Fare Discounts and Free Fares in Long-distance Public Transport in Central Europe

Highlights

- Analysis of two national discount fare policies in Central Europe
- 100% fare discounts for Slovak trains, no discount for Slovak buses
- 75% fare discounts for Czech trains and buses
- Higher total ridership, increase in mobility of young and elderly
- But significant fiscal costs

Abstract

Fare discounts and free fares are frequently used tools in transport policy. They are utilized not only to stimulate public transport ridership, but also to promote transport equity and justice. The application of these policies has emerged recently in two countries in Central Europe. The authorities in Slovakia and the Czech Republic have introduced generous fare discount policies for long-distance transport. Slovakia has introduced 100% fare discounts for children, students, and pensioners for railways from November 2014. The Czech Republic has introduced 75% discounts for children, students, and pensioners for both trains and buses from September 2018. These schemes are unique in their wide coverage and their application to long-distance transport. These policies were motivated by the mix of social, transport, and political considerations, but the social goals dominated. The aim of this article is to review and analyse market developments after these policies were introduced. The major results of the analysis are the following: The policies significantly increased ridership and the modal share of railways went up significantly. The mobility of the targeted groups was significantly affected and the share of young and elderly riders increased. However, the policies were costly and also had some undesirable side effects that could have been prevented by better policy design.

Keywords

Fare discounts, free fares, public transport, railways, financial impacts

1 Introduction

Policymakers are trying to limit car usage growth and promote the use of public transport to battle congestion and decrease environmental damage. They are trying to accomplish this through various measures. Important factors in the promotion of public transport usage are fare discounts and free-fare schemes. Recently, both Slovakia and the Czech Republic have introduced ambitious fare policies in long-distance public transport. These policies were adopted in 2014 and 2018, and so it is now possible to analyse what effect these measures have had on the market and determine whether they were able to meet their stated goals.

These policies were not designed solely to achieve higher public transport patronage. Their main aim was to improve mobility for younger and elderly people and achieve higher equity and justice in access to transport services. These policies are by no means cheap, and there has been an ongoing debate about their effectiveness. We aimed to analyse the impact of these policies with respect to their stated goals. Our analysis has concentrated on four topics: transport volumes, modal shares, changes in mobility among different groups, and total cost of the policies.

Our paper contributes to the existing literature by reviewing and comparing the impacts of two wide-scale policies. Due to their recent implementation, they are not systematically captured in the academic literature, and they are unique in their nation-wide coverage. The paper is structured in the following way. Section 2 provides a literature review and Section 3 an overview of both policies. Section 4 contains the impact of these policies on transport market, ridership structure, and fiscal costs. Section 5 provides discussion and Section 6 concludes.

2 Literature review

The aim of fare reduction policies is to make transport cheaper, improve its affordability, and stimulate ridership. However, the crucial issue is the price elasticity of demand. Based on the existing evidence, short-run elasticity is relatively low, in the range of 0.2–0.4 (Baum 1973, Scheiner – Starling 1974, Litman, 2004, Paulley et al. 2006, Oum et al. 1990, Ivaldi – Seabright 2003). Long-run elasticity is higher, usually in the range of 0.6–0.9 (Litman 2004, Paulley et al. 2006, Ivaldi – Seabright 2003). Recent estimates of price elasticity from the rail market in the Czech Republic were identified in the range of 0.6–1.7 (Fitzová et al. 2021). Empirical studies have also documented that price elasticity is lower for non-essential trips and off-peak travel. However, existing research has also suggested that price is not the only factor and is not the most important in determining transport ridership. Service quality, time, route, and status attributes are among the most significant factors. Particularly problematic has been switching car users, as it has been argued that negative fares would have to be introduced in order to force

car users to change over (Baum 1973). The general conclusion is that to force significant ridership changes through fare declines is difficult and costly and especially car users are hard to persuade. However, these studies were done on aggregate populations, and the price elasticity of younger and elderly people may be higher than is suggested by studies that were carried out on general populations.

Some evidence about the behaviour of transport demand may be derived from free-fare transport experiments. There are some cases where fares in public transport were totally abolished. The classic example is Studenmund – Connor (1982), who described the result of a free-fare experiment in the US, where in Trenton, New Jersey, off-peak bus fares were eliminated. The authors claimed that net ridership went up by 15% (off-peak ridership by 45%).

More recent examples of free fare policies include the following case studies. De Witte et al. (2006) analysed the impact of free fares in Brussels on the included and non-included populations. They came to the conclusion that residential determinants were more important than fares in transport-forming behaviour. Van Goeverden et al. (2006) gave a short survey of motives for the introduction of free-fare public transport. They went on with a presentation of four case studies from Belgium and the Netherlands. Widely analysed were the results of a free-fare experiment in Tallinn. Cats et al. (2017) stated that, after a year, ridership went up by 14%. The mobility of low-income residents also improved. Tomanek (2017) and Štraub (2019) reviewed the introduction of free-fare schemes in municipalities in Poland. Štraub – Jaroš (2019) analysed the four key areas that municipalities try to influence through free fares.

There have been some attempts to conceptualize these findings from case studies dedicated to free-fare systems. Perone (2002) analysed the advantages and disadvantages of free fares in three areas: costs and impacts on transit service and quality of service. She distinguished temporary and permanent free fares. She concluded that a free-fare policy could be recommended for smaller systems; it is questionable whether it could be recommended for larger systems. Storchmann (2003) pointed out that the reasons to introduce free-fare schemes (in Germany) were mainly environmentalist (externalities) to promote the desired modal shift. Kębłowski (2019) analysed the broader consequences of free-fare public transport. He distinguished partial and complete free-fare systems. He comprehensively analysed economic aspects, sustainability aspects, and politically transformative aspects. He concluded that it cannot be analysed as a sole transport instrument.

The important question is why free-fare systems are introduced at all. Baum (1973) argued that the introduction of free fares usually has two goals. First to relieve traffic congestion and second to overcome income inequality. However, the diversion factor is usually only 15–20%, and it therefore seems that the more effective method to reach the stated goals is to improve one of

the quality attributes of public transport. Scheiner – Starling (1974) analysed the political economy of free-fare transport. They argued that four issues are critical: demand elasticity and its responsiveness to the introduction of free fares, the costs of such policies and their financing, identification and evaluation of the benefits, and the political feasibility of the policy. Fearnley (2013) analysed the impact of free-fare policies on modal shares and other policy goals. He reviewed economic, political, and environmental reasons for the introduction of free- and discounted-fare schemes. He argued that although these policies seem to be attractive, their rate of goal achievement is poor and comes at high costs. The effects on car ridership are marginal and typically offset by a few years of growth. Successful free-fare traffic schemes are those that concentrate only on public transport ridership growth. Other goals are best achieved with targeted measures.

The last important parameter is how free fares and fare discounts have contributed to the concepts of transport equity and transport justice. Church et al. (2000) distinguished seven social exclusion factors related to transport: physical, geographical, from services, economic, time-based, based on fear, and based on space management. There is significant research on transport research and transport poverty (see Banister 2018, Mattioli 2016), but it tends to concentrate on short-distance travel and long-distance travel is significantly less covered. Existing research has concentrated on mobility differences for different classes (Cass et al. 2005) and their environmental impacts (Ivanova – Wood 2020). The temporality issue is also important in this respect (Moyano – Dobruszkes 2017).

3 Discount policies in public transport in Central Europe

Both the Slovak and Czech discount schemes are rare examples of social and transport policy applied to the entire country and targeting nearly half of the population. The Slovak policy was launched in autumn 2014, while the Czech policy started in autumn 2018. The policy in Slovakia covered only rail while the Czech policy covered both the rail and bus markets. The launching of fare-discount policies in both countries was strongly motivated by political aims. The discounts were introduced shortly before municipal elections, which contributed to higher support from voters. In the corresponding Slovakian municipal elections, the governing party "Smer" achieved a vote increase from 20.60% (in 2010) to 29.11% (in 2014; Statistical Office of the Slovak Republic 2021). The Czech governing party "Ano" improved its vote share from 14.59% (2014) to 14.92% (2018) in municipal elections (Czech Statistical Office 2021).

3.1 Free fares in trains in Slovakia

Slovakia became, on 17 November 2014 (symbolically International Students' Day and Struggle for Freedom and Democracy Day), a pioneer in providing free transport for selected

population groups on a national scale, but only for rail and only for public-service obligations (PSOs; mostly the incumbent operator ZSSK[1] with the single exception of RegioJet on the Bratislava–Komárno line). The launch of free-fare rail transport services was presented as a fulfilling political strategy for Prime Minister Robert Fico's Implementation of Financial, Economic and Social Measures in Rail Passenger Transport (Government of the Slovak Republic 2014a).

The policy of free fares only for rail passengers was a questionable policy step that caused significant public debate. There was a petition against free-fare train tickets with more than 30,000 signatures. The petition targeted the costs of the policy and discrimination against bus users. The support for rail against the road was evident directly from the words of Prime Minister Fico during a press conference at launch: "We want to push out cars and buses more" (Fico 2014).

The reason for this policy design lies in the Slovak transport institutional framework, where railways are on the national government agenda and are financed from the central government budget. On the other hand, bus transport is organized by regional public authorities and financed by local governments (at the NUTS 2 level), where the leading government party "Smer" was not the only ruling political party, as in the case of the national government. The voice of bus companies was represented by a sharp reaction of the Vice President of the Slovak Bus Association:[2] "This step by the government is absolutely wrong; we expect losses in the millions and a significant decrease in passengers" (Sádovský 2014).

The discount (free-fare) scheme for Slovak trains targeted children, students, and the elderly (Government of the Slovak Republic 2014b); see Table 1.

[1] At the same time, Slovak railway infrastructure was opened to competition and there were open access examples on the main railway line from the capital Bratislava to Žilina and Košice where even the Czech companies RegioJet and LeoExpress were operating at the same time.

[2] The Slovak Bus Association (Zväz autobusovej dopravy) included 15 bus transport companies covering almost all regional public transport systems in Slovakia.

Table 1 Rail Discount Scheme in Slovakia

Group	Original tariff (before 17 November 2014)	Discounted tariff* (after 17 November 2014)
Child/student		
0–5 years	50% discount (ticket needed)	100% discount (no ticket needed)
6–14 years	50% discount (ticket needed)	100% discount (ticket needed)
Student		
15–26 years	50 % discount (student ID needed)	100% discount (student ID needed)
Elderly	**70+ years;** around 80% discount according to train and class (or €0.15 for each 50 km)	**62+ years** 100% discount (senior ID needed)

Data sources: Government of the Slovak Republic (2014a); ZSSK (2014); ZSSK (2021).
**Note: Discounts valid only on ZSSK trains for 2nd class tariffs (not valid on IC trains, nor RegioJet or Leo Express trains).*

3.2 Fare discounts in public transport in the Czech Republic

The idea of discounts was presented in the government programme in spring 2018: "The government will introduce significant discounts on train and bus fares for seniors over 65, children, and students up to the age of 26" (Government of the Czech Republic 2018). In March 2018, the Czech government approved a proposal to introduce 75% fare discounts for children, students, and the elderly. Table 2 reports the system of discounts. The Ministry of Transport reimburses the total amount of the discount to operators. In the first year (2018/2019), compensation was CZK 5.6 billion, and in the second year (2019/2020) over CZK 4.5 billion. The reason for the decline is mainly the restriction of travel during the coronavirus crisis.

Children and students under the age of 26 are eligible for the discount. Before the start of the discount policy, they already had discounts limited to journeys between their residences and the location of their school. Children and students aged 6 to 26 now have a 75% discount, which will also apply to any long-distance route at any time of the year. On trains, the discount is valid only in 2nd class. The state also continues to order a 100% discount on fares for children under the age of 6.

Table 2 Rail Discount Scheme in the Czech Republic

Group	Original tariff (before 1 September 2018)	Discounted tariff* (after 1 September 2018)
Child/student		
0–5 years	0–5 years 100% discount (maximum of 2 free-fare children)	100% discount if accompanied by a person at least 10 years old (maximum of 2 free-fare children); 75% discount otherwise
6–14 years	50% discount (student ID card) 62.5% discount specific route (student ID card)	75% discount (student ID not needed – no confirmation of age)
Student		
15–26 years	40% discount (ID card)	75% discount (ISIC or student ID needed)
Elderly		
65+ years	50% discount (ID needed; up to 2011) 25% discount since 2012 (open-access lines excluded)	75% discount (ID needed)

Data sources: Government of the Czech Republic (2018); ČD (2018, 2021).

** Note: Discounts are valid since 1 September 2018 for all public transport, buses, and trains at 2nd class tariffs (2nd class for ČD; low-cost, standard, and relax for RegioJet; and economy for Leo Express).*

In the same fashion as in Slovakia, the political context of the launch was important. The launch day of the national discount fare was 1 September 2018, which was followed five weeks later by Czech municipal elections on 5 and 6 October 2018. Thus, the government party had strong motivation to strengthen its position, targeting regional capitals and Prague, where many seniors and especially students were located.

4 Impact of the discount policies

In this section, we endeavour to analyse the impact of the discount policies in both countries.

4.1 Methodology and data

We concentrated on those areas where available data exist. We first analysed the macro impacts (section 4.2) of the implemented policies – the development of total ridership using passenger-km and changes in railway modal share on the passenger market. We further analysed the micro impacts (section 4.3) of the policies on the composition of travellers regarding age and fare type used, i.e. children and students, pensioners, and standard-fare adults based on detailed data from both national rail operators. Finally, we inspected the fiscal consequences (section 4.4) in both countries. Especially, we show how revenues from fares, PSO compensation, and compensation for fare discounts have developed over time. We will analyse the relative changes in these

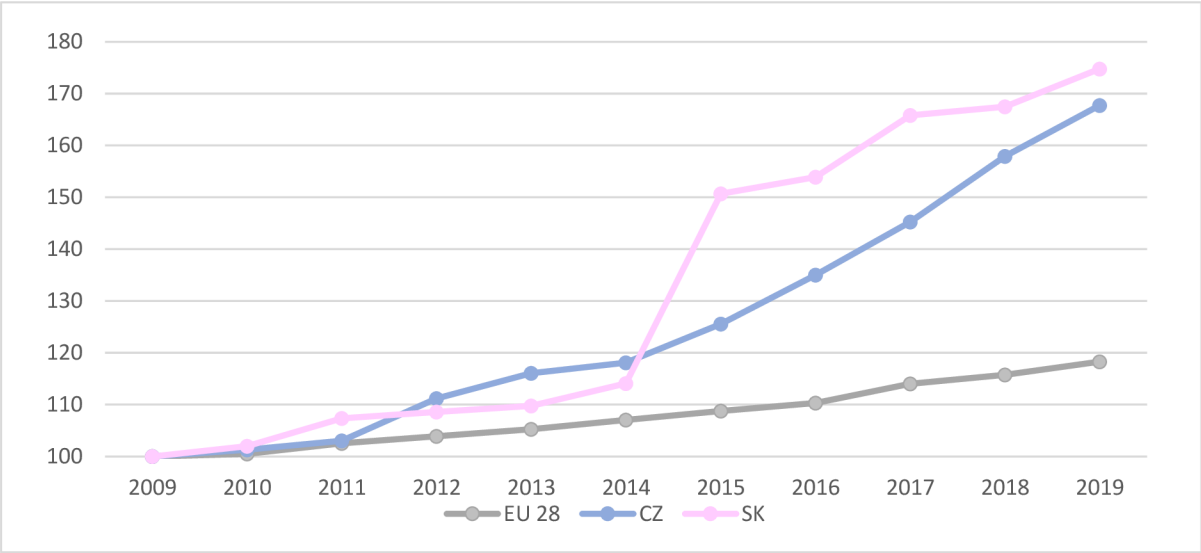
variables, discuss future sustainability, and compare the different approaches of the two countries.

We used data from several sources. To identify the long-term impacts of discounts on the transport market, we used standard data from Eurostat (2021). As our primary data on ridership and finances, we worked with both Czech Railways (České dráhy, a.s.; ČD) and the Railway Company of Slovakia (Železničná spoločnosť Slovensko, a. s.; ZSSK) company yearbooks (ČD 2010–2019; ZSSK 2010–2019) including profit and loss statements with commentary where more detailed information on economic performance can be found. In particular, we needed to identify the yearly amount of PSOs and any other compensation from the Ministry of Transport. Consequently, in Slovakia we used data from Finstat (2021) to analyse the financial impacts on the bus market. To identify the current discount system in each pricing strategy, we checked the current systems of discounts available on their websites (ČD 2021, ZSSK 2021), and official government documents and press releases where the changes were defined when discounts were launched (Government of the Czech Republic 2018; Government of the Slovak Republic 2014a, 2014b; ZSSK 2014; ČD 2018). To analyse the social and political context, we used official government press releases, press conferences, and news in standard media identified further in the text. To identify regional differences in ridership, we used official Czech Transport Yearbooks (Transport Yearbooks 2010–2019).

4.2 Impacts on the transport market

The total growth in ridership in the passenger rail market during the entire period of interest was much higher in both Slovakia and Czechia than in the EU-28 (see Figure 1).

Figure 1 Index of passenger rail transport volume (2010 =100; in passenger-km)



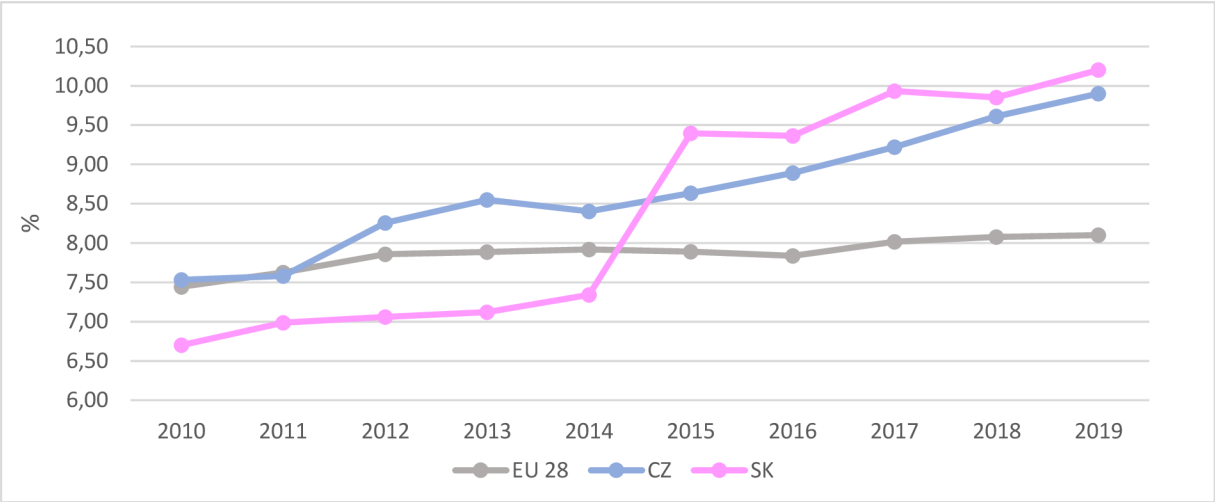
Data source: Eurostat (2021)

The Czech transport market grew during 2009–2018 at an average rate of 5.2%. Slovak market growth was even slightly higher at 5.9%, while EU-28 growth was only 1.6%. In particular, a sharp jump in Slovakia appeared in 2015 when the free-fare policy was introduced. There is a clear growth tendency in the passenger railway market, further significantly boosted by the introduction of discounts, especially in Slovakia.

The modal share of passenger rail transport in the EU-28 was nearly the same (Figure 2) during the entire period of 2010–2018 (around 7.5–8%). However, the development in both Czechia and Slovakia is different. Two main sources for this development are identifiable – first, the entries of new competitors (in 2011 on the Prague–Ostrava line and in 2016 on the Prague–Brno line in Czechia; in 2012 on the Prague–Ostrava–Žilina–Košice line in Slovakia); second, the introduction of fare discounts (in 2014 in Slovakia and 2018 in Czechia). However, the exact shares of these two factors are not easy to distinguish.

The impact of free fares in Slovakia is indisputable. On the other hand, open-access competition in Czechia is much more developed. There is head-on competition on two main routes – with the two operators Czech Railways and RegioJet competing on the Prague–Brno line (Tomeš – Fitzová 2019) and even three operators (Czech Railways, RegioJet, and Leo Express) operating on the Prague–Ostrava line (Tomeš – Jandová 2018). The changes in modal shares in passenger railway transport as well as changes in the number of passengers are similar in the two countries, which implies that a similar goal may be achieved in different ways. However, it is also necessary to consider the financial costs of those approaches as they differed significantly (see section 4.4).

Figure 2 Modal share of passenger rail transport (in passenger-km)



Data source: Eurostat (2021)

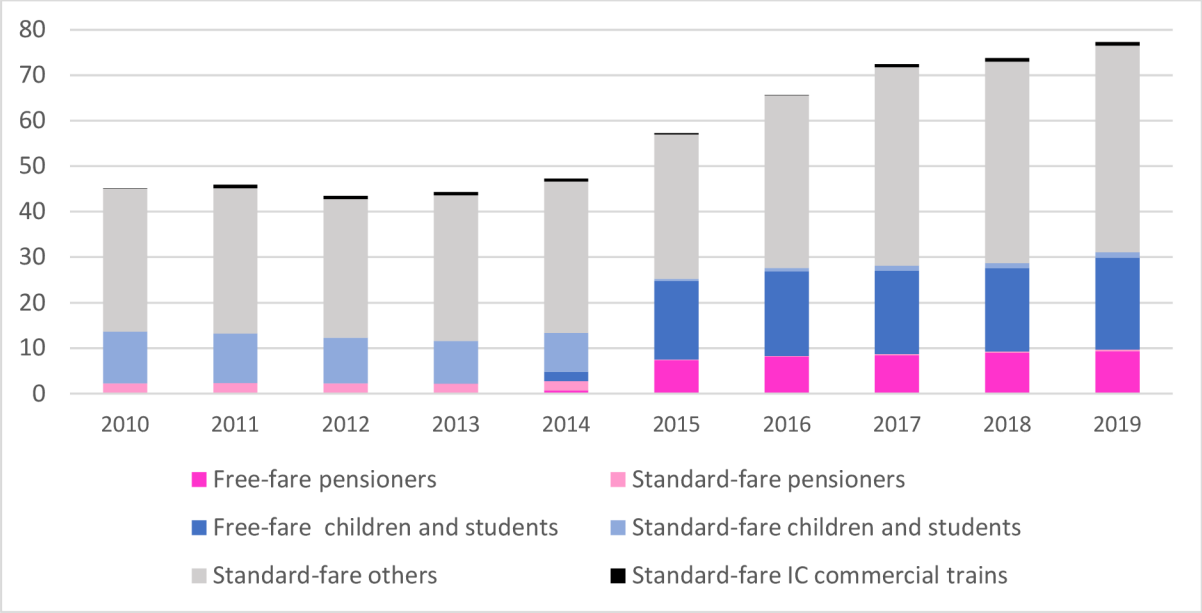
Changes in fare settings had a substantial impact on the average trip distance. This indicator was continuously increasing from 40 km to 56 km in the Czech Republic due to the sharp growth in ridership on the main Prague–Ostrava and Prague–Brno routes. In Slovakia, however, the average distance increased from 50 km in 2010 to 57 km in 2015, when the discounts were introduced, and declined in the following years to 49 km.

4.3 Impacts on ridership structure

In the previous section, we have analysed the impact of the discounts on the development of transport volumes and modal shares. However, it is difficult to isolate the effect of discount policies from the impact of other effects. Therefore, it can be useful to concentrate on the ridership structure in order to analyse the real impact of the discounts on the targeted groups.

Figure 3 depicts ridership structure for the Slovak incumbent ZSSK. The results show that there was an immediate change in the structure of passengers after the introduction of free fares in trains. During 2010–2013, the share of students in the total ridership was declining, but the year of the free-fare launch was the turning point with an increase of more than 12% in the year of discount launch 2014 (from November), followed by an increase of 67% in 2015. The growth continued even in the following years, but at the much lower rate of about 5%. The second targeted group of elderly showed even more significant growth rates when, after a period of stagnation from 2010 to 2013, it increased by 26% in 2014 and then by a staggering 176% in 2015. In the subsequent period, the growth rates stabilized at an average yearly rate of around 6%.

Figure 3 Structure of passenger groups for ZSSK (in millions of passengers)



Data source: ZSSK (2010–2019)

The total ridership increased in the launch year of 2014 by nearly 7%, followed by more than 21% in 2015, 15% in 2016, and 10% in 2017. The senior passenger group in Slovakia grew by about 349% from 2013 to 2019, of which the initial change from 2013 to 2015 covered 248%. Student travel rose from 2013 to 2019 by 126%, while the initial change was almost 88%. The Slovak policy had a significant effect on all passenger groups. The increase in student and senior ridership was so huge that it substantially increased the number of passengers.

Figure 4 shows the ridership structure for the Czech incumbent ČD (without RegioJet, Leo Express, Arriva, GW Train Regio, and Die Landerbahn customers). The average yearly growth rate during 2010–2019 was 1.24%. However, the last year of 2019 (which is the first complete year with the implemented discounts) had a rate of 1.62%, thus above average but with no steep changes as in the Slovak case. The total ridership grew, but Czech Railway's market share decreased because demand was partly diverted to other new operators.

Figure 4 Structure of passenger groups on Czech Railways (in millions of passengers)

Data source: ČD (2010–2019)
Note: These numbers include only passengers from the incumbent Czech Railways and exclude RegioJet, Leo Express, Arriva, GW Train Regio, and Die Landerbahn customers

The number of students and children was decreasing by 1.11% per year before 2018. This trend changed in 2018 when the number grew by 13% and then even by 44% in 2019, and so the total increase from 2017 to 2019 was 63%. Before the discounts were implemented, the number of seniors was decreasing by 9.48% per year, but this number increased by almost 16% in 2018 and by more than 24% in 2019, which means the overall increase from 2017 to 2019 was 44%.

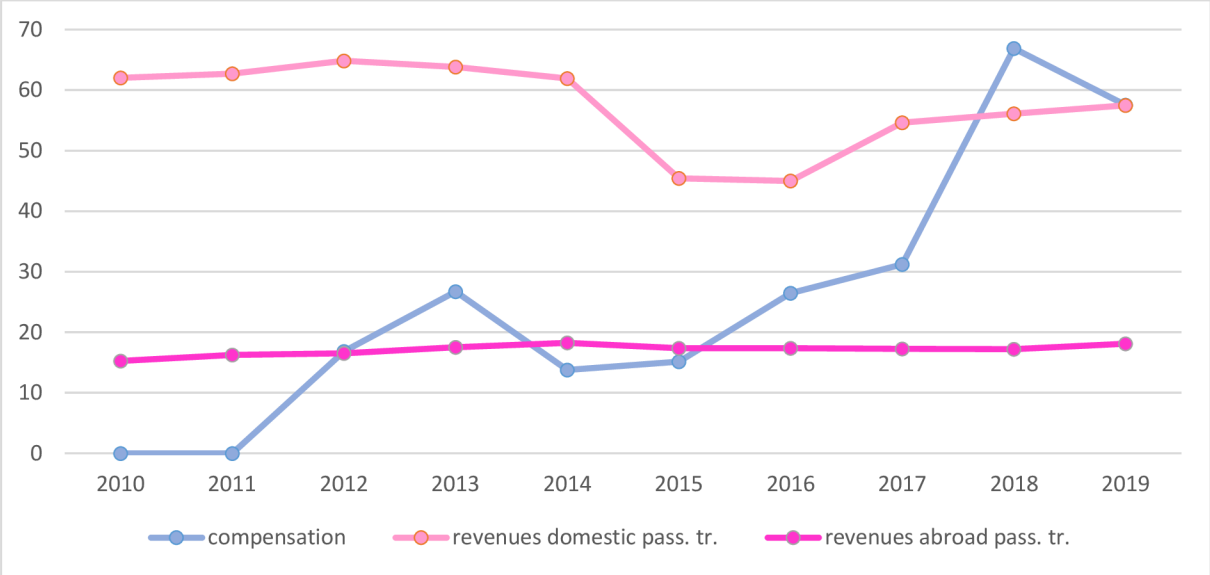
4.4 Financial impacts

This chapter analyses the relationship between revenues from domestic and international passenger rail transport and total compensation for free fares or discounts in each country. Revenues in both cases are adjusted for inflation.

Figure 5 shows the development of indicators during 2010–2019 including compensation for PSOs and discounts,[3] revenues from domestic passenger transport, and revenues from abroad/foreign/cross-border passenger transport in Slovakia.

[3] Compensation in Slovakia is not strictly and directly related to the number of sales of senior and student tickets. It includes compensation for company losses from previous financial years, sometimes associated with restructuring.

Figure 5 The Railway Company of Slovakia revenues and subsidies (in EUR mil.)

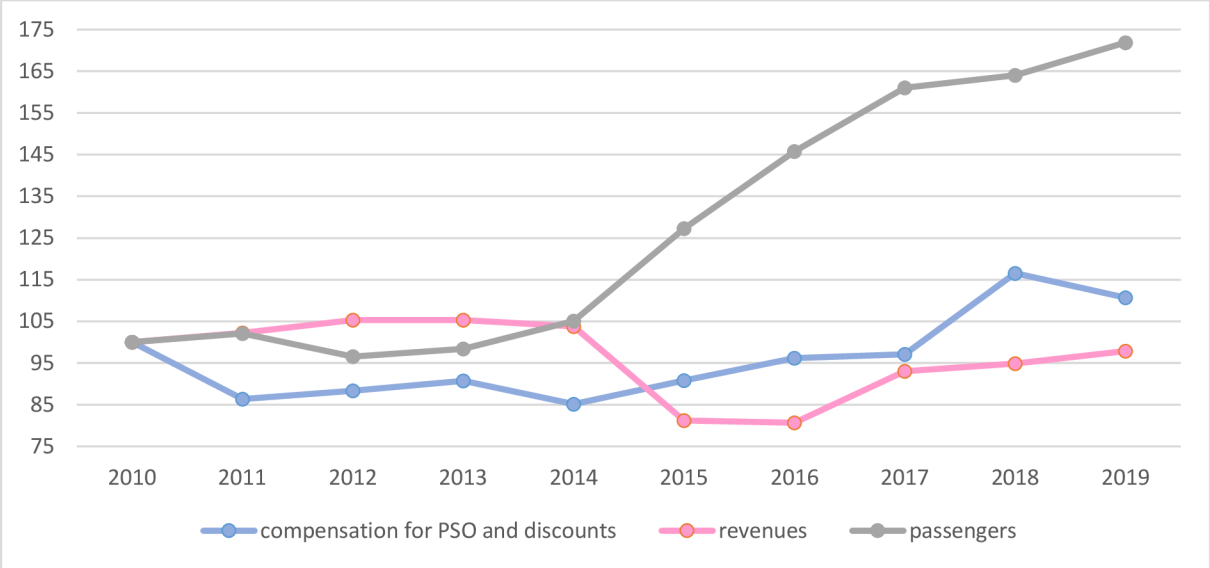


Data source: ZSSK (2010–2019)

The results show that PSO and fare compensation from the Ministry of Transport to the Railway Company of Slovakia (ZSSK) varied throughout the period, but there was no decrease in the total compensation after the launch of the free-fare scheme in autumn 2014. While the sum of both (PSO and discount) compensations stagnated or slightly decreased on average by 1.5% during 2010–2014, it increased by more than 42% during 2015–2019. The change in 2015 is worth mentioning. Revenues from domestic and foreign passenger tickets decreased by EUR 19.2 million (meaning 22%; in domestic transport even 27%), which was compensated for by an increase in PSO and other compensation by EUR 13.5 million. Comparing the last year without discounts (2013) with the last year of the relevant period (2019) reveals a decrease in revenue from both domestic passengers and passengers abroad (EUR 1.4 million) accompanied by a substantial increase in PSO and discount compensation (reaching EUR 66.1 million).

Figure 6 captures the increase in passengers by 75%, accompanied by a compensation increase by 22% and a decrease in total revenues by 7% in the relevant period (2013–2019).

Figure 6 Financial impacts and rail passengers in Slovakia (index; 2010=100)



Data source: ZSSK (2010–2019), Eurostat (2021)
Note: Adjusted for inflation using the Harmonised Index of Consumer Prices.

Table 3 shows the financial impacts on the bus sector in Slovakia represented by the 15 members of the Slovak Bus Association. In 2013, total revenues were EUR 141 million (FinStat 2021), but these bus companies' "revenues from sales of own products and services" gradually decreased to less than 85% despite the fact that most of their services are financed by regional governments to provide regional public transport services. There is only the single exception of SAD Prievidza, a.s., which grew. For some of the companies (Eurobus Košice, SAD Humenné, SAD Poprad, SAD Trenčín, and SAD Zvolen), the fall in revenues reached almost 20% in 2019.

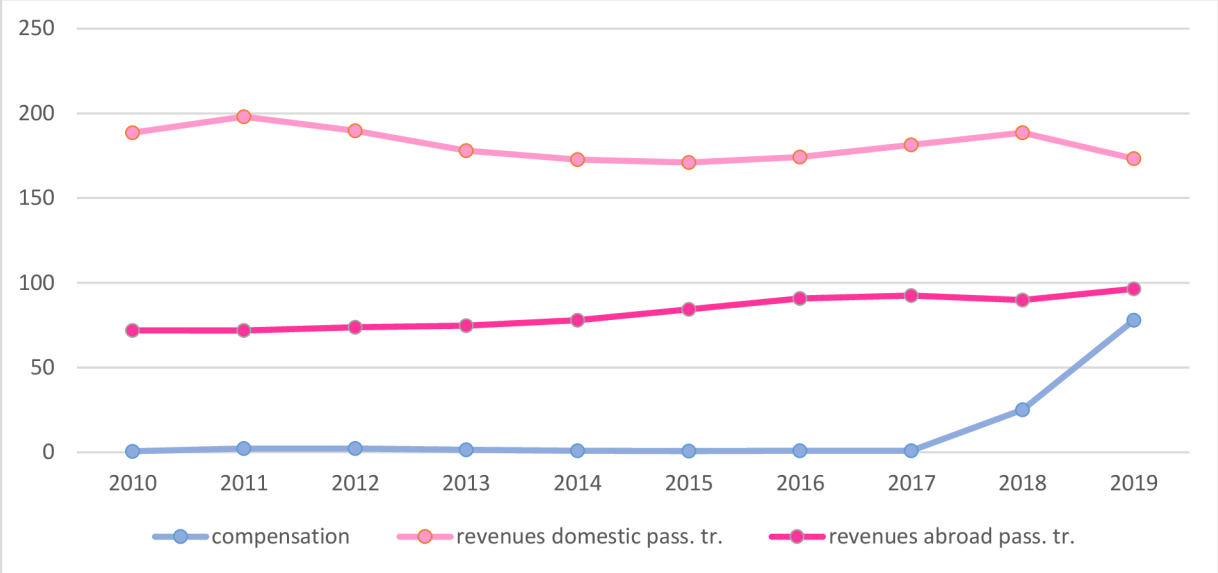
Table 4 Index of total revenues in the bus sector in Slovakia (2010 = 100)

Year	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Index	100	100	131	127	123	119	115	113	113	111

Data source: FinStat (2020)

In the Czech Republic, the experience is very recent, so it is not possible to compare long-run effects over a five-year horizon as in Slovakia. We can only observe the immediate effects as the only whole year with 75% discounts is 2019. Despite this limit, there is a different situation, as is shown in Figure 7. In the Czech Republic, the compensation for discounts grew more sharply than it did in Slovakia, and in contrast to the Slovak case, revenues from passengers abroad increased in 2019.

Figure 7 Czech Railways revenue and subsidies (in EUR mil.)

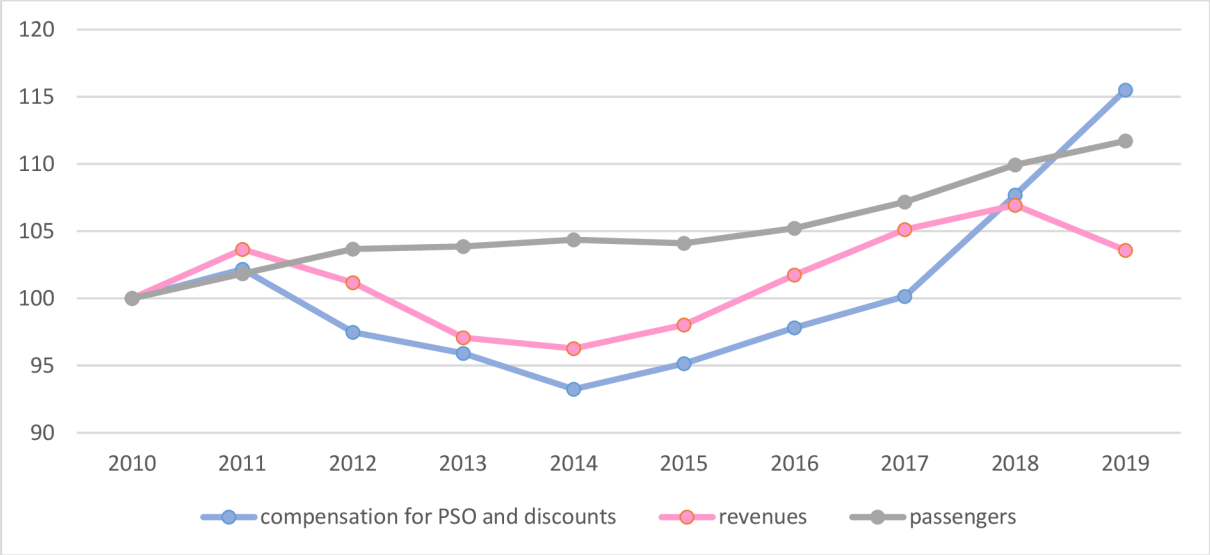


Data source: ČD (2010–2019)

The public compensation for discounts during 2010–2017 was, on average, over EUR 1 million per year. In 2018, which includes four months of effective fare discounts, there was a sharp increase in public compensation to more than EUR 28 million, and then in 2019 an increase to EUR 90 million. At the same time, PSO compensation was stagnating, and so the fiscal effect of the new discounts is obvious. Furthermore, in contrast to Slovakia, compensation for Czech Railways is strictly related to the number of student and senior tickets sold. There is no compensation for losses from previous years as in the Slovak case. A common feature for both cases is immediately falling revenues from domestic transport; however, accompanied by increasing revenues from transport abroad in the Czech Republic and stagnating revenues from transport abroad in Slovakia. The difference between Slovakia and the Czech Republic lies in the very sharp increase in compensation in the Czech Republic, where the original level was almost zero.

Figure 8 shows the overall impacts on PSO and other discount compensation, revenues, and passengers in the relevant period indexed to 2010.

Figure 8 Financial impacts and rail passengers in the Czech Republic (index; 2010 = 100)



Data source: ČD (2010–2019), Eurostat (2021)
Note: Adjusted for inflation using the Harmonised Index of Consumer Prices.

Looking at figures 6 and 8, we can see a sharp increase in passengers in Slovakia in first three years after discounts were launched (from 2015 to 2017). It was accompanied by a decrease in revenue in the first year. However, revenue started to increase again already after two years of discounts in 2017. In the Czech Republic, in contrast, we can see a decrease in total revenue, but revenue not adjusted for inflation grew. The growth rate for passengers was similar to previous years, especially those from 2015 to 2018. Thus, we cannot see a clear impact from the discounts on the level of passengers in the Czech Republic.

5. Discussion

The introduction of free fares in Slovakia and fare discounts in the Czech Republic has made public transport in both countries more attractive. Therefore, it motivated people to use public transport more. On the other hand, the rail fare levels in Slovakia and the Czech Republic are among the lowest in the EU. According to data from 2019 (Beria et al. 2020), tickets for trains in the Czech Republic are EUR 0.0427/km and those in Slovakia are EUR 0.0491/km. Those in Western Europe are around three times as high, e.g. EUR 0.1616/km in Italy and EUR 0.1481/km in Austria.

Czech and Slovak fare levels are lower than those in Western Europe even when corrected for lower economic levels and lower wages. This situation is a consequence of the fact that both countries were centrally planned economies where public transport was a preferential and cheap mode of transport. However, the low absolute fare levels in both countries diminished the potential of free fares or fare discounts. Nevertheless, for some population groups the existing

monetary costs may still have been high. In this respect, the free-fare policy in Slovakia may have had better starting conditions because generally the fare decrease was higher, the absolute fare level in Slovakia was higher than it was in the Czech Republic, and wages are lower in Slovakia. Therefore, out-of-pocket outlays for public-transport fares constituted a higher proportion of disposable income.

There are significant differences in the designs of these policies. In addition to the differences in the total fare discounts (100% vs. 75%), the crucial difference lies in coverage. Slovakia included only trains and not buses, which had important consequences for the entire transport market. The bus market was hit hard – it saw an outflow of passengers, a worsening financial situation, and reduced long-distance services (zeleznicne.info 2017). The preference for rail over bus in Slovakia had some unintended consequences. It helped marginalized groups with good access to the rail network and rail stations, but this policy has worsened the transport situation for people reliant on bus transport. In this respect, the policy design in the Czech Republic seems to be more sophisticated (compared to experience from Slovakia). The 75% decrease (instead of 100%) and the coverage of both buses and trains kept at least some monetary incentives and covered the entire public transport market. However, both designs did little to differentiate between peak and off-peak travel and have no bonuses/stimulation for travel from or to disadvantaged regions, and so the potential of these policies to mitigate inequalities in access to transport services was not fully utilized.

The fiscal costs of these policies were significant, especially in Slovakia; however, they are manageable in the context of the total subsidies for rail/public transport. The policies were successful in increasing total ridership and especially ridership among the targeted groups of elderly and young people. However, it is still an open question whether the subsidization of fares is the best way to help them with their mobility. Moreover, the policies were targeted at supporting public transport only and did nothing to decrease the attractiveness of individual car transport. Some measures that could disadvantage individual car transport (parking policies, entrance charges, highway charges) could be a good supplement to the existing measures.

The introduction of fare-discount policies in both countries was primarily a political decision. The operators in Slovakia were surprised by this policy and at the beginning were struggling with its implementation. The design of the policy in the Czech Republic was more sophisticated because it had been inspired by some shortcomings in the Slovak system. The political dimension was also important in the policy scope. In Slovakia, the central government and regional governments were controlled by different political parties. Another political feature was the decision of the Slovak government to exclude commercial trains from the policy. This effectively led to the withdrawal of the private operator RegioJet from the long-distance rail

market in Slovakia because it could not compete against free-fare PSO trains. The crucial decision in the Czech policy design was to keep some monetary costs present because the free fares on Slovak trains had led to some problems. It was reported that free-fare night rail transport in Slovakia attracted homeless people and student drinking parties, and regular security guards had to be called upon. Moreover, there was dissatisfaction among paying customers with overcrowded trains during peak times, which forced the introduction of paid seat reservations. However, this policy formed another disincentive for paying customers. The struggles with available capacity were also reflected in the fact that the Railway Company of Slovakia was forced to maintain seat limits for paying customers and free-fare transport in its trains in order to manage operational capacity. On the other hand, the introduction of free-fare policies in Slovakia also had the unintended consequence of increasing supply. The train operators were forced to increase train supply to accommodate the growing demand from free-fare customers. The growing supply made rail transport even more attractive due to the increased frequencies and interconnections, which also stimulated growth in the numbers of paying customers.

6 Conclusions

The paper analysed two policies of significant fare reductions that ranged between 75% and 100% discounts and covered trains and buses in the Czech Republic and only trains in Slovakia. The discount policies in both countries reduced or eliminated fares for young and elderly people. The impact of these measures on the transport market was quite significant. The absolute numbers of rail passenger increased and, according to expectations, the highest rate of growth could be observed among young and elderly people. Elderly people responded more strongly to the discount measures than students did in both countries. The downside of this development was the significant fiscal costs of these measures, especially in Slovakia. The design of the policy was more sophisticated in the Czech Republic, where it was undoubtedly inspired by the shortcomings of the Slovak policy. The exclusion of buses in Slovakia was a significant omission that deformed the Slovak transport market. The results of these policy experiments are in line with the existing literature that document that free-fare discounts are expensive policies with quite low efficiency.

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