

9. Polish transport in a changing Europe – 20 years of change

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Abstract: Two decades of EU membership are used to evaluate how infrastructure funding has transformed Polish transport. The chapter combines a literature review, EU funding data, statistical indicators and selected case studies of major road, rail, urban transport and waterway investments. Road and rail systems receive particular attention because they reveal the tangible effects of cohesion-policy financing. EU funds made possible projects that exceeded domestic financing capacity, including express roads, railway modernisation, rolling-stock purchases, tram routes and the Warsaw metro. Observable outcomes include expanded infrastructure, improved road safety, and fewer casualties and strong growth in railway passenger numbers, despite the interruption caused by the COVID-19 pandemic. The chapter reveals a clear connection between investment and transport quality. Continued funding can further support decarbonisation, accessibility and competitiveness across the Polish economy.

Keywords: EU funds, rail transport, road transport, investment, transport policy.

Introduction and methodology

How have infrastructure investments changed transport? What are the effects of the large financial investments in the 20 years since joining the European Union? The author seeks to establish the role EU funds have played in transport projects, with the main research area being infrastructure investments in recent years.

The study is based on a literature survey and an analysis of data sources. The majority of modern scientific publications focus on transport policy or investment alone, yet do not directly link them to changes in the transport market. In this chapter, the author also adds a time and spatial context (20 years of Poland's EU membership).

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9.1. The role of transport in the modern economy

Globalisation has greatly strengthened the role transport plays in the modern economy. Access to goods, raw materials and also finished products from all over the world drive development and improve the quality of life. Moreover, the COVID-19 pandemic confirmed transport's hugely significant role, since – the obstacles to international transportation touched all areas of life. To this day, transport is the core part of logistics, supply chains and supply networks, but also the important area of all other sectors of the economy.

According to the purely theoretical definitions of transport, “Transport is a socio-economic activity that determines all other activity” (Wojewódzka-Król & Załoga, 2022, p. 9). The economy (production) and society (settlement) are the primary sources of transport demand, shaping the movement of goods and people, generating different needs, in different configurations and intensities (Maczak, 2012, p. 197). In turn, transport needs are connected to economic development and social well-being (Rudzińska et al., 2012, p. 138). Scholars also focus on the interconnections between transport and economics, analysing historical, administrative and legal issues, on the one hand, and – cost issues on the other (Gwilliam & Mackie, 2017).

Modern transport is subject to intense transformations. Across various industries and branches of transport, these changes affect diverse areas, and occur with different dynamics, and not always at the same time. In general, however, they are the product of broader macroeconomic changes, macroeconomic dynamics and the processes taking place within it. These issues are also widely described in the literature of the subject, these changes.

Among the megatrends affecting mobility are digitalisation and urbanisation, but also sustainability – which affects changes in structure, decision-making processes or, in general, customer behaviour and social reactions (Friesendorf & Uedelhoven, 2021). “Transportation 4.0” (alternatively: Transport 4.0) is also increasingly prominent in transport literature, in particular, supporting intelligent production, automation of deliveries or the use of the Industry 4.0 concept in the transport industry in general (Wong et al., 2024). Digital transformation has become an integral part of transport and logistics development (Zaripowa et al., 2024), the rapid evolution of data management systems and the use of big data for transport (Paffumi et al., 2018). The list of technologies used by modern transportation continues to grow and now includes artificial intelligence, machine learning, 5G, pervasive computing and data analytics (Wang & Sarkis, 2021).

Reducing the impact on the environment is also a key trend, crystallised in Europe's “Fit for 55” agenda. Behind this slogan lies a set of policies and instruments that aim to reduce greenhouse gas emissions by 55% in 2030 compared

to 1990 levels. Discussion is ongoing as to the current and future impact of these reforms on different areas of transport markets (Ovaere & Proost, 2022). Europe's transport sector is undergoing evolution and needs to adapt both in the short term (operationally) and in the long term (in terms of sustainability). Research shows that the transition to zero-emission and low-emission transport is likely to lead to a reduction in greenhouse gas emissions, yet this may prove harder than originally planned (Aparicio, 2017). Considerable attention is being paid to decarbonising public transport in cities (Zawieska & Pieriegud, 2018), since these areas often register the highest concentrations of pollution. Cities are also identified as those areas where the share of bicycle transport is rising (Pucher & Buehler, 2017).

9.2. EU policy and transport in Poland

The unconstrained movement of goods is a fundamental pillar of European integration. The abolition of customs duties or quantitative restrictions on goods transported has long been a key factor stimulating and contributing to development in the transport sector. The free movement of goods also entails harmonising national legislation and completing the internal market, both actions serving to remove obstacles to the unconstrained movement of goods (European Parliament, 2025).

Projects implemented with EU funds play a critical role in regional and national, and international transport (Rosik et al., 2015). Poland's strategic location provides substantial opportunities for developing the logistics industry, including transit services. Poland's presence in the European Union has further strengthened its competitive position in the logistics industry.

It is clearly recognised that Poland's accession to the EU marks the country's second economic breakthrough (after the introduction of a free market economy in 1989). The breakthrough was also stimulated in the transport sector by the influx of significant funding. From the beginning, the possibility of absorption of EU funds was recognised as new, large opportunities and a chance to increase competitiveness for Polish regions (Słodowa-Helpa, 2005). Local government units were also instrumental in creating and implementing development policy in the regions (Jastrzębska, 2011). Recent years have been dominated by discussions on the next EU funds, through the National Plan for Reconstruction and Resilience Enhancement (Krajowy Plan Odbudowy i Zwiększenia Odporności – KPO). These discussions not only point to the possibilities of building infrastructure but also to the effects of using this infrastructure, such as in eliminating transport exclusion (Beim, 2023).

9.3. European funds for transport development

Transport for private purposes generally sustains itself through rational economic calculation, whereas public transport, as non-profitable public service, needs additional stimulation. Thus, support for the transport industry takes the form of financial support for public sector.

“The objective of cohesion policy is to reduce the growing imbalances between regions in the European Union. This policy area accounts for around a third of the EU budget, implemented through operational programmes” (European Parliament, 2024). Funds are made available for defined programming periods. The concept of “absorption capacity” has also been introduced to refer to the Member States’ ability to spend these funds effectively and efficiently (European Court of Auditors, 2018).

In Poland, full responsibility for handling European funds is borne by The Centre for EU Transport Projects (CEUTP, Centrum Unijnych Projektów Transportowych – CUPT). This organisation’s task is to support beneficiaries in the preparing and implementing investments in the transport sector, across all available branches and sectors of transport. In 2022, the CEUTP celebrated its 15th anniversary. Figure 9.1 shows the investments carried out within the framework of projects supervised by CEUTP.

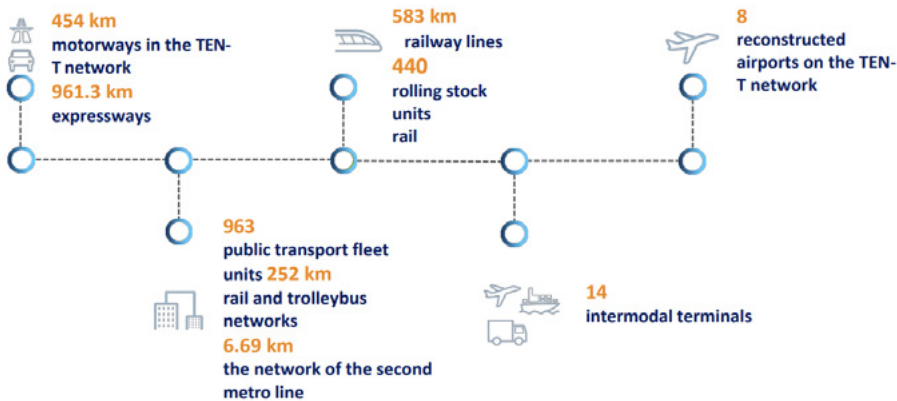


Figure 9.1. EU funds in 2007–2013

Source: (CEUTP, 2022).

These funds were spent mainly on infrastructure (also parts of TEN-T), namely high-speed roads (motorways, expressways) or railways, alongside signif-

icant purchases of rolling stock. Urban transport is a clear beneficiary of EU funds, e.g., numerous tram lines construction projects were financed from EU funds.

In Figure 9.2 are the projects implemented in the next EU perspective – with special consideration of their value.

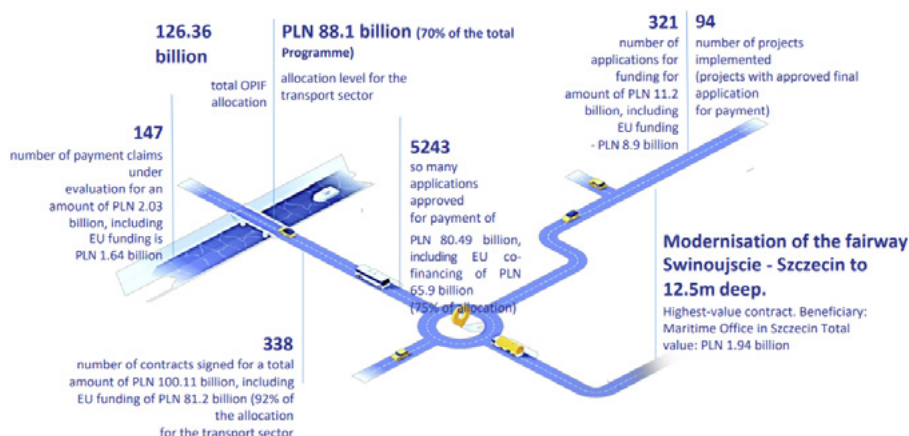


Figure 9.2. EU funds in 2014–2020

Source: (CEUPT, 2022).

Selected examples will be highlighted later in the publication.

9.4. Transport investments – selected examples

Cities play a major role in utilising EU funds. Because of their high concentration of inhabitants and their needs, combined with spatial constraints, they need to build and maintain expensive infrastructure. Three of the eight largest infrastructure projects (Table 9.1) implemented under the 2014–2020 funds concern urban transport.

Table 9.1. Top 2014–2020 investments

Project title	Project value (PLN) EU financing (PLN)
Construction of the second metro line with the purchase of rolling stock – phase III Capital City of Warsaw Public transport	3 564 536 216 PLN 1 952 151 513 PLN
Construction of the second metro line, together with accompanying infrastructure and purchase of rolling stock – phase II Capital City of Warsaw Public transport	2 942 508 171 PLN 1 826 345 155 PLN

Project title	Project value (PLN) EU financing (PLN)
Flood reservoir Racibórz Dolny on the Odra in the Silesian Voivodeship (polder) PGW Wody Polskie Environmental protection	1 995 176 677 PLN 667 040 000 PLN
Modernisation of the Świnoujście-Szczecin waterway to a depth of 12.5 m Maritime Office in Szczecin Maritime Infrastructure	1 935 556 000 PLN 1 226 448 000 PLN
Railways for good connections – modernisation of wagons and locomotives for PKP Intercity S.A. PKP Intercity Railway	1 349 646 634 PLN 515 206 886 PLN
Construction of tramway route to Wilanów with purchase of rolling stock and accompanying infrastructure Warsaw Trams City Transport	1 201 554 915 PLN 554 633 384 PLN
We are speeding up comfortably – modernisation of wagons and purchase of locomotives for PKP Intercity S.A. PKP Intercity Railway	1 156 050 037 PLN 495 765 402 PLN
Construction of express road S19 Lublin–Rzeszów, section Nisko Południe (without junction)–Sokołów Małopolski Północ (with junction) General Directorate of National Roads and Motorways Road Transport	1 132 005 519 PLN 587 297 822 PLN

Source: based on (Krawiec, 2023).

Despite containing only a few selected examples, the table above shows the role EU funds play in transport sector development. They enable the most difficult projects to be financed, whose value invariably far exceeds the current possibilities of financing from cities' own resources. A perfect example is the second underground line in Warsaw. The list also includes railway projects (the purchase and modernisation of the rolling stock), water transport investments, flood control infrastructure. Only one of the eight largest projects concerns road infrastructure; although road transport remains by far the dominant type of transport in Poland, the aim of EU measures is primarily to support other types of transport, which have a smaller impact on the environment. However, this does not diminish the important role of EU financial measures in developing Poland's road infrastructure over the years.

9.5. Investment outcomes and prospects for further changes

The current state of road infrastructure is largely the result of the many projects carried out with the support of EU funds. The map provided by the General Directorate for National Roads and Motorways (Generalna Dyrekcja Dróg

Krajowych i Autostrad – GDDKiA) illustrates the layout of this network, with particular emphasis on new infrastructure projects implemented using EU funds. The map (Figure 9.3) contains projects completed within the framework of the EU perspective 2014–2020.

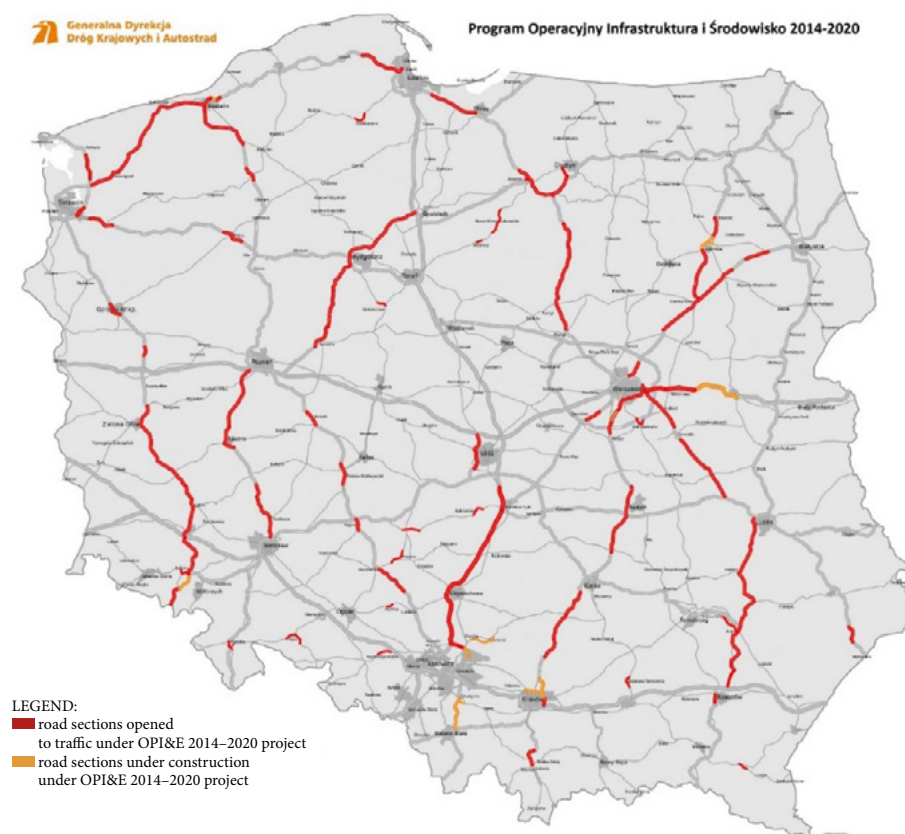
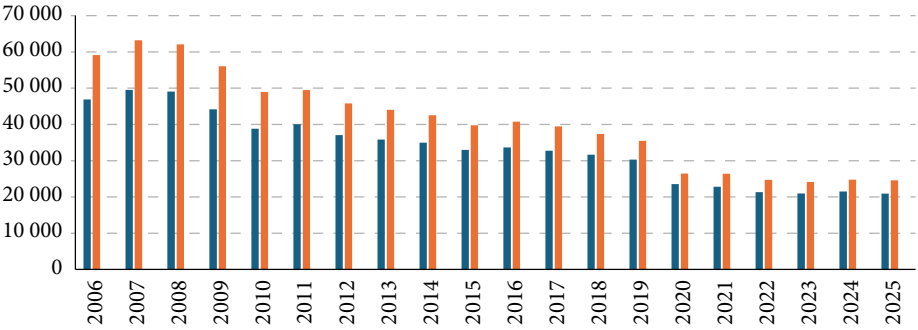


Figure 9.3. Roads constructed under OPI&E 2014–2020 projects

Source: (GDDKiA, 2023).

The construction of a network of high-speed roads is a process spanning years. As the map shows, investments in recent years have enabled the completion of the high-speed road network, involving numerous road construction projects, especially expressways. Most of these were north-south routes, while the arrangement of lateral roads, primarily the A2 and A4 motorways, was mostly completed in earlier periods. These projects utilised both EU funds and private concession agreements.

How does the road network reflects into economic effects and lower external costs of transport? First of all, new roads mean shorter journey times and greater travel comfort. Better-standard roads cut the external costs of transport, while also significantly reduce the number of road accidents, as shown in the statistics presented in Figure 9.4 and Figure 9.5. A downward trend is clearly visible here, and the consistent multi-year expansion of the road network has led to a marked decrease in road casualties. Moreover, while contemporary projects place greater emphasis on railway projects, it is vital to recognise how a significant number of road projects were implemented previously, also heavily supported by EU funds.



Notes: higher figure: series 1 – injuries; series 2 – year; lower figure: series 1 – fatalities; series 2 – year

Figure 9.4. Number of road accidents and injuries, 2006–2025

Source: (Policja.pl, 2026).

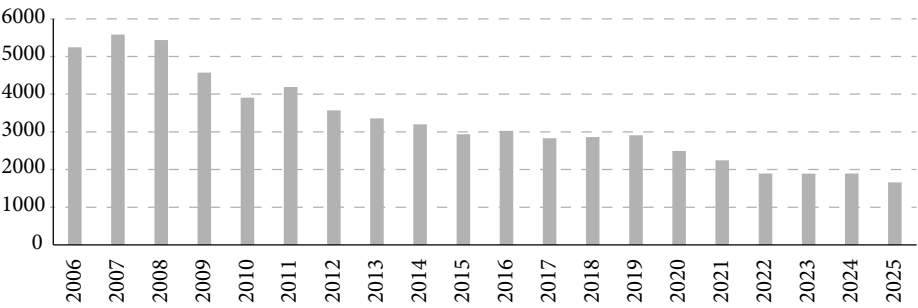


Figure 9.5. Number of road fatalities

Source: (Policja.pl, 2026).

Rail transport remains an important beneficiary of EU funds. As illustrated in Figure 9.6, the 2014–2020 EU perspective saw a significant increase in passenger numbers, a direct effect of the modernisation of rail routes (both main lines and

regional routes) and the purchase of new rolling stock (both by regional and national carriers). Moreover, track repairs resulted in increased train speeds and shorter journey times, while the new fleet means greater travel comfort. In effect, the rail transport sector recovered quickly after the COVID-19 pandemic.

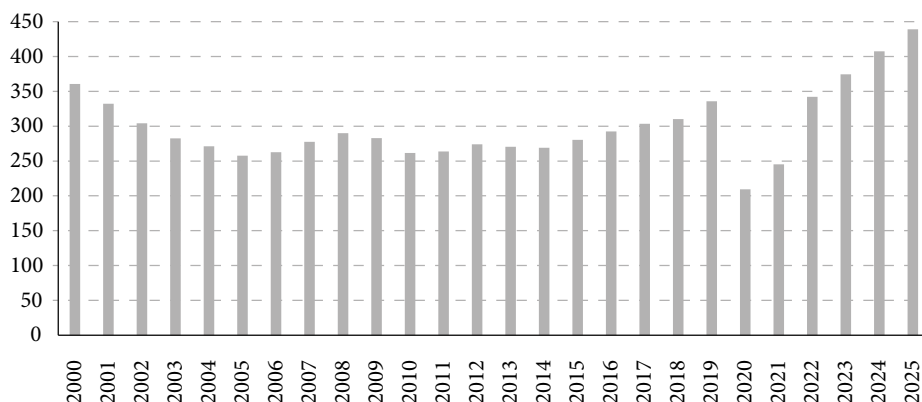


Figure 9.6. Number of railway passengers in Poland by years (mln of passengers), 2000–2025

Source: (UTK, 2026).

Conclusions, main outcomes and research results

Ultimately, when answering whether the investments discussed above have contributed to the development of transport, the data on road safety and rail passenger numbers show clear growth (qualitative, quantitative) in the transport sector. This expansion correlates strongly with the large infrastructure investments in recent years. It can therefore be argued that without the financial resources available under EU programmes, such a rapid development in the transport industry would not have been possible. Moreover, in sectors requiring the involvement of the state and its structures (infrastructure, public transport), access to EU funds has proved critical. Parallel advancements are visible in maritime and air transport, which are also beneficiaries of the EU funds.

The twentieth anniversary of Poland's accession to the EU provides a fitting opportunity to take stock. This chapter contributes to the academic discussion on transport sector development and the changes taking place in the transport industry. Given the dynamics of the whole sector, combined with many macroeconomic challenges and the ever-growing role of international transport,

this subject is likely to remain an extremely attractive field of research, both for researchers working in transport and logistics, and others specialising in regional and European policy.

In short, transport has undergone major changes over the last two decades, precipitated by the availability of EU funds. Moreover, the prospects for the coming years are promising, and further large investment funds provide the potential for developing selected transport sectors and the economy as a whole.

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