

# The Analysis of the Performance of the Largest German Regional Rail Passenger Transport Companies

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**Abstract:** German railway reform implemented in 1994 meant abolishing monopoly of Deutsche Bahn and introducing of competition. Other companies were allowed to enter local passenger rail transport (SPNV). Their share gradually increased and achieved about 40 % in 2020. The reform doubled the number of passengers between 1994 and 2019. However, many new participants, especially with foreign owners suffer big losses from their operations, some of them even went bankrupt or can operate only due to massive support from their owners. Another problem is that railway companies face shortage of qualified personal staff. The article describes the essence of the reform and analyzes the performance of the main railway companies operating in SPNV, investigates whether they achieved their market share gains in this period due to strong competition via price and if personnel costs had a significant impact on their results.

**Keywords:** German railway reform, German SPNV companies, railway competition, competitive prices, financial performance, personal cost

**JEL classification:** D23, D43, M30, R48

## 1. INTRODUCTION

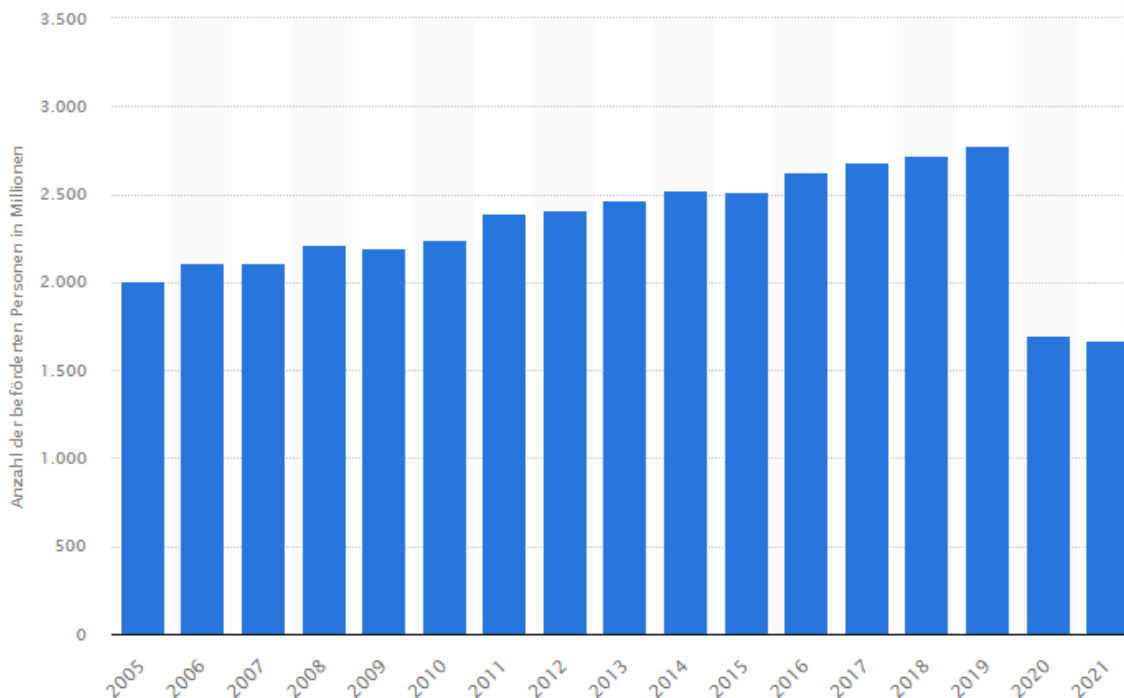
On the basis of the European transport strategy with the goal to increase the shares of rail transport in the transport market (European Commission, 2001), the members of the European Union (EU) realized their railway reforms. Their main objective was to enable competition in the existing railway network to increase the efficiency of the railway sector. German railway reform was implemented already on 1.1.1994 and it has really led to intensified competition in regional rail passenger transport in the country. The market shares of the previous monopolist DB Regio dropped to 59 % in the year 2020 due to the intense competition. Liberalization of rail passenger transport in Germany allowed some large foreign state railways to enter the German market through subsidiaries and gain market shares. For passengers, this development is positive, as railway companies have significantly expanded their services (e.g., new vehicles with higher comfort, shortened interval times). Overall, passenger numbers have increased year after year. Due to further transport tenders, which usually have a term of up to maximum 15 years, there is an opportunity for railway companies to achieve further growth.

Despite the positive development in passenger numbers, some railway companies operating in Germany are making high losses. For other companies, the results have been ex-

tremely reduced. The reasons for them are the obstacles in the market, for example: aggressive competition, pressure on wages through railway unions GDL and EVG, many construction sites due to the DB infrastructure or oligopoly among vehicle manufacturers. One of the biggest problems for the successful functioning of railway companies providing passenger transport in Germany can be considered the lack of qualified personnel. The reasons for this are, for example, the age structure in the rail transport market, so the companies must continuously acquire new staff due to staff departures. Furthermore, fluctuation also plays a not significant role. This is an enormous obstacle in new tenders, as the companies sometimes do not have sufficient railway staff when they start operations (Bundesnetzagentur, 2020). For example, the company Keolis had to return the transport contract it had won before the start of operations under pressure from the public transport authority VRR, as the public transport authority had the impression that the railway company did not have sufficient staff available for the start of operations (VRR, 2019; Keolis, 2020). The shortage of qualified staff creates upward pressure on wages and costs of the companies.

The aim of the article is to analyze the performance of the main railway companies providing in Germany local passenger rail transport (SPNV) for the period 2014 – 2022, to answer the questions of whether the SPNV companies achieved their market share gains in this period due to strong competition via price and if personnel costs had a significant impact on their results. The article is organized as follows. Next chapter shortly describes the essence of German railway reform. Third chapter investigates the performance of the se-

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**Fig. (1).** Number of passengers in local rail passenger transport in Germany (in bn).

Source: Statista 2022.

lected companies with approximately 75 % market share including answering both above-mentioned questions. Conclusion summarizes main points.

## 2. THE ESSENCE OF GERMAN RAILWAY REFORM

To develop a future form of organization for rail transport in Germany, the federal transport ministry set up in the period from 1989 to 1992 the government commission for railways, which developed a concept for reforming the railway system in Germany, which finally resulted in the Railway Reorganization Act in 1993 and entered into force on January 1, 1994. The rail reform essentially implemented three basic principles (Engartner 2010; Seidenglanz et al., 2015):

A first central component is the company merger between companies from former West and East Germany - Bundesbahn and Reichsbahn and the transformation of these companies into a new one organized under private law federal railway company, the Deutsche Bahn AG (DB AG).

A second central component of the rail reform was the creation of a traffic market, in which other transport companies besides DB AG can offer their transport services. The railway companies can on a non-discriminatory use the train paths - within the existing route capacities - for a fee. The non-discriminatory access is monitored by the federal network agency (Wald, 2004).

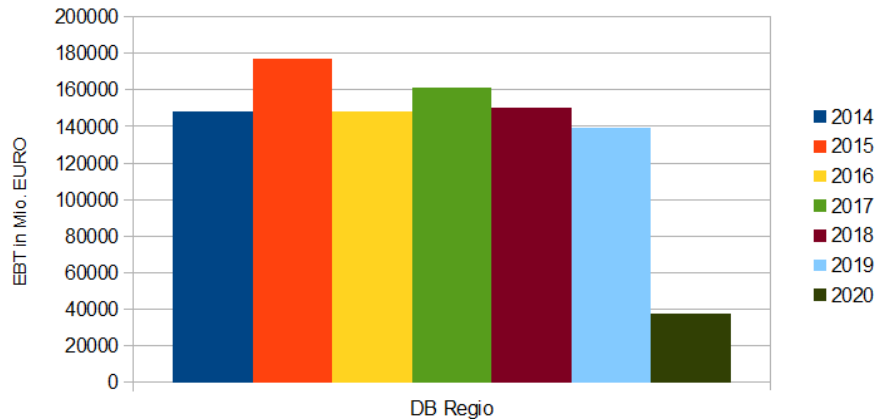
A third central component of the rail reform was the so-called Regionalization. The responsibility for the rail-bound changed from the federal government to the federal states on January 1, 1996 (Deutsche Bahn AG, 2014). Transfer of responsibility for local passenger transport to the federal states

including the financial responsibility. The organization of local transport was organized through the federal states and regulated by local traffic laws. The change of responsibility also includes financial compensation that specifies how the federal states receive money annually from the federal government so-called regionalization's funds. Transport contracts are typically completed over a period of 8 to 15 years. The award of transport services can be done through a tender or in form of a free allocation (direct price inquiry). According to federal court, hands-free procedures are only permitted in special cases and only for short periods (Peter 2008).

The reform can be seen as successful. The number of passengers increased (Statista 2022) from 1.36 bn (1993) to 2.72 bn (2018) and 2.77 bn (2019). Fig. (1) shows the development of passenger numbers for the period from 2005 to 2021. The decline in 2020 and in 2021 is based on the Corona effect and affects all local rail passenger transport companies. The problems caused by Covid-19 have not been taken into account in our analysis, as it can be assumed that the pandemic is hopefully only a temporary phenomenon.

## 3. ANALYSIS OF THE PERFORMANCE OF INDIVIDUALS RAILWAY COMPANIES

The reform increased competition in local rail passenger transport. The market shares of the former monopolist DB Regio fell and it was around 60 % in 2020. (Bundesnetzagentur, 2021). Large foreign state railways were able to enter the German market. DB's major competitors include metronom, BeNEX (ODEG, cantus), National Express, Go-Ahead, Abellio, Keolis. On the financial side, this develop-



**Fig. (2).** EBT of the railway company DB Regio 2014 to 2020.

Source: own work based on company data.

ment has led to a reduction in the monopolist's result of DB Regio. Foreign railway companies in particular have only been able to achieve their market share gains with low returns. Some railway companies, especially companies with foreign shareholders, even achieved high losses. According to the Federal Network Agency's market survey for 2020, more than 75 % of the railway undertakings surveyed achieved a negative result (Bundesnetzagentur, 2021). It makes therefore sense to analyze the results of mains companies providing railway transport in Germany. The companies under review represent approximately 75 % share of the market.

### 3.1. DB Regio Aktiengesellschaft, Frankfurt a.M.

DB Regio Aktiengesellschaft (DB Regio) was the monopolist in local rail passenger transport (SPNV) until the railway reform. One consequence of the railway reform was the intensification of competition, so many transport contracts were lost. Nevertheless, DB Regio still has a dominant position in the market, especially in S-Bahn transport. In this segment, too, some competitors have been able to break this market dominance in recent years. At the end of the financial year 2021, the company still had a market share of around 59 % and is represented in all 16 federal states with the services it offers. In the last six years, the profit on ordinary activities in railway activities of the Subsidiaries of the Regional Rail Division including RAB has stabilized at an average of € 150 million. In 2020, the result before tax declined by approximately € 40 million due to lost transport contracts and the Corona pandemic. The company employed 6,779 people in 2021 in the areas of rail operations (Bundesanzeiger, 2022a).

### 3.2. Abellio GmbH, Berlin

Abellio GmbH - Abellio was founded in Germany in 2004 - acts as the parent company of the group with its subsidiaries in North Rhine-Westphalia (NRW), Lower Saxony, Baden-Württemberg, Saxony-Anhalt and Thuringia. The first operations in NRW started in 2005. Until the end of 2021, the group belongs via a Dutch intermediate holding company to

the state-owned railway company Nederlandse Spoorwegen, Utrecht, The Netherlands. The portfolio was streamlined over time, so Abellio is now only active in the German market with local rail passenger transport companies and a service company. The group has achieved tremendous growth over the last six years, and by the end of the 2020 financial year, a market share of 7.3 % (2014: 1.0 %) had been achieved.

At the end of 2019, the Group had 2,410 employees and generated a result from ordinary activities of approximately € - 40 million (2014: € - 5 million). The Group's financial problems already preoccupied the NRW state parliament at the end of 2020. In 2020, the Group companies continue to service the transport contracts (VDI Nachrichten, 2022; Fockenbrock, 2020). In June 2021, Abellio filed for insolvency under the protective shield procedure with the aim of restructuring the company and obtaining back payments from the public transport authorities for higher, unplanned expenses (Bundesanzeiger, 2022b).

After the failed negotiations with the public transport authority in North Rhine-Westphalia, Abellio Rail NRW has gone into regular insolvency. The transports in North Rhine-Westphalia were divided among three competing companies with effect from 1. February 2022 following tenders for the emergency awards. In Baden-Württemberg, the state-owned railway company took over the operation. In Saxony-Anhalt, transport will continue, but Abellio intends to return some networks to the public authorities. Negotiations on this have not yet been concluded.

### 3.3. Eurobahn GmbH & Co. KG (Former Keolis Deutschland GmbH & Co. KG), Düsseldorf

The origins of Keolis Germany go back to 2007 and the nucleus of the operational business was laid with the eurobahn brand. The French state railway SNCF acts as the group parent company and Keolis S.A (KSA) was the direct shareholder. During the period under review, the company achieved decent growth, increasing its market share from 2.0 % in 2014 to 2.4 % in 2019. All transport services are pro-

vided in NRW. The company has not managed to achieve positive results to date. The result from ordinary activities has fluctuated from - € 6.5 million in 2014 to - € 34 million in 2019, with a large increase in losses in 2018 - the year with the full operating performance - due to the start of the Teutoburger Wald-Netz transport contract at the timetable change at the end of the 2017 financial year. The company employs an average of 845 people at the end of 2019 (Bundesanzeiger, 2022c).

At the beginning of 2022, there was a change in shareholders and Keolis S.A. sold its shares to the Noerr Group. Keolis S.A. provided eurobahn GmbH & Co KG (Keolis Deutschland GmbH & Co KG until 31.12.2021) with additional capital so that the company can fulfill the existing contracts in full. In addition, further economic improvements will be achieved through the negotiation of the transport contract 2.0. For the more than 900 employees, the existing employment contracts continue to apply, so that the eurobahn could start the year 2022 smoothly in operational and administrative terms (eurobahn, 2022).

In this context, KSA has made a contribution of EUR 135 million to the company's equity (cash contribution of EUR 80 million; the balance of EUR 55 million can be drawn by the company from KSA within the next 5 years, the amount is secured by a bank guarantee).

Furthermore, mutually agreed adjustments are made to all transport contracts – so-called 2.0 NRW - with the aim of significantly reducing the company's future financial losses. Personnel costs will be better indexed, costs for rail replacement services in case of infrastructure-related road works will be better remunerated and deductions for cancellations and delays will be regulated differently. The transport contract adjustments will take place in the 2022 financial year, to which the company and the public transport authorities have already committed themselves in writing in 2021. These measures will result in the equity position becoming positive at the end of the next financial year and should remain so in the future. These measures are intended to ensure that the company's substance is preserved (Bundesanzeiger, 2022c).

### 3.4. National Express GmbH, Köln

In 2015, NX RAIL won lots 2 and 3 of the Rhein Ruhr Express (RRX), whose operation started in several steps from June 2019 until December 2020 and has a duration until 2033. In December 2015, NX RAIL started operations and runs the Rhein-Münsterland-Express (RME) lines RB 48 (Bonn to Wuppertal) and RE 7 (Rheine to Krefeld), since June 2019 the RRX lines RE5 and RE 6 and since December 2020 the RE4. In total, NX RAIL will operate a transport performance of more than 13.6 million train kilometers per year from 2021. The operating performance in 2020 was 11.5 million train kilometers (the previous year: 8 million) and the market share increased from 1.2 % in 2019 to 2.0 % in 2020. In February 2022, the company took over the RRX lines RE1 and RE11 from an emergency award - insolvency of the railway company Abellio - for a period of 2 years.

The operating result in 2020 is reported at € - 16.9 million (previous year: € - 17.6 million). National Express started its

first transport contract in December 2015. The cumulative operating losses for the years 2016 to 2020 amount to € - 67 million, some of which are start-up losses from the new contracts. The rescue package for public transport in North Rhine-Westphalia for 2020 has compensated for the reduced fare income. The continuation of NXRAIL's business operations continues to be ensured, in particular as a result of the inflow of liquid funds from the increase in the capital reserve in the amount of € 75 million in May 2021 and the existing intra-group credit lines in the amount of € 45 million. National Express Rail GmbH belongs to the National Express Group PLC, Birmingham/UK, which prepares consolidated financial statements, via National Express Holding GmbH, Düsseldorf, which holds all shares in the company's share capital. In 2020, an average of 393 (in the previous year 277) people were employed (Bundesanzeiger, 2022d).

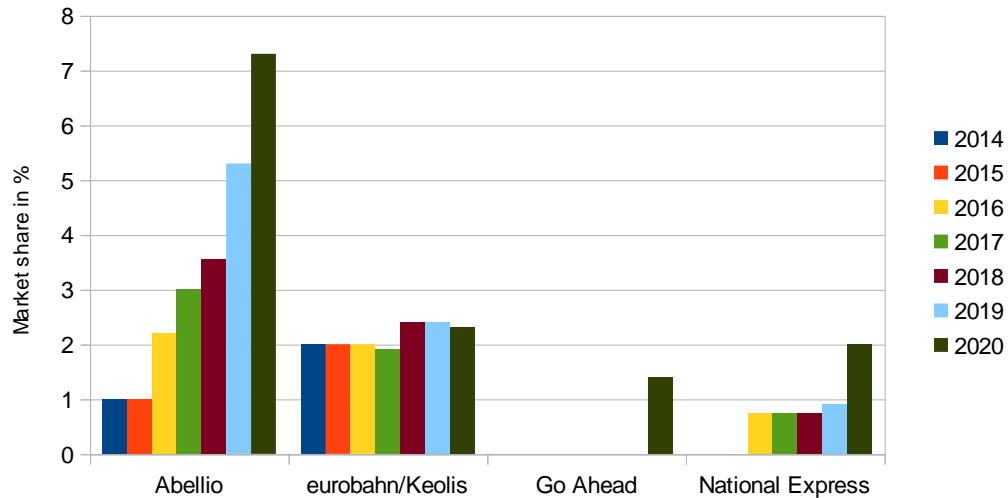
### 3.5. Go-Ahead Verkehrsgesellschaft Deutschland GmbH, Berlin

The company provides operating services in the two federal states via its subsidiaries, Go-Ahead Baden-Württemberg and Go-Ahead Bayern. Since mid-2019, Go-Ahead has been operating services from the tenders won in 2015 in the Rems-Fils and Franken-Enz sub-networks with a contract term until 2032. In August 2018, the company was awarded the contract to operate the Allgäu electronic network with a contract term from December 2021 until 2033. From 2022, the operating performance will increase to 22 million train kilometers, 50 % of which will be in Baden-Württemberg and 50 % in Bavaria. The market share in 2020 is 1.4 % and the operating performance is 9.8 million train kilometers.

The accumulated losses for the years 2017 to 2019, the 2020 figures have not yet been published, amount to € - 39 million (deficit not covered by equity), with Go-Ahead Baden-Württemberg reporting a loss of € 14.4 million in 2019. The ultimate parent and controlling company is The Go-Ahead Group plc, Newcastle upon Tyne/UK, in which Go-Ahead Germany is consolidated. The ultimate parent company has issued a letter of comfort for Go-Ahead Germany in addition to pledging additional liquidity to avoid insolvency (Bundesanzeiger, 2022e).

### 3.6. Metronom Eisenbahngesellschaft mbH, Uelzen

The company was founded in 2002, changed its name in 2003, and took up the Hansenet transport contract at the timetable change in 2003. After a change of shareholders in 2007, the current shareholders are NiedersachsenBahn GmbH and BeNEX GmbH. At the end of 2017, metronom was able to win back the Hansenet transport contract in a tender and since the timetable change at the end of 2018 Hansenet transport services have been provided based on the framework conditions of the new contract. The company's result at the end of the 2020 financial year is reported at € 4.5 million after €3.9 million in 2019 (2014 to 2018 average result of around € 17 million). The market share is reported at 1.6 % in the years 2020 and 2019 (2014: 1.5 %). The company has an average of 530 employees on 31 December 2020 (2014: 416). (Bundesanzeiger, 2022f).



**Fig. (3).** Development of the market shares of the analyzed railway companies with foreign shareholders from 2014 to 2020.

Source: Own work based on Bundesnetzagentur (2021).

### 3.7. Hessische Landesbahn GmbH, Frankfurt a.M.

The Hessische Landesbahn acts as a holding company for some subsidiaries and also holds shares in some local rail passenger transport companies. Its shareholders are the State of Hesse and some administrative districts. Its activities are carried out both in Hesse and through its subsidiaries in Lower Saxony and in Thuringia. The Group was able to essentially maintain its market share from 2.1 % in 2019 to 2.4 % in 2020. At the end of the 2020 financial year, earnings are reported at € 3.0 million, (€ 7.2 million in 2019, respectively € 2.2 million in 2014) and it employs on basis full-time positions 1,337 people (2014: 946), including the affiliated companies. The positive development of the result is mainly based on the results of the associated companies (Bundesanzeiger, 2022g).

### 3.8. Erfurter Bahn GmbH, Erfurt

In 2020, Erfurter Bahn, the sole shareholder being the city of Erfurt, provided local rail passenger services on routes in the federal states of Thuringia, Bavaria, Saxony and Saxony-Anhalt. The corresponding transport contracts with the federal states form the basis for the provision of services. The company achieved 6.7 million timetable kilometers in 2020 as well as in 2019. The market share of the entire regional passenger transport market is 1.2 % in 2020.

The company achieved a positive result from ordinary activities of € 2.2 million in 2020. Compared to the previous year, this is a decrease of € 3.6 million - due in particular to the Corona influences. In the comparative period from 2014 to 2020, Erfurter Bahn was able to continuously generate solid earnings overall. The company has a 50 % share in Süd-Thüringen-Bahn GmbH, Erfurt, which enables its shareholders, the other 50 % being held by Hessische Landesbahn, to generate extraordinary investment income. The company

employs 369 people as in the previous year (Bundesanzeiger, 2022h).

### 3.9. Ostdeutsche Eisenbahngesellschaft mbH (ODEG), Parchim

BeNEX GmbH, Hamburg and Prignitzer Eisenbahn GmbH each have a 50 % share in the company. ODEG operates local passenger transport services in the federal states of Berlin, Brandenburg, Mecklenburg-Western Pomerania and Saxony. In 2020, train kilometers amounted to 13.1 million (the previous year: 11.3 million) and the market share developed from 1.6 % in 2019 to 1.9 % in 2020.

With the increase in operating performance, the operating result also increased, which is reported at € 7.5 million for 2020 (previous year: € 6.6 million). The company employed an average of 460 people in 2020 (previous year: 406). The investment result of the subsidiary, ODIG, which provides services for its own light maintenance fleet, was positive in the last two years (Bundesanzeiger, 2022i).

### 3.10. Summarization of the Results for the Companies Under Review

The evaluation of the market shares shows that the former monopolist DB Regio has continuously lost market shares. It has declined from 73 % in 2014 to 59.1 % in 2020. In contrast, the company Abellio and other railway companies were able to expand their market position. The development of market shares of the companies Abellio, Keolis, National Express and Go Ahead which had foreign shareholders at the time of the study is described in Figure 3. Abellio has been able to continuously expand its market share by winning transport tenders in recent years. Keolis has been able to stabilize its market share over the last three years. Go Ahead started its operations with the timetable change 2019/2020. National Express has been able to expand its market share by

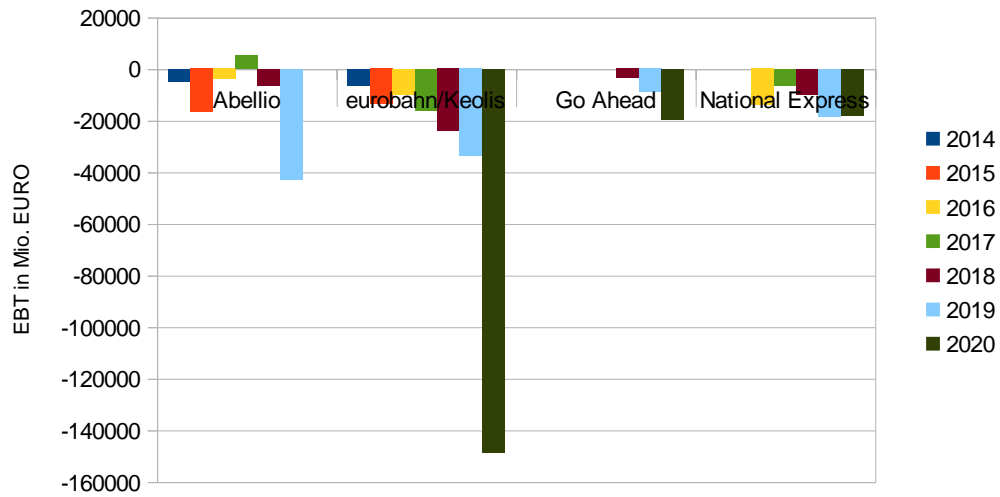


Fig. (4). EBT of the railway companies with foreign shareholders from 2014 to 2020.

Source: Own work based on companies' data.

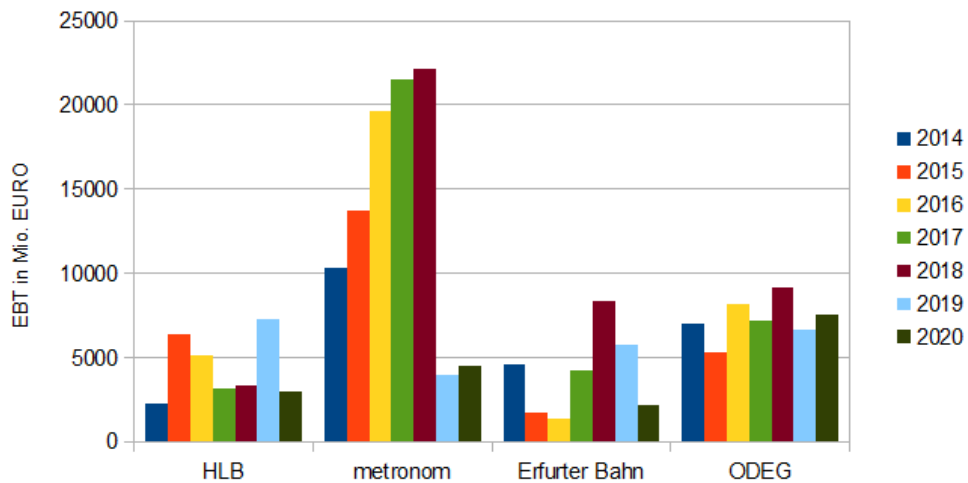


Fig. (5). EBT of the railway company HLB, metronom, Erfurter Bahn, ODEG from 2014 to 2020.

Source: Own work based on companies' data.

winning a partial operation as part of the Rhine-Ruhr Express (RRX).

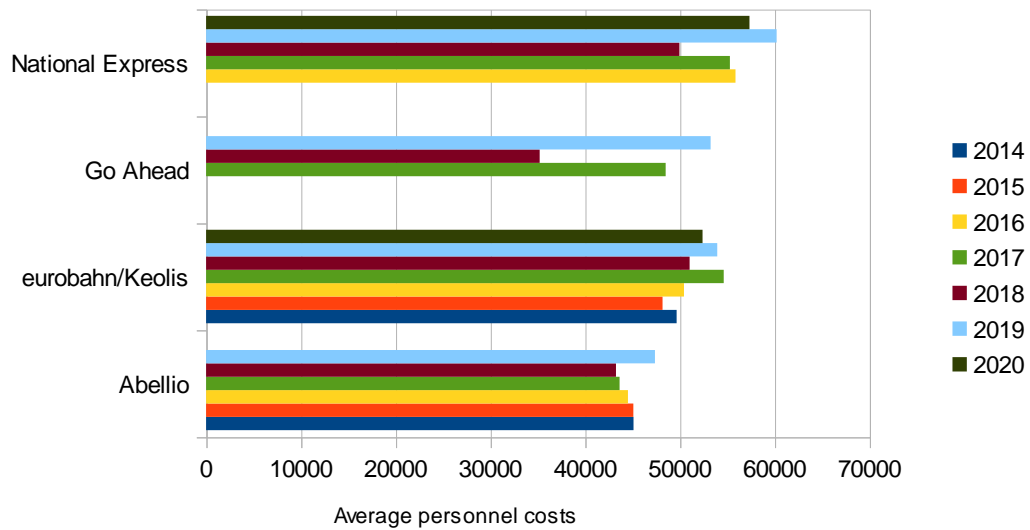
What concerns financial results (earnings before taxes, EBT), the market leader DB Regio AG (see Fig. 2) has achieved a much lower pre-tax profit in recent years - in parallel with the loss of market share. The year 2020 (pandemic) is characterized by the decline in passenger numbers, which has a negative impact on the result, especially in net transport contracts. The company with the second-highest share in 2020 - Abellio, has suffered extraordinarily high losses during the investigated period. It seems that the last contracts could only be won through aggressive pricing in the transport tender. The company has incurred losses throughout the period, the highest in 2019 at € 42.9 million. Abellio has not published any figures for the 2020 financial year due to its insolvency (Bundesanzeiger, 2022b).

The same conclusion, i.e., the company achieved its market share mainly thanks to aggressive pricing can be done for the companies eurobahn (former Kelios), Go Ahead and Nation-

al express. eurobahn has also not been able to achieve positive results so far and has further extended its losses with the start of the new transport contract Teutoburger-Wald-Netz in 2018 (the former operator was WestfalenBahn, a subsidiary of Abellio GmbH; WestfalenBahn has always generated positive income with this contract). As part of the change in shareholders that took place on 1.1.2022, the KSA provided the eurobahn with cash funds of € 85 million and a guarantee facility of a further € 55 million. This is intended to ensure the economic existence of the company, in particular the fulfillment of the transport contract obligations towards the public transport authorities (Bundesanzeiger, 2022c). Also Go Ahead operating since June 2019 and National Express operating since 2016 achieved only negative EBT for the whole period of their service.

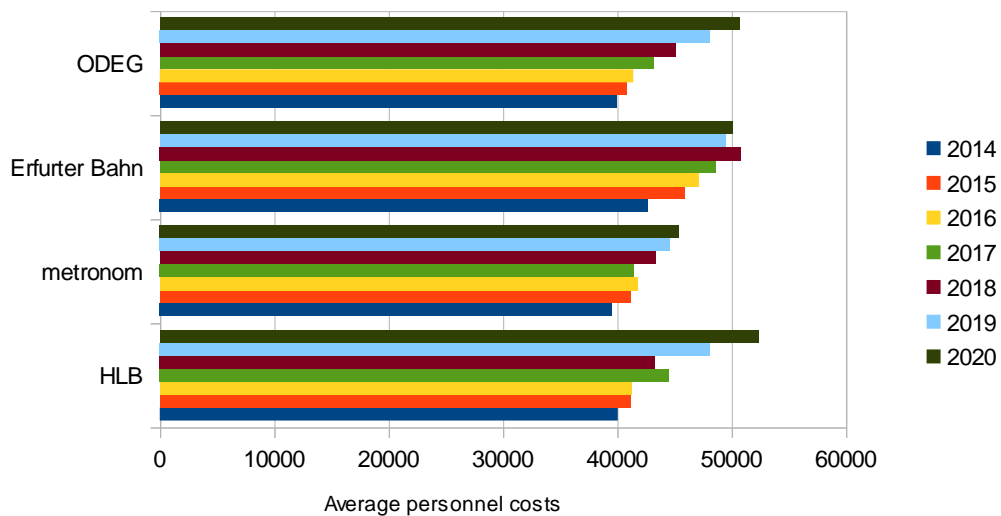
The regionally positioned companies, especially with public-law shareholders such as the Hessische Landesbahn and the Erfurter Bahn - as well as the ODEG and the metronom Eisenbahngesellschaft continuously generate solid profits (see





**Fig. (6).** Development average personnel costs for railway companies with foreign shareholders from 2014 to 2020.

Source: own work based on companies 'data.



**Fig. (7).** Development average personnel costs railway companies HLB, metronom, Erfurter Bahn and ODEG from 2014 to 2020.

Source: own work based on companies 'data.

Fig. 5), albeit in the case of the metronom with declining tendency due to the win in the tenders with intense price competition (Bundesanzeiger, 2022f).

**3.11. The Impact of Personal Cost on Companies' Results**

The average personnel costs have generally increased in the years 2014 to 2020 for the railway companies examined (DB Regio was not included because the personnel expenses were only shown for several segments in its annual reports). This is mainly due to the shortage of qualified staff and the power of trade unions (GDL, 2021; EVG, 2021). For example, train drivers can choose between the model of a salary increase or conversion into additional days of leave. The consequence is the decline in annual productivity (hours of the employee).

The development of the average personal costs is described in Fig. (6 and 7). Despite the cost programs of the companies under the investigation, extraordinary increases in personnel

costs could not be avoided due to collective agreement increases as well as reductions in working hours for the operating staff. As a result, the companies must recruit more staff, although the operating performance remains constant in most companies that face a tight labor market with scarce resources among train drivers and customer service staff.

**4. CONCLUSION**

The analysis shows that aggressive competition in the tendering of new transport contracts leads to losses or only low returns for some companies. Due to the bargaining power of the trade unions GDL and EVG, tariff increases and reductions in working hours have continuously accrued during the period under the review, which the railway companies have not been able to compensate for. As there is a shortage of sufficient driving staff (train drivers and passenger attendants) as well as in the downstream areas such as the traffic

planning and control center, the railway companies have only limited possibilities to enforce their wage expectations in collective bargaining. Due to staff shortages, operational services are sometimes canceled, so contractual penalties must be paid to the contract partners, i.e., the public transport authority. DB is renewing its railway infrastructure due to neglected maintenance from previous periods. In some cases, this leads to additional expenses and penalties for which the railway companies are not compensated.

The market leader, DB Regio, has lost market share and results have also continued to decline. Abellio, which now has the second-highest market share in regional passenger rail transport, was only able to achieve this growth through insufficiently calculated new transport contracts. The earnings situation has led to a situation threatening the existence of the company, the financial security of which is only guaranteed by the Dutch shareholder. In 2021, the German Abellio made use of the German insolvency law protective shield procedure. As it was not possible to reach an agreement with the public transport authorities on improving the results, the main part of the group went into regular insolvency. Another company Keolis has so far not managed to generate positive results, but the losses achieved have increased further and the French shareholders have sold their business shares to the Noerr Group in the end 2021.

Due to the loss-making situation of their German subsidiaries, the shareholders of National Express and Go-Ahead had to provide liquidity support to avoid insolvency. Furthermore, for the going concern forecast, the letters of comfort were required for the continuation forecast. metronom has had to accept considerable declines in earnings due to the retendering of the so-called Hanse network, where the company was able to prevail against the competition but continues to achieve positive results.

Public transport authorities should pay attention to the operation results of railway companies. If they suffer a loss, there is a threat of possible insolvency, or they will not be able to continue the contract that they made with the public transport authorities. Competition between companies because of the railway reform led to an increase in passenger numbers in Germany. However, if companies strive to gain market share by price undercutting, when the company's prices do not correspond to their real costs, including the considered price increase, the contract, which was initially profitable for the public transport authority, can turn into great financial difficulties in the railway business. The eventual railway company's inability to meet its obligations harms passengers and other companies and can cause serious damage (e.g., in the form of higher emissions, if passengers start using rail replacement services more instead of the train, or in a decrease in the production of other companies whose employees do not arrive at work on time due to a problem of a railway company). Public transport authorities' decisions in transport tenders should not be, therefore, focused only on price, but should also consider the quality of railway operations.

#### LIST OF ABBREVIATION

DB	=	Deutsche Bahn
EU	=	European Union

EVG	=	Eisenbahn und Verkehrsgewerkschaft = Railway and Transport Union
GDL	=	Gewerkschaft der Lokomotivführer = Union of Locomotive Drivers
NRW	=	North Rhine-Westphalia
SPNV	=	Schienenpersonennahverkehr = local passenger rail transport

#### CONFLICT OF INTEREST

Authors declare no conflict of interest.

#### ACKNOWLEDGEMENT

The result was created in solving the student project "Financial sector in the third decade of 21st century" using objective oriented support for specific university research of the University of Finance and Administration.

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Received: Nov 20, 2022

Revised: Nov 25, 2022

Accepted: Dec 22, 2022

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