The Impact of Competition Policies in the United Kingdom and the United States on Economic Performance

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The aim of this paper is provide an investigation into the effect of competition policy on industrial performance. The impetus for this research project was a British economy class taken on the London Economics Study Group in spring 2007.

I. Introduction

In many of the readings and complementary lectures for the course the British Professors and scholars continuously held that the recent revival of the British economy was linked to changes in competition policy. These changes included the deregulation actions taken under Margaret Thatcher’s 1980s administration and continued under successive governments. The goal of this study is to analyze this claim to see if it can be supported empirically. In addition, the paper will provide a detailed comparison of the United Kingdom’s economy to the United States’ economy to see the role, if any, played by differing competition policies in the performance of several selected industries.

There are strong theoretical reasons in economics for linking competition policy to industrial performance. In this context, competition policy refers to the extent to which governments can encourage free market competition in an attempt to bring about a more efficient allocation of resources. Obstacles to free market competition include government regulation and nationalization, labor market rigidities, government support for cartels and interference in free trade. Economists measure industrial performance in a number of ways including profits, costs, productivity and technological advance. Moreover, industrial performance is linked with many structural variables such as economies of scale, market concentration, product differentiation, advertising, vertical integration and competition policy. Theoretically, the degree to which firms are able to compete with one another is a major determinant of the extent to which they can impact price, earn profits and innovate.

Basic principles of economics hold that increased competition will have a positive effect on industrial performance. Increased competition is generally linked to higher levels of productivity, lower prices, increased innovation and more product differentiation. The economics behind this maintains that in order for firms to compete with one another they must be efficient so they are not driven out of the market. This efficiency usually lends itself to higher productivity, lower costs, and consequently lower prices; all of which benefit consumers.

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and increase social welfare. Moreover, firms also compete with one another by diversifying and filling market niches, which result in product differentiation and increased consumer choice; these are additional potential benefits for society. Industrial performance, which as mentioned above can be measured in a myriad of ways, is improved by higher levels of competition because firms are operating more efficiently with lower costs, higher productivity and normal profits.

This paper, grounded in the theoretical background above, uses the work done by William G. Shepherd in his seminal 1982 study “Causes of Increased Competition in the US Economy 1939-1980” as a starting point to compare the competition policies in the UK and the US for the airlines, telecommunications, railways, and coal industries. As will be discussed in more detail later, Shepherd’s research involved categorizing the post-deregulation level of competition in the specified industries, and then determining the factors that led to new competition. This study, in contrast, will function as a comparison between the US and the UK, comparing not only the different competition policies employed, but also whether the resulting industrial performances were similar. Primarily, it will be looking to explore, and provide evidence concerning the hypothesis that policies that promote increased competition have a significant impact on industrial performance.

As noted above the catalyst for conducting this empirical study was the claim made by several British economists of the large impact of deregulation on industrial performance and how the aggregate effect of this was related to Britain’s economic revival. The decision to contrast the UK with the US, however, was made for several reasons. The UK and the US not only had varying degrees of regulation for the four selected industries, but the two countries also took very different approaches to deregulation. The four industries covered in this study were also chosen for specific reasons. Airlines historically had a very different industry structure in the UK and in the US with the UK having one large airline, even post-deregulation, and the US market being characterized by several large airlines. Moreover, both the British and American markets were affected by the entry of Low Cost Carriers (LCCs) in the late 20th century so it is interesting to see how this impacted industrial structure and performance in each country. Telecommunications was an industry in which the UK and the US had similar market structures, but contrasting approaches to both regulation and deregulation; thus, an examination of the performance and structure outcomes is worthwhile. The railway industry was handled very differently in the US and the UK. The UK’s industry was more regulated than the US’s, but their privatization approach was more extreme and became quite controversial. Thus, it will be interesting to analyze which approach led to better industrial performance. Coal, the final industry to be explored, was chosen because it was only a regulated industry in the UK and never nationally run in the US. As such, it provides an opportunity for comparison of industrial performance in an industry untouched by government in the US, and regulated and then deregulated in the UK. Overall, the selected industries provide for a wide range of comparisons between the UK and the US leading to an informed conclusion.

This paper consists of several sections. First there will be an explanation of Shepherd’s 1982 analyses and a discussion of his methodology that will be applied later in this work. Secondly, there
will be a detailed historical analysis of the UK’s experience in competition policy and the resulting industrial performance for the four selected industries, which will be followed by a similar discussion for the US. This will allow for significant comparisons and contrasts to be made about the two countries and their experiences with deregulation. The last section will utilize the empirical data analyzed and draw a conclusion about the relationship between industrial performance and competition policy for the specific industries examined.

II. Shepherd

In his 1982 study Shepherd looked at why competition increased in the American economy during the four decades from 1939 to 1980. He concluded that antitrust policies were the main reason for increased competition. Shepherd also considered deregulation and import competition, in addition to antitrust policies, as possible causes of a higher level of competition. Moreover he noted in his work that transportation and telecommunications were influenced by both antitrust and deregulation. Shepherd constructed a model that estimated the amount of competition in a given industry by using both structural and behavioral evidence to assign markets into one of four specific categories. Shepherd placed each selected industry into four classes of structure: pure monopoly, dominant firm, tight oligopoly, or effective competition (catchall category for remaining market structures).

The categories he constructed had very specific criteria. In order to be classified as “pure monopoly” a single firm’s market share in the industry had to be near or at 100 percent, the firm must be able to effectively blockade entry and have monopoly control over the level and structure of prices. For the “dominant firm” category the single firm must have a market share between 50-90 percent with no close rivals be able to keep entry barriers high, have price control ability, the ability to influence innovation and earn high returns. For a market to be classified as a “tight oligopoly” the four-firm concentration ratio would need to be above 60 percent with stable market shares, the industry must have medium to high entry barriers, and there must be rigid prices present, indicating cooperation among firms. The final category “effective competition” had the characteristics of a four-firm concentration ratio below 60 percent, unstable market shares, flexible pricing, low entry barriers, little collusion and low profits.² Shepherd’s categories will be discussed and applied later in this paper, and used in drawing conclusion based on the empirical evidence gathered.

III. The UK: Airlines

The UK’s experience with government regulation of industry gained momentum after World War II. During these years many industries were nationalized as the state increased its role in the economy. The airline industry, during the mid to late 20th century was composed of large state-run airlines, with only a sprinkling of less-successful private airlines, which mainly served small, charter routes (like British United Airways during the 1960s). The major player in the UK commercial airline industry was British Airways (BA). BA was formed by the merger of the two state-owned airlines British European Airways and British Overseas Corporation Airways in 1972. During the 1970s and early 1980s the only

rival was the also state-owned British Caledonian (BCal), which the government created in an attempt to introduce competition into the industry. However, despite the state’s efforts, BA continued to dominate the industry throughout the 1980s.

Government deregulation of the airline industry occurred in 1987 with a public flotation of BA’s shares. The newly privatized BA, however, continued to control the market and soon acquired BCal, which foiled the government’s attempts to introduce competition. Similarly, BA went on to take over TAT European, Deutsche BA and Qantas. 3 Initially after privatization, the number of airlines in the UK industry increased, but over time many of the new operations were unprofitable and were driven out, like BCal. Over the years, and still today, BA continues to be the major player in the UK airline industry.

The current market structure of the industry, 20 years after deregulation, consists of BA holding dominant firm status. This is clearly reflected in data from the Civil Aviation Authority for 2005-2006 which shows BA with a market share of 45.8 percent (measured as percentage of all available tonne kilometers) with Virgin Atlantic as the closest rival, holding a 14.5 percent share. 4 This market structure, however, is more competitive than in the mid to late 20th century when BA had a virtual monopoly. It is also an improvement from the 1995-1996 Civil Aviation Authority statistics which had BA with 58.7 percent of the market and Virgin Atlantic with only 9.8 percent. 5 Moreover, BA also faces more competition when you consider that in the airline industry a “market” is actually a city-pair. In this sense, BA has a lot more competition than previously as both Virgin Atlantic and easyJet fly the many of the same routes as BA. Another significant change in the market structure of the industry post-deregulation has been the entrance of Low Cost Carriers (LCCs). In 1985 Ryan Air an Irish-owned airlines, established itself in the UK with a UK-Ireland route. Ryan Air and its successors were based on a low cost model developed by Southwest in the US. Southwest’s LCC model consisted of low fares, high frequency flights, point to point service, no free meals or drinks, no seat assignments, short flights, and flights to secondary airports. 6 The other successful low-cost carrier in the UK, easyJet, entered the market in 1995. For each success of an LCC however, the UK also saw many failures, like Debonair and Buzz. 7

The LCCs created a new market for airline travel. The low-cost airlines did not seek to compete in the long haul market and instead targeted customers whose main travel concern was economic, and would only fly if it was cost-effective. Ryan Air, for instance, seeks to capture only the low-cost market and has lower quality of service with only the bare essentials on their flights. easyJet, in contrast, found a market-niche by using an intermediate strategy, providing low-cost fares, but also flying into major airports and having better customer service. 8 easyJet’s strategy is more of a threat to established carriers because it is directly challenging their market. The response of the incumbents to LCC entry was not to try

5 Ibid

7 Ibid
8 Ibid

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and replicate the low-cost market, but instead BA’s response was to promote short haul flight routes with a “price and value” slogan, attempting to differentiate with good service. Overall, the largest change to the UK airline industry has been the entrance of LCCs, and although the industry is slightly more competitive BA continues to dominate with Virgin Atlantic holding the number two spot.

In addition to the change in competition policy leading to more competition within the industry, privatization also had positive industrial performance effects. Studies show that efficiency gains led to an almost 15 percent decrease in BA’s fares post-privatization. These efficiency gains were mainly attributed to changes in managerial pay with the introduction of a new executive share option scheme and a large increase in the chairman’s salary. Moreover, a privatized BA has also seen a longer-term improvement in unit cost performance which is evidenced by a visible decrease in revenue per RPM (revenue passenger miles) and cost per RPM, which confirms the company is operating more cost effectively. Moreover, BA was also financially strong during the 1990s with increasing positive profit even while its market share was falling which indicates efficiency and productivity gains. Deregulation provided the atmosphere for new competitors to enter and succeed including Virgin Atlantic and the two main LCCs Ryan Air and easyJet. The change in competition policy, the privatization of BA, opened up the market to more competition than was present before. More significantly, it also led to a stronger, more efficient performance by BA as evidenced by lower prices combined with continued profitability and an improved cost performance.

IV. The UK: Telecommunications

Similar to the airline industry, telecommunications in the UK also began as a state-run enterprise. Since its advent, telecommunications was part of the General Post Office, a nationalized industry. In 1981 Post Office Communications was renamed British Telecom. In 1981, BT’s monopoly in telecom ended when the government granted an operating license to newly-privatized Mercury Communications. Mercury became Cable and Wireless in 1997, and eventually part of National Telecommunications Limited (NTL), which later merged with Virgin Mobile and Telewest in 2006 to create Virgin Media. The 1980s telecom market structure consisted of a duopoly between BT and Mercury.

In 1984 the Telecommunications Act eliminated BT’s exclusive rights to provide services. BT was also privatized in 1984, with the initial selling of 50 percent of its shares to the public, and the remaining shares in 1991 and 1993. Some regulation of the industry persisted, however, with the government instituting price cap, which remained until 2006, in an attempt to curb BT’s market power. Several elements of the UK’s telecom deregulation approach are interesting to note. The UK did not required BT to interconnect with all service providers and instead promoted the construction of alternative networks to compete against each other. Further, “equal access” (ability for users to select a long distance provider without dialing extra digits) was not mandated. The UK allowed “ unbundling” (providers able to compete for retail distribution and use networks elements in a

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9 Ibid
11 Ibid, 275

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“piecemeal” fashion), and encouraged “facilities based competition,” which meant firms could succeed only by being efficient (in contrast to the US which allowed competition based on residual pricing). More deregulation continued to emerge over time. During the 1990s, the market opened up even further and new Public Telecommunications Operators were given licenses. In 2003, the Communications Act further updated the market with the granting of licenses being eliminated in favor of any company being “generally authorized” to provide telecommunications services. This decree held so long as the provider met 21 general conditions of entitlement that laid out their responsibilities as a telecommunications operator. Additionally, in recent years the market for wireless telephone service has grown rapidly. This has led to the entrance of new telecom firms that provide mobile phone service, some British and other foreign-controlled, into the UK market.

Changes in competition policy begun during the 1980s had an effect on market structure and concentration in telecommunications. Where previously BT had a virtual monopoly in telephone services now other providers are present. Although, BT still retains a dominant position, there is more competition than before. Market share data from the Office of Telecommunications (OFTEL, now OFCOM) for 2002-2003, measuring all calls from fixed lines, gives BT 71 percent, NTL-Telewest 21.1 percent, Cable and Wireless 2 percent, Kingston 0.5 percent and Others 14.5 percent. For the mobile phone market, competition is a bit more balanced with Orange, Vodaphone, O2 and T-Mobile all holding almost equal market shares. Basically the fixed line telephone market is more competitive than under state-ownership but still dominated by a single firm; however, the mobile telephone market is what Shepherd terms a “tight oligopoly.”

Although the UK telecom market is not as competitive as it could be, large gains in industrial performance have been made. According to Parker (1994), labor productivity has grown much faster since privatization, although total factor productivity levels have grown less. Parker also notes that employment costs declined and R+D expenditure fell as a percentage of turnover, which reflects a more efficient use of resources. However, in contrast, the price caps placed on BT did not allow it to be as efficient and productive as may have been possible with no constraints.

In conclusion, the privatization of BT and opening up of the market to new telecom operators injected some competition into telecommunications in the UK. This resulted in a slightly more competitive structure than before but still no firm to rival BT’s dominance. Moreover, the explosion of the wireless market led firms to enter there and currently an oligopolistic concentration persists. However, the end of regulation and state-control led to visible increases in BT’s productivity even in the face of price caps. The end of price caps, as of 2006, may lead to even more productivity and efficiency increases in the near future.

V. The UK: Railways

Like airlines and telecommunications, railways in the UK began a government enterprise. In 1948 the four largest state-owned railroads became British Rail. British Rail’s financial history is mixed, with losses in the 1950s followed by reorganization and profitability in the 1960s. During the 1980s the government, in the run-up to deregulation, cut funding and forced British Rail to become more cost effective. In 1987 the railways were privatized under a plan constructed by the Adam Smith Institute. The proposed method called for “vertical separation” in which a separate company would manage the railroad infrastructure, Railtrack (later, Network Rail). The privatization plan also broke British Rail into 25 different passenger operation companies, three companies who leased rolling stock and many different rail maintenance companies. The UK’s vertical separation of the railroads went the farthest, in terms of private control, of any railway deregulation in the world.

For all of the UK’s railway privatization failures, the approach did result in competition among train operators. Currently there are 21 passenger operators and four train operators in the UK. In this respect a pretty competitive structure does exist in the market with several train operators competing per route. However, in contrast, after the Railtrack’s collapse in 2000 the infrastructure company was taken over by Network Rail. This is not a public company and is run by committee monitored by the Office of Rail Regulation. Many investors and economists refer to this as the “re-nationalization of the railways” since Network rail is a quasi-governmental company with no public shares. Additionally, in 2003 Network Rail took overall maintenance from private companies. Thus, although the market is mainly competitive there has been a reinstigation of government control in the UK railroad industry in recent years.

Due to the controversy surrounding railroad privatization it is difficult to measure to what extent competition policy had an effect on industrial performance. Clearly, the 2000 bankruptcy and collapse of the private, infrastructure company Railtrack was not good for the industry. However, in recent years the performance of Network Rail has been more financially sound. The most recent data from Network Rail’s Annual Reports and Accounts for 2006 show a £74 million reduction in operating costs, and an increase in operation profit from 2005 to 2006. Also a report from the Association of Train Operating Companies (ATOC) holds that passenger levels are 23 percent higher post-privatization. For 2005, the ATOC reported passengers would take 1.07 billion railway journeys, the highest amount since 1958. Overall, the

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16 Hilmola, Olli-Pekka and Szekely, Bulcsu, “Deregulation of Railroads and Future Development Scenarios in Europe- Literature Analysis of Privatization Process Taken Place in US, UK and Sweden. 2006, 15

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most recent data suggest the railway industry is thriving and has begun to recover from its few difficult years directly following privatization. In sum, competition policy changes clearly affected market structure with numerous new train operators, for both passenger and freight operations, emerging. In this context, deregulation has produced significant competition. However, the privatization process was also partially reversed with the government regaining control of the infrastructure and continuing to operate the company. That being said, the current performance of Network Rail has been strong so it is difficult to conclude that the quasi re-nationalization was not the best move for the industry.

VI. The UK: Coal

Like the previous mentioned industries, coal in the UK was also a nationalized industry. In 1946 the Coal Nationalization Act was passed which created British Coal. The historical legacy of the coal mining industry in Britain is one of great strife with a legacy of unions and labor strikes. During the 1980s, however, Margaret Thatcher took the life out of the coal mining union, once the most powerful union in the country. In the run-up to privatization, the government closed a lot of coal mines, more than 27 collieries in total. The mines were closed because coal production output had to be reduced as it had been replaced by cheaper energy imports like natural gas. Since the privatization of the power industry in 1990 cheap, gas-supplied electricity generators have replaced coal as fuel. The Coal Industry Act of 1994 privatized British Coal; bids were invited to acquire the mining company in January 1996. Although bids were accepted from various independent companies, all the major regional packages (central north, central south and northeast England) came under control of RJB Mining (renamed UK Coal in 2001).

Although changes in competition policy did not really impact the structure of the UK coal industry, it is much more competitive than prior to deregulation. UK Coal is by the far largest coal mining company in the UK, mining more than 60 percent of the UK’s coal and providing 7 percent of its electricity. However, the coal industry is much smaller than it once was and most of the competition UK Coal faces is from imported coal and natural gas. During the privatization process it is clear the impending change in competition policy had an effect on industrial performance. This is evidenced by a measured increase in labor productivity in a study done by David Parry, David Waddington and Chas Critcher (1997). Recently, as of 2004, UK Coal’s managing director reported the company is producing at its lowest cost ever. While this is a significant measure of industrial performance strength it cannot only be attributed to privatization, but to the high levels of import competition the industry is facing as well.

In sum, the UK coal industry today is very different than when it was a nationalized industry. It is much smaller and less coal is being produced domestically than before privatization. Although, it is similar in that one UK firm dominates the


domestic industry and only faces competition from abroad. However, since UK Coal only supplies 7 percent of the country’s electricity, it does not have the amount of market power it did years ago. This is primarily a result of significant changes in the energy market that have reduced the demand for coal. Even so the industry is still alive, and UK coal continues to be a productive and efficient company.

VII. The US: Airlines

After discussing the UK’s experience with regulation and deregulation in the four selected industries we now turn our attention to the US’s deregulation process in order to draw comparisons. Unlike the UK’s state-owned airlines, the US had a system for regulating the private airlines. From 1938 to 1978 the Civil Aviation Board (CAB) was responsible for regulating the airlines as a public utility. CAB had the power to set fares, routes and schedules. This system did not allow for the airlines to compete directly with one another, or operate productively and efficiently. Federal control over the airlines came to an end with the Airline Deregulation Act of 1978, which was the first instance of breaking up a government enterprise since 1934. The legislation eliminated the constraints on airlines. This allowed for airlines to set their prices and fly wherever they chose, which would allow them to minimize costs and operate more efficiently.

The period following deregulation was marked by airline failure and consolidation within the industry. The immediate aftermath of 1978 saw the entrance of many new airlines, but many were inefficient and over a hundred were eventually driven out. In 1985 there were twenty major airlines and within two and a half years over half of them disappeared, most by merger, including: AirCal, Ozark, Piedmont, PSA, Republic and Western. Moreover, between 1976 and mid 2001, over nine major carriers either went bankrupt or were liquidated including: Eastern, Midway, Braniff, PanAm, Continental, America West and TWA.27 Many of the bankrupt airlines, instead of leaving the market, merged with others in an attempt to regain financial stability; others merged to increase their market power. Examples of mergers include TWA with American in 2001 and America West with US Airways in 2005. The result of so many failures and takeovers is American, Delta, Northwest and other major airlines, increasing their market power.

Another important development in the US airline industry is the entrance of LCCs. Southwest, the airline that began the low-cost model, entered the US market in 1971. Southwest’s entrance and profitability with low fares was a major impetus for airline deregulation. Southwest’s model has been replicated by others, most successfully by JetBlue in the US market. As mentioned previously, Southwest’s strategy was also modeled in the UK by easyJet and Ryan Air. The response by the incumbent carriers in the US to LCC entry was much different than that seen in the UK. The large carriers responded by attempting to compete in the market and failing. United Airlines tried to enter the low-cost market by starting the LCC “Ted,” and Delta also attempted with “Delta Song.” A study by Steve Morrison examines the actual, adjacent and potential competition Southwest created, not only through its own fares but with its effect on competitors as well. He measures the aggregate impact of lower fares to be $12.9 billion in benefits to consumers in 1998

alone.\textsuperscript{28} Given this empirical estimate it is clear Southwest created a lot of competition in the airline industry and led to fares being significantly lower than they otherwise would have been.

Although recent consolidation has had the effect of reducing the national level of competition, on most major routes competition still exists because it is the concentration level on individual routes that matters. Post-deregulation there has been a 25 percent increase in the average number of airlines per route. For example, in 1992 six airlines carried the route from Boston to Phoenix, compared to only two in 1977.\textsuperscript{29} Currently, market share in the US is divided between several large airlines. Airline market share, measured in domestic revenue passenger miles, for March 2006 to February 2007 reports American at 15.4 percent, United 12.1 percent, Southwest 11.9 percent, Delta 11.2 percent, Continental 7.7 percent, Northwest 7.0 percent, US Airways 4.7 percent and Jet Blue 4.0 percent.\textsuperscript{30} From this data it is clear there is currently competition in the industry on many different routes, which was not present before deregulation. However, there has been recent talk of possible future airline mergers including US Airways taking over Delta, a possible United and Northwest merger, and a potential Continental-United merger.\textsuperscript{31}


\textsuperscript{30}“Bureau of Transportation Statistics,”<http://www.transtats.bts.gov/>


Not only has deregulation impacted the structure of the airline industry, it has also had significant effects on industrial performance. In terms of fares, between 1976 and 1990 passenger fares (measured as average yields per passenger) declined 30 percent and 10-18 percent of this is attributed solely to deregulation.\textsuperscript{32} The primary cause of this is the presence of price competition among airlines, leading to deeply discounted fares. An increase in productivity was also measured because restrictions have been removed and airlines could operate to minimize costs. Moreover, airlines have also seen an increase in occupancy rates, with a rise to 61 percent post-deregulation, compared to 52.6 percent before.\textsuperscript{33} Moreover, efficiency was also increased by the move to the “hub and spoke system” that occurred after deregulation. This system consists of airlines routing their flights through several hub cities. This allowed for the airlines’ equipment to fully adapt to the routes in that small prop jets were used for short hauls and jets for longer flights. This resulted in a more efficient allocation of resources.

In sum, it is clear that deregulation changed both the market structure and more significantly, the industrial performance of the airline industry. Although there were quite a few post-deregulation mergers, as evidenced by current market share data the airline industry in the US is still pretty competitive. Moreover, the entrance of LCCs like Southwest and Jet Blue forced the incumbent carriers to lower fares in order to compete, creating significant consumer welfare gains. Furthermore, the post-deregulation efficiency gains, through fares, cost reductions and resource allocation,
indicated a much stronger industrial performance. In contrast to the UK, it is clear the American airline market is still a bit more competitive, although similar gains in performance have been observed. This conclusion suggests that changes in competition policy are linked with positive changes in industrial performance.

VII. The US: Telecommunications

Unlike the airline industry, the telecommunications industry in the US was a regulated national monopoly prior to its break-up and deregulation. The first telephone company was Bell Telephone Company, renamed American Bell and then later, when creating its long distance telephone network in the late 19th century, AT&T. AT&T gained monopoly status with government help after the Kingsbury Commitment of 1913. This agreement between A&T and the government allowed AT&T to buy as many competitors as it wished as long as it sold an equal amount. This resulted in AT&T gaining control in specific geographic areas while selling its less desirable companies. The commitment also mandated that AT&T provide long distance service to independent exchanges. During this period AT&T retained market control with its “Bell system” which consisted of twenty two Bell Operating Companies and Western Electric, with AT&T as the parent company. Owning Western Electric, a telephone manufacturer, allowed AT&T to force customers into single telephone service. Under the Communications Act of 1934 the government established the Federal Communications Commission (FCC) to regulate the telephone industry. Under this legislation, large telephone companies (AT&T) had to provide universal access to all citizens, which was done by pricing local residential service at below cost and subsidizing it with other network services.

During the 1960s and 1970s AT&T’s monopoly status began to wane. Both the Hush-a-phone (1956) and Carterphone (1968) cases were instrumental in this because AT&T was forced by the FCC to allow interconnection to their phones from an outside company. Additionally, during this time the rise of cheap microwave equipment occurred, which allowed competitors to create long distance networks at a lower cost than before. This led to the success of Microwave Communications (MCI) in selling telecom services to large businesses. The 1970s was also the beginning of long distance competition due to asymmetric price regulation. AT&T, as previously mentioned, was mandated to subsidize local service; MCI, in contrast, was allowed to offer long distance service without providing local service. This system created competition but not merit competition. Moreover, this asymmetry continued even post-deregulation with the FCC imposing price caps on AT&T.

In 1984 the US Department of Justice carried out a 1981 consent decree in an antitrust suit against AT&T that led to AT&T’s break-up. AT&T’s local services were split into seven independent regional operating companies, the “Baby Bells,” and in return AT&T was allowed to enter the internet market. In 1984 the Bells were Ameritech (acquired by SBC in 1999), Bell Atlantic (acquired by GTE in 2000, became Verizon), Bell South (acquired by at&t in 2006), NYNEX (acquired by Bell Atlantic in 1996), Pacific Telesis (acquired by SBC


35 Green and Teece, 25-27

in 1997), Southwest Bell (1995 became SBC, acquired by AT&T in 2005 and changed name to at&t) and US West (acquired by Qwest in 2000). The next legislative development in the US telecom industry came in 1996 with the Federal Communications Act, replacing the 1934 Act. Here, the Federal Government attempted to create competition by forcing the Bells to open up local telephone networks to other companies. The idea was that once “effective competition” was present there the Bells could expand into other telecom markets.37

Since the US’s approach to telecommunications deregulation was very different from the process done in the UK, it is interesting to contrast the effects on market structure. In regard to local service distribution, the Baby Bells operated as natural, regional monopolies, which was accepted by the government until 1996. The new components of deregulation were clear attempts to inject competition into the local service market. The government stressed providers competing in the retail distribution of networks services. This meant “unbundling” at every possible stage so that companies would be able to build networks with very little investment, which would promote competition. Interconnection between service local and long distance service providers was also mandated to allow for network building. Deregulation also allowed for resale or competitors “reselling” the incumbent provider’s local services and then instituting their own.38 This method helped MCI and Sprint to enter the local market. Thus, although the US system ended up bringing greater competition to the local market it was not based on efficient companies gaining power, but residual pricing and therefore not merit-based competition. The UK, in contrast, promoted competitors building alternative networks which would only succeed if cost effective.

Similar to local service, the long distance market was also opened up as a result of deregulation. The US required “equal access” which allowed users to select a long distance provider without dialing any extra digits.39 This allowed MCI and Sprint to access the residential market. Also, another way in which new entrants penetrated the long distance market was a result of regulatory asymmetry, as they circumvented the access charges for local service and passed the costs onto the consumer.40 These companies were called Competitive Access Providers. This is how Metropolitan Fiber Systems (MFS, later Worldcom and now a part of MCI/Verizon) entered the telecom market.

It is clear the changes in competition policy did have an effect on market structure. However, the impact is much more pronounced in the long distance market than in local service. In the local service market, as of 2004, the Bell Operating Companies had 68.9 percent of the market (as measured by nationwide local service revenue).41 For the long distance market, residential market shares as of 2005 were at&t with 18.1 percent, Verizon 16.2 percent, SBC 15.9 percent, MCI 7.7 percent, Sprint 6.2 percent, BellSouth 5.9 percent, Qwest 5.9 percent, and Other 24.1 percent.42 However, factoring in the recent mergers of AT&T acquiring SBC and BellSouth and becoming at&t, along with the MCI/Verizon merger the market shares are: at&t 39.9 percent, Verizon 23.9 percent, Sprint 6.2

38 Green and Teece, 28-32
39 Ibid, 34
40 Ibid, 37
42 Ibid, 9-10
percent, Qwest 5.9 percent and Other 24.1 percent. Even factoring in the recent mergers, however, the long distance market in the US is fairly competitive, especially compared to the UK’s fixed line market. Similar to the UK, the US also experienced a sudden boom in the mobile telephone market with the invention of wireless technology. Currently there are four nationwide providers in the US wireless telephone market: Sprint Nextel, Verizon Wireless, T-Mobile and at&t Wireless (formerly Cingular Wireless). The market is heavily concentrated among these four with a Herfindahl-Hirschman Index (HHI) of 2706.\textsuperscript{43} As an HHI above 1800 indicates concentration this value allows us to conclude the market is not very competitive and can be classified as a “tight oligopoly.” This is similar to the wireless industry in the UK which, as previously mentioned, is also controlled by four large firms.

Thus, although there has been a move toward consolidation in the US telephone market, with the former Baby Bells condensing into 3 large companies (at&t, Verizon and Qwest) there is much more competition than prior to deregulation. Moreover, there is a very competitive rivalry between at&t and Verizon, which benefits consumers in terms of productive efficiency. However, the concentration in the wireless sector is quite high. As for whether or not these changes in competition policy have impacted industrial performance, recent data seems to indicate it has and the effect has been positive. Post-deregulation productivity in the industry has increased, and evidence from the recent mergers suggests that both at&t and Verizon are doing quite well financially.\textsuperscript{44} In addition, the US Communications industry is also a leader in research and development which suggests these companies are employing innovation in order to successfully compete.\textsuperscript{45} Overall, it is very clear the end of regulation, and recently of price caps, gave these telecom companies the ability to compete with one another which has resulted not only in technological advancements in the industry but also with increased consumer choice.

IX. The US: Railways

The history of the railway industry under regulation is quite similar to the airlines in the US. Unlike the state-owned British railroads during regulation, the US system consisted of a series of regulations and constraints placed on private railways. Historically, US rail regulation transpired because there was “too much” competition in the industry. Railways did not like competing with each other, and shippers favored stable, known rates over competitive ones.\textsuperscript{46} Regulation began in 1887 with the Interstate Commerce Act, which created the Interstate Commerce Commission (ICC) to oversee railway regulation, setting “reasonable and just rates” and enforcing rebates as unlawful.\textsuperscript{47} Subsequent railway regulatory legislation ensued, but the basic aim of those was simply to reinforce the basic tenants of the initial Act. During World War I the government took regulation a step further and nationalized the railroads, but this was soon reversed after the war

\textsuperscript{43} “Annual Report and Analysis of Competitive Market Condition with Respect to Commercial Mobile Services,” FCC Report 06-142
\textsuperscript{44} “AT&T to buy BellSouth,” CNET News, 5 March 2006. <http://news.com.com/AT38T+to+
\textsuperscript{47} Ibid, 22-27

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ended. During the mid to late 20th century the railway industry suffered large declines in both its passenger and freight businesses due to decreased demand for railway travel. By the 1970s financial troubles plagued the railway industry, and the railways were losing over 300 million a year, threatening the viability of the entire industry. In 1970 the government took action and combined several passenger railroads in order to create the National Railroad Passenger Corporation (AMTRAK) to provide intercity passenger rail service. AMTRAK was operated by the government as a “for profit” company that was free from all regulation. Also in 1970 Penn Central, the largest railroad on the east coast, declared bankruptcy. In response the government first attempted to bail it out with subsidies. After that failed, however, the government nationalized the railroad, renaming it Conrail. These 1970s developments set the stage for railroad deregulation and eventual financial revitalization.

Deregulation began with the creation of AMTRAK because it was able to operate without any regulatory constraints, even though it was a quasi-governmental organization. The process was completed under the Staggers Act of 1980, which eliminated the pricing, exit and operations constraints that existed under regulation. In 1987 Conrail was privatized and public shares sold. The effects of deregulation on market structure are pretty clear. Privatization has led to further consolidation in the railroad industry. In 1982 there were 32 Class I railroads, by 1999 this had decreased to six in the US and two in Canada, and currently in 2007 there are only five in the US along with the two Canadian railroads. These are CSX Transportation, Norfolk Southern Railway (Eastern railroads), Union Pacific Railway, BNSF Railway (Western railroads) and Kansas City Southern Rail. In Canada the two remaining railroads are Canadian National Railway and Canadian Pacific Railway. Most recently the government has strengthened the antitrust laws regarding railway mergers. In 2000 when Union Pacific wanted to merge with Canadian National to form the largest North American railway the Surface Transportation Board (STB) put a fifteen month moratorium on railway mergers, effectively killing the merger. Although the moratorium was eventually lifted the STB increased the burden on railways seeking to merge by requiring they show more definitively how the proposed merger would be in the public interest. Although there has been a trend toward consolidation in the railroad industry, a study by Denis A. Breen concludes that mergers have increased competition due to labor and operating cost savings along with lower average rail rates. This conclusion is based on his work analyzing the 1996 merger of Union Pacific and Southern Pacific Railways. This lends support to the conclusion that the US railway industry, in terms of freight (Class I railroads) is much more competitive post-deregulation. In contrast, however, AMTRACK (the intercity passenger railway system) is still a quasi-governmental organization and does not face any domestic passenger rail competition.

In addition, the changes in competition policy have also had a large impact on the performance of the rail industry in recent years. Louis Thompson’s

\[\text{Colgate Academic Review} \quad \text{http://commons.colgate.edu/car/vol2/iss1/15}\]
(2000) study on regulation in the US shows evidence that every year since deregulation average freight rates have fallen. In addition, a study by Wesley Wilson (1998) supported this by showing that deregulation had significantly lowered rates for almost all commodities. He also concluded that productivity advances have “dominated” the industry post-deregulation. Further evidence of the industry being more productive after the end of regulation is Conrail, as a private company, being able to make the reforms necessary to improve their company and profit. In sum, railways are certainly better off from an industrial performance standpoint post-deregulation. Moreover, the industry appears to be competitive as well and the recent mergers have been good for consumer welfare.

Although there were many differences in the UK and the US’s individual approaches to railway deregulation, the most significant was the UK separating the infrastructure from the train operating companies. In the US the railway companies themselves own the track. This difference led to significant infrastructure problems in the UK resulting in poor service and train delays that were not seen in the US post-deregulation. Furthermore, the outcome from deregulation in both countries also turned out to be quite different. Currently, the infrastructure and maintenance of the rail track in the UK is under control of Network rail a government-operated, “private” company. In contrast, in the US each railway is individually responsible for maintaining the infrastructure for their trains. Thus it is important to draw the distinction between where the competition lies in the UK railway industry, as it is only between the passenger and freight operating companies. Moreover, in the US the competition in the industry is much clearer with individual freight railways as well as continued regulation with the government-control of AMTRAK.

X. The US: Coal

Unlike every other industry examined in this paper, the coal industry in the US has never been under government control or regulation. The early history of coal in the US dates back to the 19th century where the industry was composed of small coal mining operations with a few skilled miners and unskilled assistants. After the Civil War with the beginning of railroad construction the coal industry boomed and helped fuel the industrial revolution. At the turn of the 19th century the industry consisted of “cutthroat competition” between firms. One interesting aspect of the coal industry’s history is that during the Great Depression there was a unique Supreme Court decision handed down that allowed Appalachian coal companies to collude because the industry was struggling so much due to the depression. That incident aside, most of the US coal industry’s history is marked by competition and continued production. During the 1960s, however, the coal industry began to change greatly with the market structure moving toward large, diversified firms and away from the small independent companies. After the 1970s energy crisis, the coal producers were hit hard by falling prices in the late 1970s and many small, inefficient producers left the market. More


recently, in the 1980s and 1990s there has been an increase in the size of the average coal mine and a decrease in the number of mines nationwide. Also, this is coupled with an increase in size of the average coal producer and the presence of more foreign-owned companies in the industry.\textsuperscript{55}

As suggested above, the trend in the US coal industry has been towards larger firms operating larger coal mines. During the last two decades there has been increased competition between the three coal operating regions left in the US (Ohio River, Wyoming and West Virginia). The industry has also faced competition from overseas producers, but not to the same extent that UK coal companies do. Moreover, compared to other US industries coal mining is not very concentrated at all. In 1976 the largest four coal mining producers, Peabody Coal, Consolidation Coal, AMAX and Island Creek, produced 25 percent of the coal mined in the US, while the largest eight produced only 34 percent. Similarly, in 1986 the largest four, Peabody Coal, Consolidation Coal, AMAX and Texas utilities, produced only 20 percent and the top eight 30 percent. The trend continues into the 1990s, in 1991 the largest four producers, Peabody Coal, Consolidation Coal, AMAX and ARCO, produced 22 percent and the top eight 33 percent.\textsuperscript{56} It is a very interesting conclusion, although perhaps not surprising, that the most competitive industry looked at in this paper is the US coal industry which was never regulated or nationalized.

XI. Conclusion


operating companies. In addition, unlike the US, the UK also privatized the railway infrastructure which was controlled by a separate company. This privatization approach had severe problems leading to the financial collapse of the infrastructure company resulting in the government regaining control of that company. Bankruptcy and re-nationalization aside, competition among the train operating companies was created post-privatization. Moreover, there have also been industrial performance gains, including higher passenger levels post-privatization, along with an improved financial performance of Network Rail over the past few years. In the US, however, changes in competition policy took the form of the government deregulating the railway industry. This led to much more competition among freight operators in the US, but not for passenger rail transportation, as there is still only one operator: government-run AMTRAK. Deregulation in the US was linked to industrial productivity gains in the form of lower freight rates for almost all commodities.

As for the coal industry, in the UK the dominant firm (UK Coal) was privatized. Although there continues to be one large firm dominating UK coal mining, the company does face serious competition from imported coal. As a result of both privatization and import competition, there have been labor productivity increases in the industry. The US, in contrast, never nationalized or regulated the coal industry. In fact, it has been historically, and is still today, a competitive industry. The US coal industry, compared to the other three industries studied, has the most competitive market structure.

In sum, although both countries changed their competition policies, they did so in very different ways. The UK generally privatized their large, state-run industries, whereas the US primarily lifted the regulations present on private firms. However, the interesting thing to note here is that although differing degrees of competition emerged in the two countries, both saw significant gains in industrial performance emerge as a result of privatization or deregulation. This study indicates that positive industrial performance can be accrued simply through privatization and that injecting effective competition is not necessarily essential for such gains to be made.