adjust rates by 10 percent without seeking approval from the ICC (Grimm and Windle).

Drawing on his economic expertise Alexis predicted that removing the restraints of surface transportation regulation would benefit those firms that were able to adapt to a more competitive business environment while providing customers lower rates and improved service (Alexis (1982).[[10]](#footnote-10) In support of his predictions research reveals appreciable firm performance gains and consumer welfare gains in surface transportation services immediately following regulatory reform. For instance, Grimm and Windle report that just prior to the Staggers Act nearly one-fourth for Class I rail mileage was in bankruptcy and railroad return on equity averaged below 3 percent. They find an absence of bankruptcies following this Act while return on equity for Class I rail carriers reached 9.38 percent by 1993. They attribute this improvement in the industry’s financial health in part to efficiency gains, abandonment of low demand routes and reduction of labor cost. [[11]](#footnote-11) Indeed, Talley and Schwartz-Miller (1998) report productivity gains increasing at an annual average of 7.6 percent. Winston (1998) shows that consumers were the beneficiaries of rail’s performance gains, as he reports following deregulation average real rail rates per ton mile declined over 50 percent, and average hauling times fell at least 20 percent.

Performance gains by trucking firms were equally impressive as those reported for rail. For instance, Grimm and Windle find real operating costs in the previously regulated sectors of this industry fell between 20 and 27 percent by 1987. Productivity over the same observation period increased as much as 61 percent between 1990 and 1993. As was the case with rail introduction of new technology and significant reductions in labor costs contributed to these cost improvements.[[12]](#footnote-12) Apparently these cost-savings were passed on to customers as Winston (1998) reports real average rates between 35 and 75 percent following the passage of the 1980 Motor Carrier Act.

While the product market effects of deregulation reveal the desired outcome for customers, deregulation’s immediate effect on labor is somewhat less positive, at least for workers. For instance, Peoples (1998) finds union membership for truck-drivers in the previously regulated for-hire sector fell from 46 percent just prior to deregulation to 23 percent by 1996. Still, he finds the work-force size increased from 997,000 to 1,907,000.[[13]](#footnote-13) Real wages for truck drivers also fell significantly from $499 a week to $353 a week.[[14]](#footnote-14) Yet, Hirsch and McPherson (1998) show truck drivers in previously regulated segments of this industry continued to receive higher wages than truck drivers in segments that were never regulated. Again, drawing on his experience with labor in the trucking industry, Alexis (1998) explains that to support non-pricing competition through improved quality and reliability of service, previously regulated carriers are motivated to employ and retained drivers who possess superior unmeasured skills such as reliability and safe driving habits (Alexis, 1998). These worker attributes command adequate compensation.

Compared to truck drivers, the labor effect of deregulation on unionization, wages and employment was measurably different for rail workers. Union membership for railroad works did not fall appreciable as 79 percent were unionized in 1978 compare to 74 percent by 1996. In contrast, the size of rail’s work force fell from 580,000 in 1978 to 282,000 by 1996. Also, unlike wages for truck drivers real weekly wages for workers did not change appreciable as they were $491 in 1978 and fell slightly to $471 by 1996 (Peoples, 1998). Within the free market paradigm posited by Alexis, the lack of a substantial wage decline comports well with the non-trivial labor productivity gains reported by Talley (1998).

In addition to accurately predicting the immediate effect of surface transportation deregulation on industry performance, Alexis also employs a unique model of regulatory theory to explain why prevailing regulation models failed to predict the movement toward deregulation. Those models assume pressure groups such as industry leaders and unions use the political process to secure economic benefits. Producer gains arise because of the potential for regulators to become captured by the industry they were selected to oversee. It is theorized that regulators are susceptible to capture in part because commissioners are generally staffed by experts who previously worked in the industry and they tend to be sympathetic to the interest of the firms the regulated (Ash and Seneca, 1985, Carlton and Perloff, 2005). Within this theoretical framework policy change from producer to consumer protection is quite challenging, since the objective of regulators is the maximization of majority voters (Peltzman, 1973). Given the deep pockets of pressure groups such as the American Trucking Association (ATA) as well as the International Brotherhood of Teamsters (IBT) who supported maintenance of trucking regulation, *a priori*, it seemed unlikely that the opponents of trucking regulation could deliver such a majority vote.

Alexis challenges the validity of the maximization majority objective by noting the need to build a coalition of constituent groups whose support likely varies on the different nuances of issues. He contends it is more realistic to assume pressure groups focus on the voter at the margin. Hence, pressure groups opposing standing legislation need only focus on convincing that set of voters to support new legislation. Investing resources with the purpose of persuading the marginal voter to support regulatory reform is rational if the marginal voter is part of the group of ‘median voters’ who have not been adequately informed of the benefits of such policy change.[[15]](#footnote-15) These voters may not have a strong leaning toward regulation or deregulation and are open to persuasion and are also in the position to influence extent to which regulation is changed.[[16]](#footnote-16) Phillips and Phillips (1984) provide an example of gains from using research findings to inform the median voters to support regulatory reform in the trucking industry. These authors show that the Grey Panthers and the American Farm Bureau, both strong lobby groups, came out to vigorously support regulatory reform after receiving research results from the Department of Transportation revealing the excessively high rates trucking carriers charged to haul food. An additional advantage to political groups adopting the margin-value voter approach is it requires less funding than pursuing a maximization majority objective, thus leveling the playing field for under financed groups opposing standing legislation.

Alexis further criticized the prevailing theory on regulation by arguing ‘majority maximization’ may prove to be an inappropriate objective of policy-makers if regulators are wealth maximizers, given this alternative objective, regulators might choose to avoid supporting decisions that appear biased because acquiring such a reputation limits future earnings potential. Industry pressure groups, then, could face difficulty capturing such independent minded regulators.

In his analysis of surface transportation deregulation, Alexis employs a dynamic game theoretic model to explain why the ATA and the Teamsters were unable to prevent the passage of the 1980 Motor Carrier Act despite the perception that the actions of previous ICC commissioners suggested that these regulators were captured by the trucking industry. His model allows for a series of dates at time *t* when regulators and regulated firms negotiate rules regulating the business operations of trucking companies. Rules cover items such as price levels (pt), barriers to competitive entry (nt), and safety regulations (e.g. daily hours of service provided by drivers (host)) where the subscript *t* indexes the time period for regulatory hearings. For this model rules on pricing, entry and safety are dependent in part on the history of previous regulatory rules. Thus, current regulatory legislation depend on regulatory history as depicted by equation (1)[[17]](#footnote-17)

Lt ≡ ((pt=0), (nt=0), (host=0));…; ((pt-1), (nt-1), (host-1)) (1)

where Lt denotes legislation at time *t*. Using this conceptual framework to shape his analysis Alexis’ argues that the outcome of the regulatory ‘game’ is largely predetermined by earlier events establishing rules, procedures and the like. For example, using equation (1) as a guide, rate levels, entry restrictions and safety regulations determined in past legislative negotiations (Lt=0;…;Lt-1) influence regulatory legislation outcomes at time *t*. Alexis notes that exogenous shocks such as changes in the political climate can alter the historical path of regulatory decisions. This dynamic modeling contrast with capture theory that assumes a static political equilibrium yielding a stable regulation equilibrium (Alexis1982). Alexis’ theoretical approach recognizes initial legislation is often amended allowing for changes in public opinion. Applying this philosophy to the history of regulatory reform in surface transportation Alexis (1982) observes that “The responsibilities and philosophies of the ICC were at times quite rigid, but public pressure has forced the ICC to consider flexible decision making directed at the long-term health of the entire transportation industry.”

 The relevancy of Alexis’ model is captured by the series of public hearings on competitive entry that helped sway political opinion in favor of deregulation. For instance, in 1979 the D.C. court of Appeals ruled in favor of granting an application for route service to carrier P.C. White based on the potential benefits to the public associated with enhanced competition from the entry of this carrier. Prior to this ruling applicants were prohibited from serving routes that could and would be serviced by incumbent carriers who were interested in providing this unmet need. Further legislative gains promoting entry soon followed with the Liberty Trucking Co. decision, which shifted the burden of proof of public gain from applicants (potential entrants) to burden of proof from the incumbent to show entry was not in the public interest. Lastly, the 1980 Arrow Transportation decision prohibited incumbent carriers from protesting applications from potential entrants if such entry would reduce incumbents’ traffic in the challenged market. Rather injury to the public was now required to prohibit the granting of route application to entrants. These rulings helped lay the foundation for the ICC to build the case for relaxation of remaining entry restrictions on interstate trucking.

It should be noted that while the hypothesis of impending regulatory reform might seem obvious after the fact, predictions of a more market-oriented business environment in the trucking industry were not the norm at all at that time. Indeed, Phillips and Phillips (1984) observe that the ATA and IBT formed a formidable political force opposing trucking deregulation. The large number of members belonging to these trucking organizations, their access to Members of Congress, and their significant financial resources contributed to the consensus among knowledgeable political observers that any serious effort to reform federal regulation of the trucking industry would fail (Phillips and Phillips). Interestingly, past lobbying successes by these politically powerful organization might have contributed to their inability to defeat efforts to deregulate their industry by 1980. As Alexis observes, “by the time they realized what the force alignments were, it was too late to materially affect the outcome.”

1. Contemporary Test of the Alexis Free Market Vision

While regulatory reform during and immediately following Alexis’ tenure at the ICC resulted in significant gains in consumer welfare and appreciable reductions in labor costs, such research used for these analyses generally ends by 1995, the year when the ICC Termination Act was passed. Regulatory changes following the passage of this Act have the potential to further influence consumer welfare as well as employment and wage outcomes in surface transportation industries. This Act eliminated the ICC and many of the ICC’s remaining regulatory functions by eliminating the need for trucking carriers to file rates. Trucking carriers were now given authorization to carry goods wherever they wanted to serve, and railroads were granted greater freedom to set prices (Moore, 2012).[[18]](#footnote-18) With the removal of ICC control, motor carriers and railroads were free from interstate regulatory oversight of rates and route service (Bereskin, 1995). Such movement toward near total deregulation of surface transportation regulation allows for a test of the long term accuracy of Alexis’ prediction of industry performance during an era of near complete reliance on markets to set prices in trucking and rail.

 a*. Findings on Industry Performance*

Analysis based on the attributes of the free market espoused by Alexis for trucking predicts that nearly complete economic deregulation of an inherently competitive industry following the abolishment of the ICC should promote efficiency as carriers seek competitive advantage through cost saving technology and techniques. Gains would also be expected in rail even though its industry structure does not resemble that of a conventionally competitive market.[[19]](#footnote-19) Intermodal competition from trucking provides rail carriers motivation to achieve cost savings at the risk of foreclosure. Information on trucking and rail efficiency following the abolishment of the ICC is presented in Figure-1. These findings indicate that the for-hire trucking industry experienced continued improvements in cost efficiency immediately following the policy change. Lower cost/sales ratios, reported in Figure-1 are indicative of greater operating efficiency as each dollar of sales is generated using fewer resources.[[20]](#footnote-20) Operating costs as a percent of net sales for for-hire carriers fell from 38.0 in 1994 to 32.5 percent two year later after the abolishment of the ICA and remained near or below the 32.5 percent level thereafter.[[21]](#footnote-21) Findings for the rail industry indicate a general trend of efficiency gains for the post ICC abolishment period, as cost as a percent of sales fell from 38.2 percent in 1995 to 23.2 percent by 2012.

Compared to forecast on efficiency gains, economic theory based on the attributes of the free market is less deterministic in predicting the effect of deregulation on profits for the for-hire trucking. On the one hand, downward pricing pressures associated with stepped-up competition should restrict profit gains. On the other hand, efficiency gains reported above should contribute to higher profits. Indeed, findings presented in Figure-2 fail to reveal an obvious trend of consistently high or low profitability. Rather, these results indicate that after a trend of increasing profit rates just before the abolishment of the ICC, average returns on assets fluctuated between a high of 10.5 percent in 2009 and a low of 4.4 percent in 2006. For rail, conventional economic theory suggests that removal of remaining constraints on price setting in tandem with increasing efficiency gains reported above contributes to rail carriers ability to secure relatively healthy profit rates. Results presented in Figure-2 support this prediction as rates slumped noticeably three years prior to the total deregulation in 1995. Average returns on assets trended upward from 2.1 percent in 1995 to a high of 5.7 percent in 2011.

*b. Findings on Transportation Rates*

Information on trucking and rail shipping rates are presented in Figure-3. These findings are used to test Alexis’ prediction of enhanced welfare for consumers (shippers) following the enactment of pro-competitive policy in surface transportation. Rate findings for trucking and rail reveal price stability prior to the removal of remaining regulations on rates in 1995, and this stability continued throughout the post ICC abolishment sample period.[[22]](#footnote-22) While, the lack of real gains in shipping rates is consistent with the notion that consumer welfare has not diminished over the long term, a more complete analysis requires examination of motor fuel price trends since transportation operations are highly sensitive to changes in fuel prices. When compared to fuel prices rail and trucking rate reveal a clear pattern of fuel price increases by 1999. This divergence in fuel prices and shipping rates indicates carriers have avoided contributing to consumer welfare loss, even when higher shipping rates could be justified to cover increasing fuel costs.

*c. Labor Market Outcomes*

Research by Alexis (1998) on the potential labor market effects of pro-competitive policies in surface transportation industries emphasized the importance of barriers to entry when predicting unionization and employment trends and the importance of compensating differentials when predicting wage trends. He observes that removal of entry restrictions in trucking is expected to facilitate the entry of non-union competitors in trucking contributing to lower industry unionization rates and potential higher levels of employment. In contrast to the huge influx of trucking companies, the number of rail carriers declined following deregulation due in part to mergers and acquisitions. Hence, the absence of non-union entry should allow unions to avoid significant erosion of union membership rates. Employment in rail, however, are unlikely to rise given the introduction of labor saving technologies. With regards to deregulation’s potential wage effect, Alexis (1998, p. 123) notes that wage declines are not a certainty. He argues that in a competitive market “differences matter” and employers attempting to obtain a competitive advantage are likely to refrain from losing productive workers’ by providing competitive earnings that compensate productive and reliable drivers.

Figure-4 presents information on union density for the pre and post ICC abolishment observation samples. These findings show that annual unionization rates for for-hire truck drivers were relatively stable for the five year pre-abolishment observation period. These rates remained near 25 percent for those five years. However, unionization rates for for-hire truck drivers fell throughout the post ICC abolishment sample reaching levels resembling levels in the general economy. For instance, unionized for-hire drivers’ share of the for-hire driver work force falls from 24.82 percent in 1995 to 10.44 percent by 2011. Unionization rates fell from 11.3 to 7.3 percent for the US work force covering this same time span. Findings for union rail operatives reveals one of the highest organized labor force with rates exceeding 86 percent for the five years preceding the 1995abolishment of the ICC. Rail unionization rates do decline following 1995, but nowhere near the rate found for trucking, as over 76 percent of rail operatives belonged to a union during this period.

Information on for-hire truck driver and rail operative employment is present in Figures 5 and 6, respectively. These findings reveal non-trivial employment growth for for-hire truck drivers prior to the abolishment of the ICC and continuing until 2003. The succeeding employment decline overlaps with the great recession, yet employment levels remain above or near levels achieved when the ICC Termination Act was passed. Employment trends for rail operatives reveal stable employment levels for the five years preceding the 1995 Act and this stability continued until 2002.[[23]](#footnote-23) Rail employment then declines markedly from 87,007 in 2002 to 58,140 by 2012.[[24]](#footnote-24)

While union and employment trends suggest mixed results for labor, wage findings presented in Figure-7 shows an absence of a pattern of declining wages. For-hire truck drivers are shown to receive wages comparable to mean wages paid to the overall US work force with a slight wage divergence of relatively lower trucking wages following the 2007 recession. Still trucking wages remained near pre-deregulation after 2007. Findings for rail operatives indicate declining wages immediately preceding the enactment of pro-competitive polices, and these wage rates at stay near those levels for the remainder of the post deregulation sample period.

1. Concluding Remarks

Marcus Alexis’ contributions to the economic profession are many.[[25]](#footnote-25) This paper focuses on his influence on the economic development of trucking and rail industries while he served as a commissioner and interim chair of the Interstate Commerce Commission. He exhibited courage and professional independence by entering into the policy arena at a time when few economists served in the capacity of commissioners of regulatory agencies. He used sound economic theory to articulate his arguments and to support policy recommendations that were sometimes unpopular with incumbent firms and labor unions. The motivation for his recommendation was the goal of enhancing operation efficiency and consumer welfare. In general, findings from this study support the accuracy of Alexis’ market prediction decades following deregulation of these industries. Shipping rate stability prevailing in trucking and rail despite non-trivial increases in real fuel price since 2000 comport well with Alexis’ prediction of consumer welfare enhancement. A continuing trend of improved efficiency several years after initial regulatory reform, especially in rail, are also consistent with Alexis’ prediction. Hence, it appears that consumers and carriers have benefitted from more recent pro-competitive policies. Findings on labor market outcomes for workers employed in trucking and rail do not indicate that labor was a clear beneficiary of the most recent era of deregulation. While trucking employment has risen significantly, wages have not changed measurably. To be fair such stagnation is consistent with wage patterns of the US work force. In contrast, to the employment findings for truck drivers, employment fell appreciably for railroad employees. Their wage also followed the economy-wide pattern of wage stagnation.

In closing, the influence of Marcus Alexis on the business environment in surface transportation is underscored by the following quote from Alan Robinson writing in the *Courier, Express and Postal Observer*, (2011) “Gaskins, Alexis and Tantrum were the core of the ICC when I was there as a graduate school intern. I saw first-hand how the appointment of individuals who understand the need to take risks that included changing years of regulatory precedent in order to ensure the revival of the rail industry and improve service quality and competition in trucking. These individuals were not afraid to support legislative changes that more politically cautious and precedent bound commissioners would shy away from.”

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Figure-1Cost efficiency trends for for-hire trucking and rail companies (percentages). The demarcation line depict the passage year of the ICC Termination Act. Source: Annual volumes *of Almanac of Business and Financial Ratios* (Troy).

Figure-2 profit rate trends for for-hire trucking and rail companies (percentages). The demarcation line depict the passage year of the ICC Termination Act. Source: Annual volumes *of Almanac of Business and Financial Ratios,* (Troy)

Figure-3: Indexed real average freight revenue per ton-mile trends for rail and trucking and real motor fuel prices trends. Sources: Revenue per ton-mile taken from the Bureau of Transportation Statistics. Motor prices taken from the *Council of Economic Advisors Report to the President*. The demarcation line depict the passage year of the ICC Termination Act.

Figure-4: Union density trends (union members’ share of work force). The demarcation line depict the passage year of the ICC Termination Act. Sources: Union information for trucking and rail taken from the annual Current Population survey - Outgoing Rotation Group files. Union information for the US labor force taken from www.unionstats.com.

Figure-5: Employment trends for for-hire truck drivers (number of workers). The demarcation line depict the passage year of the ICC Termination Act. Source: annual Current Population Survey - Outgoing Rotation Group files.

Figure-6: Employment trends for rail operatives (number of workers). The demarcation line depict the passage year of the ICC Termination Act. Source: annual Current Population Survey-Outgoing Group files.

Figure-7: Mean real hourly wage trends (1988 dollars). The demarcation line depict the passage year of the ICC Termination Act. Source: annual Current Population survey - Outgoing Rotation Group files.

1. Rail and trucking transportation service constitute surface transportation for the purposes of this study. [↑](#footnote-ref-1)
2. Monopoly in rail is indentified by lack of competition along routes rather than the traditional measure of number of competitors in an industry. [↑](#footnote-ref-2)
3. The strategy of selectively targeting lucrative routes as opposed to competing on all routes served by rail carriers is an example of ‘cream-skimming’. Trucking carriers at that time were able to engage in such behavior because they did not face regulatory stipulation that required rail carriers to provide access to shippers locate along low demand routes in rural locations. [↑](#footnote-ref-3)
4. For-hire carriers are companies whose only line of business is providing transportation services to shipper. [↑](#footnote-ref-4)
5. Even though trucking companies set their rates below that charged by rail, their relatively low operating cost at that time allowed them to generate rent while maintaining a competitive advantage over rail carriers. [↑](#footnote-ref-5)
6. Capture theory argues that regulators are held captive by the industry they oversee and promote rulings that advance the interests of the regulated industry. [↑](#footnote-ref-6)
7. The 1973 Regional Rail Reorganization Act (3R) act was actually the initial legislation addressing the financial performance of the rail industry. However, this act did not address rate-setting or route restrictions. [↑](#footnote-ref-7)
8. The selection of economists to serve as commissioners of regulatory agencies was the beginning of a new trend. Alexis observes that prior to his selection “Economists [were] seldom privileged to be active participants in bodies vested with jurisdiction in economic regulations. These collegial forums are traditionally the provinces of lawyers and former members and staff of legislatures” (Alexis, 1982). [↑](#footnote-ref-8)
9. Alexis resigned from his post as interim ICC chair in part because of his concerns that future commissioners appointed by President Ronald Reagan would not continue on the path toward further deregulation. [↑](#footnote-ref-9)
10. Alexis also argued that removal of entry restrictions would promote competition from minority groups who were traditionally excluded from offering their services in this industry. In support of this prediction he comments that “Before I was on the ICC there were less than 20 minority group members who held certificates out of 17,000 regulated truckers. When I left there were close to 300, which was a 15-fold increase in a period of two years.” (Manhattan Report on Economic Policy, 1982). Further evidence of employment gains by minorities in this industry are reported by Husbands-Fealing and Peoples (2006). They find a statically significant post-deregulation racial employment disparity erosion in trucking following. They also find and significant post-deregulation racial employment erosion in rail, however, a substantial employment decline for white workers explains this outcome. [↑](#footnote-ref-10)
11. Winston (1998) reports class-1 railroads abandoned one-third of their track miles and real operating costs cost per-ton mile fell 60 percent immediately following rail deregulation. Most of these routes were short-haul services to rural areas. These services are now provided by trucking companies or class-II and class-III rail carriers, at real rates exceeding the subsidized rates charged prior to the Staggers Act. [↑](#footnote-ref-11)
12. An example new cost-saving technology is electronic based communications and information systems used in tandem with logistics software, which allowed carriers to coordinate efficient delivery and pick-up schedules (Peoples, 2009). [↑](#footnote-ref-12)
13. The trucking industry includes for-hire and private carriage carriers. The latter category are non-trucking companies that haul their own shipments. [↑](#footnote-ref-13)
14. Post-deregulation truck driver wage erosion occurred despite productivity gains, in part, because trucking companies passed on cost-savings to customers in the form of lower prices. In addition, entry of low-wage, non-union competitors created a labor market environment that substantially weakened the industry union’s ability to continue the pre-deregulation practice of sharing rent. [↑](#footnote-ref-14)
15. The median voter theorem indicates that for a majority rule voting system outcomes will reflect the choices most preferred by the median voter. Hence, within this conceptual framework, an optimizing candidate will focus a disproportionate share of his or her campaign funds targeting these voters. [↑](#footnote-ref-15)
16. This strategy for obtaining a majority vote is taken from the median voter theorem which asserts that a majority rule voting system chooses the political option most preferred by the median voter, Holcombe (2006). [↑](#footnote-ref-16)
17. The framework used to provide a formal presentation of Alexis’ model is an adaptation of Tirole’s depiction of dynamic games (Tirole, 1988, p. 245) [↑](#footnote-ref-17)
18. Oversight of remaining surface transportation functions was transferred to the Surface Transportation Board (STB). [↑](#footnote-ref-18)
19. There are only seven class I carriers serving the US. [↑](#footnote-ref-19)
20. Ying (1990) identifies increasing load factors as significant source of cost-savings allowing trucking carriers to use fewer resources per ton-mile. [↑](#footnote-ref-20)
21. A surge in real motor fuel prices starting in the late 1990s creates a challenge lowering cost/sales ratios in surface transportation industries. [↑](#footnote-ref-21)
22. While stable shipping rates do not harm consumer welfare of shippers, there’s no guarantee that shippers will use this lack of price volatility to contribute to stable prices for their customers. Other forces in their respective product markets, such as degree of product market competition, should influence wholesale and retail prices of goods hauled by trucks. [↑](#footnote-ref-22)
23. Locomotive engineers, train conductors and switchmen are the rail operative occupations used in this study’s sample. [↑](#footnote-ref-23)
24. Declining employment trends are explained by the significant loss of jobs for switchmen. These jobs were affected by the introduction of electronic switching systems. Employment trends for Locomotive engineers and conductors. Locomotive engineers actual experienced employment gains following the abolishment of the ICC and conductors experienced employment growth peaking at 62,000 by 2000 and fluctuating between the low 40,000s and high 50,000s thereafter (Peoples 2013). [↑](#footnote-ref-24)
25. A sample of Alexis’ contribution to the economics profession include appointments as director of the Federal Reserve Bank of Chicago in 1985, serving four years as deputy chairman and becoming chairman in 1990 of the Chicago Fed. He also served as director of the National Bureau of Economic Research. [↑](#footnote-ref-25)