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Patterns of entry and exit in the deregulated German interurban bus industry

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ABSTRACT

We study patterns of entry and exit in the German interurban bus industry in the first three years after its deregulation in January 2013. Using a comprehensive data set of all firm and route entries and exits, we find that the industry grew much quicker than originally expected – with particularly a few new entrants being most successful in quickly extending their route networks from regional to national coverage. Although the clear majority of routes is operated on a monopoly basis, competition does play a key role on routes with a sufficiently large base of (potential) customers. From a spatial perspective, three years after deregulation, the entire interurban bus network connects 60 percent of all 644 larger German cities – with the intensity of entry being dependent on the number of inhabitants, average income, the share of under 24 years old and the presence of intermodal competition by intercity railway services.

1. Introduction

The importance of market entry for competition and innovation is mainly twofold. On the one hand, entry plays a crucial role as an equilibrium force in that it competes away excess profits to an equilibrium level ('imitative entry'). On the other hand, entry also plays a creative role in markets, serving as a vehicle for the introduction and diffusion of innovations. Such 'innovative entry' is seen as a disequilibrium force that propels the industry from one equilibrium state to another (see, e.g., Geroski, 1991, 1995; Hüschelrath and Müller, 2013).

Although market entry is a common occurrence in many industries and markets, recently deregulated industries provide a particularly appealing environment for analyses of entry behavior – first and foremost because the removal of legal barriers to entry is expected to be followed by the development of new business concepts and their application in both existing (incumbent) markets (i.e., imitative entry) and new markets (i.e., innovative entry). Although the study of the effects of such market entries on, e.g., price levels and consumer welfare is certainly of particular interest – reflected in many ex-post studies guided by the seminal contributions of Morrison and Winston (1986) and Kahn (1988, 2003) – a complementary investigation of entry and exit patterns is also likely to contribute to our understanding of competitive processes in recently deregulated industries.

In this context, we take the opportunity of the recently deregulated German interurban bus industry to investigate selected route entry and exit patterns empirically. In particular, studying a selection of (1) basic, (2) competition-related and (3) spatial entry and exit patterns for the first three years after deregulation not only generates important insights on the (aggregated) route entry and exit behavior, but also allows the derivation of a set of conclusions for transport (and competition) policy. Such conclusions might not only be helpful for both politicians and government officials in Germany but are also of relevance for other

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(European) countries in which the national interurban bus industries were either deregulated recently[2] or in which the respective governments are currently in the process of implementing the necessary legislative steps.

The remainder of the paper is organized as follows. In the subsequent second section, we initially characterize the process and outcome of the deregulation process in the German interurban bus industry and provide a brief initial overview on firm entry, firm exit and industry growth after deregulation. The third section is then devoted to a detailed characterization of several types of route entry and exit patterns – subdivided further into basic entry and exit patterns, competition-related entry and exit patterns and spatial entry and exit patterns. While descriptive evidence is discussed for all three types of patterns, the particular importance of spatial entry and exit patterns for transport policy demands a complementary econometric investigation of key drivers of the intensity of entry (as measured by the number of destinations and the number of departures per city). The subsequent fourth section introduces into several recent developments in the industry in the year 2016 and discusses important implications for transport and competition policies. The final fifth section summarizes our main results and closes with a brief general assessment of the likely welfare effects of the deregulation of the German interurban bus industry.

2. Deregulation of the German interurban bus industry

In this section, we provide an initial characterization of the deregulation of the German interurban bus industry (see generally Dürr and Hüschelrath, 2015). A brief discussion of the deregulation process in Section 2.1 is followed by an initial overview on operating licenses and firm entry, firm exit and industry growth after deregulation in Section 2.2.

2.1. The deregulation process at a glance

Although deregulation processes were initiated in many industries and countries in the last two to three decades, a mixture of public policy arguments and lobbying activities delayed the initiation of such processes in several sectors or industries. For Germany, this description applies to the interurban bus industry. Since 1931, bus companies were only allowed to offer regular interurban bus services – above a travel distance of 50 kilometers – on routes on which the state-owned German rail company Deutsche Bahn AG (or its predecessors) was unable to provide an acceptable service (see also Walter et al. (2011) for further information). Due to the rather dense (interurban) railway network in Germany, the respective law – that aimed at protecting a core business of Deutsche Bahn AG (DBAG) – led to only sporadic interurban bus services[3] except for routes to/from former West Berlin (operated by Berlin Linien Bus – a subsidiary of DBAG) and international routes (by providers such as Eurolines Germany).

The regulation of the German interurban bus industry remained intact until 2009 when the German government announced plans to deregulate the industry (responding to political pressures from the European Union). In the same year, three students established DeinBus, a company that, whenever a sufficiently large number of travelers to a particular destination were found, rented a bus and offered the respective service. Additionally, Deutsche Bahn AG started to operate its own buses under the new IC Bus brand around the same time. Despite several attempts by different lobbying groups to prevent or at least weaken the deregulation of the industry, the German interurban bus industry was fully deregulated in January 2013 – after the respective paragraphs of the Passenger Transport Act[4] were changed in the usual legislative (and lobbying) processes (see generally Maertens (2012) and Schiefelbusch (2013) for further information). According to the new §42a Personenbeförderungsgesetz, national scheduled transport with passenger vehicles is allowed for routes above a distance of 50 km and where no regional rail connection with up to one hour travel time is offered (see KCW (2014) for more detailed information).

2.2. Firm entry, firm exit and industry growth after deregulation

Prior experiences with deregulation processes in transport industries in general (see, e.g., Williams (1993), Morrison and Winston (1986, 1995) or Borenstein and Rose (2007) for the US airline industry) and interurban bus industries in particular (see, e.g., Robbins and White (1986, 2012) for Great Britain or Aarhaug et al. (2012) for Norway) would expect – at the early stages of a deregulated industry – substantial market entry by both new and incumbent firms leading to industry growth through the creation of new lines and routes. As we will show in the following by discussing post-deregulation developments with respect to operating licenses and firm entry, firm exit as well as general industry growth, the deregulated German interurban bus industry follows this general pattern.

2.2.1. Operating licenses and firm entry

Although the virtual non-existence of scheduled interurban bus services prior to the deregulation of the industry prevents a meaningful comparison of pre- and post-deregulation states, the characterization of selected industry developments since the beginning of the deregulation movement also provides valuable insights. Generally, the full deregulation of the industry in January 2013 led many (potential) providers to apply for an operating license. According to the German Office for Goods Transport (2017), p. 12, the number of licenses increased from 86 in December 2012 to 221 in December 2013, 285 in December 2014 and finally 341 in December 2015 (an overall increase of almost 400 percent).

In terms of firm entries, i.e., operating license holders that actually decided to offer scheduled passenger transport services with buses, the German Office for Goods Transport (2017), p. 10 reports a rather small growth from 76 firms in 2012 to 97 in 2013, 94 in 2014 and finally 84 firms in 2015. However, despite this only moderate increase in the number of providers, the deregulated environment allowed several new entrants to contribute to a substantial extension of the industry according to measures such as the number of lines or the number of trips. For example, comparing the years 2013 and 2015 reveals an increase in the number of lines from 131 to 299 (i.e., almost 230 percent) and a jump in the average number of weekly trips from 4714 to 9018 (an increase of about 190 percent; see German Office for Goods Transport (2017), pp. 14f).

Briefly introducing the main players in the industry, in addition to the incumbent firm Berlin Linien Bus already mentioned in the preceding section, three new entrants (eventually) turned out to be particularly successful in constructing national interurban bus networks: MeinFernbus, FlixBus and ADAC Postbus. While MeinFernbus started operating – on a small scale though – still in the regulatory era in April 2012, FlixBus and ADAC Postbus commenced their operations in February 2013 and October 2013, respectively. All three new entrants are supported by strong financial investors and follow a subcontractor-type business model in which already existing local bus companies – typically operating in the non-scheduled segment of the bus industry before – agree to offer services under the respective interurban bus brand.

[2] For a characterization of first experiences with the deregulated French interurban bus industry, please see the valuable contribution by Blayac and Bougette (2017).

[3] The most frequent exceptions were routes connecting inner cities with secondary airports often located in rural areas (without a decent rail connection) such as, e.g., Mannheim to Frankfurt Hahn airport (HHN), a road trip of more than 130 kilometers.

[4] The most important change – leading to the deregulation of the interurban bus industry – referred to §13(2) Personenbeförderungsgesetz ('Passenger Transport Act') in which the strict entry regulations were codified.