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Before Sunset

László Nemes Jeles's "Sunset" from 2018 is an intimate picture inviting the spectator to feel in some way the end of the Austro–Hungarian Monarchy through the lens of a young girl in search of her brother throughout chaotic situations in Budapest just prior to the outbreak of World War I.

"Before Sunset" is another movie by Richard Linklater from 2004 with Julie Delpy and Ethan Hawke where nine years after their brief romance in Vienna, Jesse and Céline meet in Paris and spend the whole day together discussing and roaming throughout Paris. Somehow, the spectator understands that Jesse will stay this time with Céline instead of catching his flight he is supposed to take in the evening.

Therefore, the metaphor "Sunset" employed in these artworks can simultaneously mean the end or the beginning of something and/or that there is no beginning without end. Whatever it means, it is about change.

"No man ever steps in the same river twice, for it is not the same river and he is not the same man." The wisdom of Heraclitus of Ephesus (around 500 BC) coming from another time and another world is timelier than ever.

Is the world changing us within or we change the world as a result of our internal changes? Could the same actions not lead to the same result if repeated? Or does this mean that the world never "is" but always "becomes"? But what if "becoming" is "being" or "being" equals to "becoming"?

The reflection can be stretched ad infinitum, but it is a fact that the world has changed and in truth has never ceased to change, and the European Union cannot escape such reality, either.

The European Union faces so many challenges that it is hard to list them all. The closing edition of the Special Issues of *Európai Tükör – European Mirror* dedicated to the Hungarian EU Presidency tries nevertheless to shed light on a couple of them including challenges related to energy, climate change or digitalisation from the pen of Tibor Navracsics, Anna Taraczközi, Réka Csepeli, Tibor Tóth, Csaba Fási, Petra Szűcs, Ádám Ferenc Kossuth, Bettina Tóth and myself.

Hopefully, the Hungarian EU Presidency is not the end but rather the beginning of a long period of positive development for the European Union.

Krisztián Kecsmár
Editor-in-Chief

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Krisztián Kecsmár[1]

Are External Values to Competition Law Taken into Consideration by Judges in Recent Competition-Related Case Law of the Court of Justice of the European Union?[2]

The borrowing of concepts from other areas of law to interpret the rules of the area of law that the person is entitled to enforce is a relatively new phenomenon in EU competition law judgements of the CJEU. The digitalisation aspect characterised by fast and constant technical developments indisputably provided an occasion for EU judges to turn to external values in their judgements related to competition law. This aimed to cope with new challenges necessitating the incorporation of exogenous values by EU judges in the field of competition law. A spectacular illustration of such trend is the Meta Platforms Case in which the CJEU judgement came out in July 2023. Other novelties can, however, also appear even in the absence of rapid technical evolution necessitating the same recourse to external values, such as in relation to sport-related cases of Superleague, ISU and Royal Antwerp. The present paper aims to find the answer to what extent external values can be borrowed from other areas of law, by illustrating the cases mentioned above, which are limited to this aspect only, in order to allow EU judges to incorporate them into their competition law analysis.

Keywords: Meta Platforms, Superleague, Super League, UEFA, FIFA, International Skating Union, ISU, Royal Antwerp, Rantos, Szpunar, abuse of dominant position, consumer's welfare

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[1] Member of the General Court, the views and opinions expressed in the present paper are those of the author and do not reflect the views or positions of the General Court.

[2] Study inspired by my participation in the Conference organised by Ludovika University of Public Service on 28 September 2023 dedicated to the theme "Challenges Facing the Judiciary in the 21st Century".

Introduction

"Only the Paranoid Survive", stated the Intel CEO and founder of Hungarian origin, Andrew S. Grove (Gróf András István). He put it in a very appropriate manner that the crucial thing is how to exploit crisis points. How companies or undertakings should survive, and even more, how they should turn crises to their advantage or, so to speak, a change of paradigm. A radical change is even more complex, Grove calls it Strategic Inflection Point (SIP). In his book published at the end of the twentieth century, he spotted the future of the appearance of Internet as a point inducing extremely fast changes that could not be undone. For him, the most important point is to realise in time such a change and adopt a radically new behaviour, a radically new strategy.[3]

An undisputed phenomenon is that the world has changed and actually has never stopped changing. We are substantially facing more and more novel challenges compared to the past. Just to name a few: war, economic battle among the 'geopolitical' blocks, climate change or migration, and many more. In addition, one can also mention the appearance of artificial intelligence, increased levels of protection of personal data, GDPR[4] in the Union or the so-called Digital Markets Act[5] (DMA) in the Union, which entered into force on 2 May 2023. The legislation aimed at preventing the anti-competitive practices of the Internet giants and correcting the imbalances of their domination of the European digital market.

The digitalisation aspect characterised by fast and constant technical developments indisputably provided an occasion for EU judges to turn to external values in their judgements related to competition law in order to cope with new challenges necessitating the technique of incorporation of exogenous values by them[6] in the field of competition law. A striking illustration of this trend was the CJEU's Judgement, handed down on 4 July 2023 in the *Meta Platforms Case* with regard to data protection.[7]

Other novelties can also appear even in the absence of rapid technical evolution necessitating the same recourse to external values. This is the very spectacular case of Article 165 of the Treaty on the Functioning of the European Union (hereinafter "TFEU") entered into force on 1 December 2009. Indeed, Article 165 TFEU has found its way into the Treaties with the Treaty of Lisbon and deals with three distinct, yet interrelated issues: education, youth and sport.[8] Whilst sport was not initially covered by the founding treaties of the European Union, the confirmation of its 'special nature'

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3 KECSMÁR 2018a.

4 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, *OJ L 119, 4.5.2016, 1–88*.

5 Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828, OJ L 265, 12.10.2022, 1–66. In this respect see also the Judgement of 17 July 2024, *Bytedance*, T-1077/23, EU:T:2024:478.

6 NEBBIA 2023.

7 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537.

8 Szpunar Royal Antwerp 2023, paragraph 49.

and its insertion into Article 165 TFEU by the Treaty of Lisbon marked the culmination of an evolution encouraged and promoted by the EU institutions.[9] The FIFA–UEFA and Super League 'battle' in the field of sport and the concept of 'Union Sports Model'[10] undoubtedly characterised by, beyond any doubt, a significant economic activity[11] involved discussions, among football stakeholders, primarily of a commercial and political nature, while EU competition law could also have a crucial impact on the success rate of these initiatives.[12] The *ISU,*[13] *Superleague*[14] and *Royal Antwerp*[15] *Cases* are to some extent "legally unprecedented" and "central to the issue of the relationship and interplay between competition law and sport".[16] The question of the degree of application of the provisions of Article 165 TFEU found itself from one day to another in the middle of every attention. Has it therefore become necessary to incorporate in the competition law reflection and to find the right level of interpretation of the provisions of Article 165 TFEU applicable in Union law since December 2009,[17] already "loosely" applied in the field of education by EU judges?[18]

The present paper is intended to focus on the two above issues even if other fields might also provide examples of the question of necessity of taking into account external considerations to competition law (e.g. public procurement).[19] It does so in light of the recent case law of the Court of Justice of the European Union (hereinafter the "Court" or "CJEU") including the General Court of the European Union in the field of competition law, where the EU judges were faced with unprecedented questions of law, and where the replies given raised or might raise questions about the clear delimitation of competition law and whether the incorporation of external values is of clear help to EU judges.

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9 Rantos Superleague 2022, paragraph 27.

10 Rantos Superleague 2022, paragraphs 27–32.

11 Rantos Superleague 2022, paragraphs 34, 90.

12 Blockx et al. 2022.

13 Judgement of 21 December 2023, C-124/21 P, *International Skating Union v Commission,* EU:C:2023:1012.

14 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011.

15 Judgement of 21 December 2023, C-680/21, *Royal Antwerp Football Club,* EU:C:2023:1010.

16 Rantos ISU 2022, paragraph 3.

17 Szpunar Royal Antwerp 2023, paragraphs 48–55.

18 Szpunar Royal Antwerp 2023, Judgement of 7 September 2022, C-391/20, *Cilevičs and Others*, EU:C:2022:638, paragraph 59: "[W]hile EU law does not detract from the power of those Member States as regards, first, the content of education and the organisation of education systems and their cultural and linguistic diversity and, secondly, the content and organisation of vocational training, as is apparent from Article 165(1) and Article 166(1) TFEU, the fact remains that, when exercising that power, Member States must comply with EU law, in particular the provisions on freedom of establishment."

19 Judgement of 30 November 2022, T-101/18, *Austria v Commission,* EU:T:2022:728, paragraphs 15–49 and Opinion of Advocate General Medina delivered on 27 February 2025 in Case C-59/23 P, *Austria v Commission (Centrale nucléaire Paks II)*, EU:C:2025:125.

Short return to basics of EU competition law targeted to the problematics raised by the technique of incorporation of external values by EU judges in the field of competition law

EU competition law constitutes one of the first core policies within the European Union that applies to all undertakings carrying out an economic activity.

In fact, according to Article 3(1) point b), TFEU, the Union has exclusive competence in the area of "the establishing of the competition rules necessary for the functioning of the internal market".

Article 3(1) TFEU indeed lists the areas in which the European Union has (express) exclusive competence, namely the customs union, the establishing of the competition rules necessary for the functioning of the internal market, monetary policy for the Member States whose currency is the euro, the conservation of marine biological resources under the common fisheries policy and the common commercial policy.[20]

Also linked with the pursuit of the EU's objectives, as set out in Article 3 of the Treaty on European Union (hereinafter "TEU"), the pursuit of the said objectives is entrusted to a series of "fundamental provisions", such as those providing for the free movement of goods, services, capital and persons, citizenship of the Union, the area of freedom, security and justice, and "competition policy". Those provisions, which are part of the framework of a system that is specific to the EU, are structured in such a way as to contribute – each within its specific field and with its own particular characteristics – to the implementation of the process of integration that is the "raison d'être" of the EU itself.[21]

It is, therefore not exaggerated to state that EU competition policy is the cornerstone of the EU development.[22]

Its origins in the EU go back to the founding treaties.

The Treaty establishing the European Coal and Steel Community (ECSC) was signed on 18 April 1951 in Paris (expired on 23 July 2002) and two treaties were signed on 25 March 1957 in Rome – the Treaty establishing the European Economic Community (EEC) and the Treaty establishing the European Atomic Energy Community (EAEC or Euratom).

Both of the above founding treaties clearly set out the objectives and rules that comprise the foundations of the currently effective EU Competition law policy partly also included in the European Coal and Steel Community.[23]

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20 Szpunar 2017, paragraph 74.

21 Opinion 2/13 of the Court (Full Court) of 18 December 2014, *Adhésion de l'Union à la CEDH,* EU:C:2014:2454, paragraph 172.

22 DUMEZ–JEUNEMAÎTRE 1991.

23 KECSMÁR 2021.

Article 65 of the ECSC Treaty, terminated on 23 July 2002,[24] prohibited agreements restricting competition in the field of policies covered by said treaty, while its Article 60 prohibited unfair and discriminatory competition in terms of prices, and its Article 66 already foresaw merger rules under certain conditions. Articles 85 and 86 of the Treaty of Rome prohibited agreements restricting competition and the abuse of a dominant position. The concept of State aid was already included in the Treaty of Rome in its Article 92, and its wording barely evolved during the process of the European integration,[25] such as the content of Articles 85 and 86. However, merger control on a standalone basis came into effect in the EU only in 1989 with the adoption of Regulation 4064/89/EEC,[26] when EU merger control was subject to *ex post* rather than *ex ante* scrutiny.[27]

Actually, Article 101 TFEU prohibits cartels, meaning all agreements between undertakings, decisions by associations of undertakings and concerted practices, which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market. Additionally, Article 102 TFEU prohibits abuse of dominant position in the following terms: any abuse by one or more undertakings of a dominant position within the internal market, or in a substantial part of it, shall be prohibited as incompatible with the internal market insofar as it may affect trade between Member States.[28]

Procedural rules for the application of Articles 101 and 102 TFEU had been laid down in 1962 in Regulation 17,[29] which were reviewed with the entry into force of Regulation 1/2003/EC[30] in view of the substantial changes resulting from the then planned accession of 10 new Member States.[31]

Merger control is regulated today via regulation 139/2004/EC,[32] while State aid is governed by Articles 107–109 TFEU[33] and Regulation 2015/1589/EU,[34] having entered into force in mid-October 2015 by replacing Regulation 659/1999/EC.[35]

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24 Judgement of 9 December 2014, T-70/10, *Feralpi v Commission,* EU:T:2014:1031, paragraphs 3, 4.

25 Nyikos 2018.

26 Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings, *OJ L 395, 30.12.1989, 1–12.*

27 Judgement of 16 March 2023, C-449/21, *Towercast,* EU:C:2023:207, paragraph 49.

28 Csépai 2018; Tóth 2018.

29 EEC Council: Regulation No 17: First Regulation implementing Articles 85 and 86 of the Treaty, *OJ 13, 21.2.1962, 204–211.*

30 Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, *OJ L 001, 4.1.2003, 1–25.*

31 Wils 2022; Dorich 2023.

32 Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings, *OJ L 24, 29.1.2004, 1–22.*

33 Tóth 2020.

34 Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union, *OJ L 248, 24.9.2015, 9–29.*

35 Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty, *OJ L 83, 27.3.1999, 1–9.*

As already pointed out, in light of Article 3(1) point b) TFEU, the aim of the EU Competition law policy is to make sure the proper functioning of the internal market. Beyond this simple statement, a deeply different and complicated question however underlies.

The aim of EU competition policy was to remove and prevent barriers to trade erected by companies and state-owned enterprises. In addition, in the Treaties, it was sought to encourage competition, efficiency, innovation and lower prices in order to optimise the functioning of the single European market.[36]

According to the website of the European Commission dedicated to Competition policy: "[C]ompetition policy encourages undertakings to offer consumers goods and services on the most favourable terms. It encourages efficiency and innovation and reduces prices. To be effective, competition requires undertakings to act independently of each other, and subject to the pressure exerted by their competitors."

It is fully in line with Mario Monti's 2001 speech in London at the Merchant's Taylor Hall where he stated that "the goal of competition policy, in all its aspects, is to protect consumer welfare by maintaining a high degree of competition in the common market. Competition should lead to lower prices, a wider choice of goods, and technological innovation, all in the interest of the consumer" before adding that the EU's "merger policy aims at preventing the creation or strengthening of dominant positions through mergers or acquisitions. Such a market power produces competitive harm, which manifests either directly through higher post-merger prices or reduced innovation or, indirectly, through the elimination of competitors, leading ultimately to the same negative results in terms of prices or innovation" making it clear that preserving competition in itself does not constitute the aim of EU competition policy.[37]

Notwithstanding, two remarks shall be made. First, it is true that considerations related to "consumer goodwill",[38] consumers' welfare are of dominant nature in the CJEU's case law as regards all the competition tools, including fight against cartels on the basis of Article 101 TFEU,[39] prohibition of abuse of dominant position by Article

36 PAASMAN 1999.

37 MONTI 2011.

38 HOVENKAMP 2008.

39 KECSMÁR 2020a; Judgements of 2 April 2020, C-228/18, *Budapest Bank and Others,* EU:C:2020:265, paragraph 36: "[…] certain collusive behaviour, such as that leading to horizontal price-fixing by cartels, may be considered so likely to have negative effects, in particular on the price, quantity or quality of the goods and services, that it may be considered redundant, for the purposes of applying Article 101(1) TFEU, to prove that it has actual effects on the market. Experience shows that such behaviour leads to falls in production and price increases, resulting in poor allocation of resources to the detriment, in particular, of consumers"; 11 September 2014, C-67/13 P, *CB v Commission,* EU:C:2014:2204, paragraphs 51, 73.

102 TFEU,[40] merger control[41] and even[42] State aid.[43] Nevertheless, protection of competition itself as a "l'art pour l'art" approach can be adopted by the Court in some circumstances. This is done regardless of the fact whether the given measure constitutes a concrete negative impact on the interests of consumers, certainly in a case of application of Article 106(1) TFEU in conjunction with Article 102 TFEU.[44] Second, the notion of consumer welfare has a broad meaning in Union law including "among other things, price, choice, quality or innovation".[45]

It is also constant that EU Competition law applies exclusively to undertakings.[46] Undertakings are any entity engaged in an economic activity, regardless of their legal status and the way in which they are financed,[47] and any activity consisting of offering goods and services on a given market constitutes an economic activity.[48] That is, services normally provided for remuneration, is an economic activity. The essential characteristic of remuneration lies in the fact that it is consideration for the service in

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40 Kecsmár–Keidel 2015; Tóth 2018; Judgement of 6 September 2017, C-413/14 P, *Intel v Commission,* EU:C:2017:632, paragraph 134: "[…] not every exclusionary effect is necessarily detrimental to competition. Competition on the merits may, by definition, lead to the departure from the market or the marginalisation of competitors that are less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation"; Judgements of 17 February 2011, C-52/09, *TeliaSonera Sverige,* EU:C:2011:83, paragraphs 22, 24; 27 March 2012, C-209/10, *Post Danmark,* EU:C:2012:172, paragraph 20; 12 May 2022, C-377/20, *Servizio Elettrico Nazionale and Others,* EU:C:2022:379, paragraphs 41, 44: "The purpose of Article 102 TFEU is to prevent competition from being restricted to the detriment of the public interest, individual undertakings and consumers, by sanctioning the conduct of undertakings in a dominant position that has the effect of hindering competition on the merits and is thus likely to cause direct harm to consumers, or which causes them harm indirectly by hindering or distorting that competition."

41 Judgements of 10 July 2008, C-413/06 P, *Bertelsmann and Sony Corporation of America v Impala,* EU:C:2008:392, paragraphs 120, 122; 13 July 2023, C-376/20 P, *Commission v CK Telecoms UK Investments,* EU:C:2023:561, paragraphs 2, 3, 12, 31, 32, 34, 225, 258; 13 July 2022, T-227/21, *Illumina v Commission,* EU:T:2022:447, paragraph 33: "[P]rima facie, the potential impact of the concentration at issue on competition in the internal market and on European consumers is significant"; 7 March 2017, T-194/13, *United Parcel Service v Commission,* EU:T:2017:144, paragraph 77; 9 March 2015, T-175/12, *Deutsche Börse v Commission,* EU:T:2015:148, paragraphs 236, 238, 262, 268, 269, 270; 3 September 2024, *Illumina v Commission,* C-611/22 P, EU:C:2024:677, paragraph 216: "Even if the effectiveness of the thresholds determining competence on the basis of turnover provided for in Regulation No 139/2004 were to prove insufficient to scrutinise some transactions capable of significantly affecting competition, it is for the EU legislature alone to review those thresholds or to provide for a safeguard mechanism enabling the Commission to scrutinise such a transaction."

42 Cseres–Reyna 2021: 620: "[A] crucial difference to other areas of competition policy is that in State aid law total welfare does not only include the sum of producer and consumer surplus but also the costs of state measures to taxpayers."

43 Cseres–Reyna 2021; Judgement of 15 June 1993, C-225/91, *Matra v Commission,* EU:C:1993:239, paragraphs 41–42.

44 Judgement of 17 July 2014, C-553/12 P, *Commission v DEI,* EU:C:2014:2083, paragraphs 33, 43, 68.

45 Judgements of 10 November 2021, T-612/17, *Google and Alphabet v Commission (Google Shopping),* EU:T:2021:763, paragraph 157; 15 June 2022, T-235/18, *Qualcomm v Commission,* EU:T:2022:358, paragraph 351; 27 March 2012, C-209/10, *Post Danmark,* EU:C:2012:172, paragraph 22; 6 September 2017, C-413/14 P, *Intel* v *Commission,* EU:C:2017:632, paragraph 134; 12 May 2022, C-377/20, *Servizio Elettrico Nazionale and Others,* EU:C:2022:379, paragraph 45.

46 Kecsmár 2018b.

47 Judgement of 12 September 2000, C-180/98, *Pavlov a. o.,* EU:C:2000:428, paragraph 74.

48 Judgement of 19 February 2002, C-309/99, *Wouters and Others,* EU:C:2002:98, paragraph 47.

question.[49] Also, under Article 57 TFEU, services normally provided for remuneration, including activities of a commercial character, are considered to be 'services' within the meaning of the Treaties[50] and Article 57 TFEU fulfils the objective of liberalising "all gainful activity".[51] However, it is not necessary that the service be paid for, by those for whom it is performed.[52] Nevertheless, the Treaty rules on competition do not apply to an activity, which, by its nature, its aim and the rules to which it is subject, does not belong to the sphere of economic activity, or which is connected with the exercise of the powers of a public authority. A professional body is neither fulfilling a social function based on the principle of solidarity, unlike certain social security bodies, nor exercising powers that are typically those of a public authority. It indeed acts as the regulatory body of a profession, the practice of which constitutes an economic activity.[53]

These prior considerations were necessary to the apprehension of the subject of interaction of internalisation of exogenous values within the assessment of issues related to EU Competition Policy.

Exogenous values adopted in EU competition law with regard to data protection

What does interaction of internalisation of exogenous values mean?

Interaction of competition, consumer and data protection laws via the Meta Platforms CJEU case

Interaction

Such an interaction may be governed by at least two different dynamics, one based on the transfer of concepts and principles over from one area of law into the other.

One possible technique consists, indeed, in borrowing the concepts of another area of law to interpret the rules of the area of law it is empowered to enforce, or that constitute the primary legal basis for adjudication. Alternatively, another technique consists in relying on the existence of different legal bases for each of these areas to initiate an enforcement action, or adjudicate upon.[54]

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49 Judgements of 6 November 2018, C-622/16 P, *Scuola Elementare Maria Montessori v Commission,* EU:C:2018:873, paragraph 104; 11 September 2007, *Schwarz and Gootjes-Schwarz,* C-76/05, EU:C:2007:492, paragraphs 37, 38.

50 Judgement of 23 February 2016, C-179/14, *Commission v Hungary,* EU:C:2016:108, paragraph 151.

51 Judgement of 31 January 1984, C-286/82, *Luisi and Carbone v Ministero dello Tesoro,* EU:C:1984:35, paragraph 10.

52 Judgement of 11 April 2000, C-51/96 and C-191/97, *Deliège,* EU:C:2000:199, paragraph 56.

53 Judgement of 19 February 2002, C-309/99, *Wouters and Others,* EU:C:2002:98, paragraphs 57–58.

54 NEBBIA 2023.

With regard to the first scenario, one must mention that such technique was recently applied by the CJEU in its judgement of 4 July 2023 in the *Meta Platforms Case.*

Prior to shortly analysing the added value of this case law, what can one understand under the interaction of competition, consumer and data protection laws?

Interaction of competition, consumer and data protection laws

Consumer and competition laws have long been considered complementary instruments to ensure consumer welfare.

Consumer law addresses market failures affecting consumers' subjective ability to choose, which are "internal" to them, in the sense that they prevent them from effectively choosing among the available options. Consumer law seeks to ensure that consumers' critical faculties remain unimpaired by preventing the adoption, by traders, of unfair commercial practices capable of distorting consumers' choices.

Competition law, on the other hand, and as already pointed out, ensures that the market place remains competitive, so that a meaningful range of options remains open to consumers, unimpaired by restrictive practices such as, for example, price-fixing agreements. It addresses market failures that are "external" to the consumer, and lead to an objective inability of the market to provide sufficient options to the consumer.

In a sense, Consumer law addresses distortions at the level of demand, while competition law addresses distortions at the level of the offer. In a way, they represent two sides of the same coin.

Compared to these, the orbit of data protection law is slightly eccentric. EU *data protection law* aims to safeguard the fundamental right to data protection, giving data subjects control over their personal data and by setting limits on the collection and use of personal data. Such protection is ensured at the EU level via Article 8(2) of the Charter of Fundamental Rights (hereinafter "the Charter") but also Article 16 TFEU, introduced in the Lisbon Treaty.

It is undeniable that we are currently witnessing an expansive interpretation of the notion of personal data. In particular, the identifiability threshold is perceived as very low; at the same time, the ways in which the information can be said to be relating to a natural person are manifold. The combination of these two aspects leads to an extremely wide material scope for EU data protection legislation.[55]

All these elements underlie the *Meta Platforms Case.*

The Meta Platforms Case

This "historical"[56] preliminary ruling case essentially concerned, inter alia, the competence of a national competition authority (hereinafter "NCA") such as the German Federal Cartel Office (Bundeskartellamt) to examine the conduct of an undertaking

[55] Nebbia 2023.

[56] Giovannini 2023.

under Article 102 TFEU in the light of certain provisions of the GDPR – Regulation (EU) 2016/679, commonly known as the General Data Protection Regulation.

More specifically, the German Federal Cartel Office (Bundeskartellamt) initiated proceedings against Meta Platforms, as a result of which it prohibited them from processing data as provided for in the terms of service of Facebook, and from implementing those terms, imposing measures to prevent Meta from doing so. The NCA in question based its decision on a domestic data protection legal provision to state that the processing in question constituted an abuse of the undertaking's dominant position in the social media market for private users in Germany.

In its opinion of 22 September 2022, AG Rantos took the position that, although an NCA is not competent to establish a breach of the GDPR, the latter, does not, in principle, preclude authorities other than the supervisory authorities, when exercising their own powers, from being able to take account, as an "incidental"[57] question to the enforcement of the prohibition of Article 102 TFEU, of the compatibility of conduct with the provisions of the GDPR.[58] In fact, the examination of the abusive nature of a dominant undertaking's practice pursuant to Article 102 TFEU must be carried out by taking into consideration all the specific circumstances of the case.[59]

Confirming the incidental nature of the findings by a national authority, the judgement of 4 July 2023 marks also by its spectacular way of imposing cooperation among the different national competent authorities, deriving from Article 4(3) TEU and the principle of "sincere cooperation".

The CJEU states in it[60] that, in the context of the examination of an abuse of a dominant position by an undertaking, it may be necessary for the Member State's NCA to "also" examine whether that undertaking's conduct complies with rules other than those relating to competition law. This may include rules laid down by the GDPR, since the compliance or non-compliance of that conduct with the provisions of the GDPR may, depending on the circumstances, be a vital clue among the relevant circumstances of the case to establish whether that conduct entails resorting to methods governing standard competition and to assess the consequences of a certain practice in the market or for consumers.[61] However, where the NCA identifies an infringement of the GDPR, it does

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57 MARTÍNEZ 2022: "'Incidental analysis of the GDPR' qualified as 'artificial construction on the primary and incidental analysis of the protection of personal data in competition law proceedings'."

58 Rantos Meta Platforms 2022, paragraph 33.

59 Judgement of 25 March 2021, *Deutsche Telekom v Commission,* C-152/19 P, ECLI:EU:C:2021:238, paragraph 42.

60 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 36: "By Questions 1 and 7, which it is appropriate to examine together, the referring court asks, in essence, whether Article 51 et seq. of the GDPR must be interpreted as meaning that a competition authority of a Member State can find, in the context of the examination of an abuse of a dominant position by an undertaking within the meaning of Article 102 TFEU, that that undertaking's general terms of use relating to the processing of personal data and the implementation thereof are not consistent with the GDPR, and if so, whether Article 4(3) TEU must be interpreted as meaning that such a finding, of an incidental nature, by the competition authority is also possible where those terms are being investigated, simultaneously, by the competent lead supervisory authority in accordance with Article 56(1) of the GDPR."

61 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 47, 48.

not replace the supervisory authorities established by that regulation. The sole purpose of such assessment is merely to establish an abuse of a dominant position and impose measures to put an end to that abuse on a legal basis derived from competition law.[62]

Indeed, access to and use of personal data are of great importance in the context of the digital economy. Further, such access and the fact that it is possible to process this data have become a significant parameter of competition between undertakings in the digital economy.[63] Therefore, goes on the Court, when they apply the GDPR, the various national authorities involved are all bound by the duty of "sincere cooperation" enshrined in Article 4(3) TEU.[64] Such sincere cooperation deriving from EU law between Members States and Union institutions[65] results in an obligation of cooperation between national authorities.[66]

When, in the context of the examination, seeking to establish whether there is an abuse of a dominant position within the meaning of Article 102 TFEU by an undertaking, an NCA takes the view that it is necessary to examine whether that undertaking's conduct is consistent with the provisions of the GDPR, that authority must ascertain whether that conduct or a similar conduct has already been the subject of a decision by the competent national supervisory authority or the lead supervisory authority or the Court. If that is the case, the NCA cannot depart from it, although "it remains free to draw its own conclusions from the point of view of the application of competition law".[67] Indeed, it is true that the illegality of abusive conduct under Article 82 EC is unrelated to its compliance or non-compliance with other legal rules and, in the majority of cases, abuses of dominant positions consist of behaviours which are otherwise lawful under branches of law other than competition law.[68]

It follows that an NCA can find, in the context of examining an abuse of a dominant position by an undertaking within the meaning of Article 102 TFEU, that the undertaking's general terms of use relating to the processing of personal data, and the implementation thereof, are not consistent with the GDPR, where that finding is

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62 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 49.

63 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraphs 50, 51.

64 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 53.

65 Kecsmár 2024.

66 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 54: "In the light of this principle, when national competition authorities are called upon, in the exercise of their powers, to examine whether an undertaking's conduct is consistent with the provisions of the GDPR, they are required to consult and cooperate sincerely with the national supervisory authorities concerned or with the lead supervisory authority, all of which are then bound, in that context, to observe their respective powers and competences, in such a way as to ensure that the obligations arising from the GDPR and the objectives of that regulation are complied with while their effectiveness is safeguarded."

67 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 56.

68 Judgement of 6 December 2012, *AstraZeneca v Commisson,* C-457/10 P, ECLI:EU:C:2012:770, paragraph 132.

necessary to establish the existence of such an abuse.[69] Nevertheless, the NCA cannot depart from a decision by the competent national supervisory authority or the competent lead supervisory authority, concerning those general terms or similar general terms.[70]

Data protection, as pointed out, is enshrined in the Charter. Therefore, recourse to it as an external value taken into account within competition law analysis does not cause uproar.[71] Is it also the case concerning Article 165 TFEU?

The Superleague, International Skating Union and Royal Antwerp Cases in light of Article 165 TFEU and the 'European Sports Model' concept

All three cases are related to the power of international sport governance bodies (SGBs) in light of Union law.

Factual backgrounds

The International Skating Union Case

On 23 June 2014, the Commission received a complaint filed by two Dutch professional speed skating athletes, namely Mr. Jan Hendrik Tuitert and Mr. Niels Kerstholt. In their complaint, they put forward that the rules of the International Skating Union (hereinafter "ISU") banning skaters who participate in unauthorised events – i.e. events organised without the approval of the ISU – violate Articles 101 and 102 TFEU. Their complaint followed the ISU preventing Icederby – a Korean private company – to organise international speed skating events in Dubai in 2011 and 2014. The block was defended on integrity grounds as Icederby planned to offer betting services.[72]

Indeed, skaters affiliated to national federations that are members of the ISU are subject, under the statutes of the ISU, to a pre-authorisation system, which includes 'eligibility rules'. By virtue of those rules, in the version applicable to that period, the participation of a skater in an unauthorised competition exposed him or her to a penalty of a lifetime ban from any competition organised by ISU.[73]

On 8 December 2017, the Commission adopted Decision C(2017) 8230 final relating to proceedings under Article 101 TFEU and Article 53 of the EEA Agreement[74] (Case AT.

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69 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 62.

70 Judgement of 4 July 2023, C-252/21, *Meta Platforms and Others (Conditions générales d'utilisation d'un réseau social),* EU:C:2023:537, paragraph 63.

71 GIOVANNINI 2023.

72 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraphs 20, 50, 80, 100; Rantos ISU 2022, paragraph 15; MELI–TROCH 2020.

73 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraph 6.

74 Agreement on the European Economic Area, OJ L 1, 3.1.1994, 3–36.

40208 – International Skating Union's Eligibility rules), which relates both to the ISU rules adopted during 2014, and to those resulting from the revision which was carried out in 2016.[75]

The Commission considered that the eligibility rules of the ISU were incompatible with EU competition rules (Article 101 TFEU), in so far as their object was to restrict the possibilities for professional speed skaters to take part freely in international events organised by third parties. Consequently, they deprived those third parties of the services of athletes necessary in order to organise those competitions. Thus, the Commission, ordered the ISU, subject to a periodic penalty payment, to put an end to the infringement found, without, however, imposing a fine on it.[76]

The ISU brought an action against the contested decision before the General Court of the European Union on 19 February 2018.[77]

In its Judgement of 16 December 2020, the General Court found that the Commission was right to conclude that the eligibility rules have as their object the restriction of competition within the meaning of Article 101 TFEU. Indeed, the Judgement endorsed the Commission's conclusion that the rules of the ISU banning athletes for participation in unauthorised events organised by third parties constituted a "by object" infringement of Article 101 TFEU.[78] Indeed, "severity may dissuade athletes from participating in events not authorised by the ISU, even where there are no legitimate objectives that can justify such a refusal, and, consequently, is likely to prevent market access to potential competitors who are deprived of the participation of athletes that is necessary in order to organise their sporting event".[79]

The Judgement explicitly recognised therefore that authorisation rules for events organised by third parties – and an associated ban for participation in unauthorised events – may be legal if they "pursue legitimate objectives" and their restrictive effects on competition are "inherent" to the pursuit of those objectives and "proportional". However, *in casu,* the General Court ruled that the sanction to ban included in the eligibility rules of the ISU was "disproportionate".[80] As a matter of fact, the General Court made clear in its Judgement that "[i]t is true that, as is apparent from paragraph 10 above, in 2016, the system of penalties was relaxed in so far as it no longer provides for a single penalty of a lifetime ban for all infringements. [H]owever, it must be noted that the average length of a skater's career is eight years – a fact that the applicant moreover does not dispute. It must therefore be held that the penalties set out in the 2016 eligibility

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75 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraph 28; Rantos ISU 2022, paragraph 18.

76 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraphs 29–37; Rantos ISU 2022, paragraphs 19–25.

77 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraph 38; Rantos ISU 2022, 27.

78 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraphs 62, 121 or 121; Rantos ISU 2022, paragraph 15; Meli–Troch 2020.

79 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraph 95.

80 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraphs 10, 93; Rantos ISU 2022, paragraphs 90, 91; Meli–Troch 2020.

rules, even those with a fixed time limit of 5 to 10 years continue to be disproportionate in so far as they apply, inter alia, to participation in unauthorised third-party events".[81]

In addition, the General Court referred to Article 165 TFEU, and the applicable case law in its Judgement of 16 December 2020.[82]

By its appeal brought on 26 February 2021, the ISU asked, in substance, the CJEU to set aside the Judgement of 16 December 2020 and to annul the underlying Commission decision of 8 December 2017 bearing the case number C-124/21 P – *International Skating Union v Commission*.[83]

The Superleague Case

On Sunday 18 April 2021, six English football clubs, three Spanish teams and three Italian teams, announced that they would start a new football competition, called the "European Super League" (hereinafter the "ESL") under the aegis of the European Superleague Company (hereinafter the "ESLC"). It was described as "a company seeking to organise and market a new European football competition that would be an alternative or competitor to those organised and marketed to date" by the Fédération Internationale de Football Association (hereinafter "FIFA") and the Union of European Football Associations (hereinafter "UEFA"). This would consist of 20 clubs, with 15 of them permanently part of the competition and five additional clubs able to qualify annually. The purpose of the new competition was "improving the quality and intensity of existing European competitions throughout each season, and of creating a format for top clubs and players to compete on a regular basis".[84]

The two federations were quick to dismiss the proposed "breakaway" competition and, in the days following the announcement, many other clubs, football fans and politicians said they were against this idea as well.[85] In addition, public statements were made by FIFA and UEFA, making clear of their refusal to authorise that new competition and warning that any player or club participating in it would be expelled from the competitions organised by FIFA and UEFA.[86]

These threats of sanctions or warnings triggered the preliminary ruling of 27 May 2021 by the Juzgado de lo Mercantil n.º 17 de Madrid (Commercial Court, Madrid, Spain) in proceedings between, on the one hand, the FIFA and the UEFA and, on the other, ESLC, based on Article 267 TFEU.[87]

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81 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraph 93.

82 Judgement of 16 December 2020, T-93/18, *International Skating Union v Commission,* EU:T:2020:610, paragraphs 78, 79, the latter making reference to paragraph 40 of the Judgement of 16 March 2010, C-325/08, *Olympique Lyonnais,* EU:C:2010:143.

83 Rantos ISU 2022, paragraph 29; OJ C 163, 3.5.2021, 19–21.

84 Rantos Superleague 2022, paragraphs 2, 3; BLOCKX et al. 2022.

85 BLOCKX et al. 2022.

86 Rantos Superleague 2022, paragraph 3.

87 Rantos Superleague 2022, paragraphs 3, 18; OJ C 382, 20.9.2021, 10–11.

In essence, the Madrilène jurisdiction at the origin of the preliminary ruling in question sought the Court's wisdom on whether the said threats of sanctions or warnings were compatible with Articles 101 and 102 TFEU. By its questions submitted for a preliminary ruling, the referring court indeed asked the Court to give a ruling on the following points: firstly, on the compatibility with the rules of competition and, secondarily, with the fundamental economic freedoms guaranteed by TFEU. Such compatibility concerned a series of rules adopted by FIFA and UEFA, in their capacity as federations governing all aspects of football at the world and European levels, and concerning the organisation and the marketing of football competitions in Europe.[88]

The Royal Antwerp Case

Almost thirty years after the *Bosman Judgement,*[89] the *Royal Antwerp Case* is once again related to transfer rules of professional football players in the EU.

Jean-Marc Bosman, a Belgian former professional footballer who used to play as a midfielder in FC Liège (hereinafter "Royal club liégeois SA" or "RCL"), challenged the latter opposing to his transfer to the then second division French football club Dunkerque in the absence of the payment by Dunkerque of an important one-off fee. Bosman originally brought an action against this decision before the Belgian judiciary. There, the Cour d'Appel (Appeal Court) of Liège referred to the Court for a preliminary ruling on the basis of Article 177 of the EEC Treaty (Article 267 TFEU), a question on the interpretation of Articles 48, 85 and 86 of the EEC Treaty (Articles 45, 101 and 102 TFEU) in relation to the rules governing transfers of professional players in the EU. In essence, the Court held, having only analysed the question in respect of Article 45 TFEU, that football players should be free to move following their contracts having expired, and that clubs within the European Union could take any number of players of nationals of other Member States, and therefore UEFA quotas linked to nationality with regard to nationals of Member States were contrary to EU law.[90]

In the *Royal Antwerp Case,* the factual background is indeed certainly different but nevertheless retains some similarities with the *Bosman Case*.

On 2 February 2005, the UEFA Executive Committee adopted rules requiring professional football clubs taking part in the interclub competitions of the UEFA to enter a maximum number of 25 players on the "squad size limit list", which, in turn must include a minimum number of 'home-grown-players' (hereinafter "HGP" or "HGPs"). Such players are defined by UEFA as players who, regardless of their nationality, have been trained by their club or by another club in the same national association for at least three years between the ages of 15 and 21. On 21 April 2005, the HGP rule was approved by the 52 member associations of the UEFA, including the Royal Belgian Football Association

88 Rantos Superleague 2022, paragraphs 18, 25.

89 Judgement of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463.

90 Judgement of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraphs 1, 2, 26, 27, 30, 31, 34, 35, 40, 46, 114, 137, 138.

(hereinafter the "URBSFA"), at the Tallinn Congress. Since the 2008–2009 season, the UEFA regulation has required clubs registered for one of its competitions to include a minimum of 8 home-grown players in a list of maximum 25 players. Out of those eight players, at least four must have been trained by the club in question.[91]

UL is a football player, born in 1986, who holds the nationality of a third country as well as Belgian nationality. He has been professionally active in Belgium for many years. He played for Royal Antwerp, a professional football club based in Belgium, for several years and is now playing for another professional football club in Belgium. On 13 February 2020, he brought an action before the Cour belge d'arbitrage pour le sport (Belgian Court of Arbitration for Sport) seeking, inter alia, a declaration that the HGP rules put in place by UEFA and the URBSFA were unlawful on the ground that they infringed Article 45 TFEU and related compensation for the damage caused to UL. Royal Antwerp subsequently voluntarily intervened in the proceedings, also seeking compensation for the damage caused by those rules. UEFA was not a party to the arbitration proceedings. By an arbitration award made on 10 July 2020, the Belgian Court of Arbitration for Sport partly dismissed the action as inadmissible, partly rejecting the claims put forward by UL. On 1 September 2020, UL and Royal Antwerp brought an action before the Tribunal de première instance francophone de Bruxelles (Brussels Court of First Instance [French-speaking]) for the annulment of the arbitration award on the ground that it was contrary to public policy, in accordance with Article 1717 of the Belgian Judicial Code. In November 2021, FIFA intervened in this proceeding.[92]

By order of 15 October 2021, received at the Court on 11 November 2021, the Tribunal de première instance francophone de Bruxelles (Brussels Court of First Instance [French-speaking]) sought the guidance of the CJEU on the compatibility with Union law, of the HGP rules of UEFA in respect of Article 101 TFEU and of the URBSFA with regard to Articles 45 and 101 TFEU.[93]

Taking into account the fact that "various parties to the proceedings resort to Article 165 TFEU throughout their submissions", the *Royal Antwerp Case* also raises the question of its degree of applicability.[94]

Before making known the Opinions of Advocates General in the *ISU, Superleague* and *Royal Antwerp Cases,* it is useful to analyse the case law of the CJEU in the field of sport and Article 165 TFEU.

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91 Szpunar Royal Antwerp, paragraphs 1, 2, 7.

92 Szpunar Royal Antwerp, paragraphs 4, 11, 12–14, 15, 17.

93 Szpunar Royal Antwerp, paragraphs 20, 22. Indeed, the referring Court referred the following questions to the CJEU for a preliminary ruling seeking to reply to the questions, (1) whether Article 101 TFEU is to be interpreted as precluding the plan relating to "HGPs" adopted on 2 February 2005 by the Executive Committee of UEFA, approved by the 52 member associations of UEFA at the Tallinn Congress on 21 April 2005 and implemented by means of regulations adopted both by UEFA and by its member federations and whether Articles 45 and 101 TFEU are to be interpreted as precluding the application of the rules on the inclusion on the match sheet and the fielding of locally trained players, as formalised by Articles P335.11 and P.1422 of the federal regulation of URBSFA and reproduced in Articles B4.1[12] of Title 4 and B6.109 of Title 6 of the new URBSFA regulation.

94 Szpunar Royal Antwerp, paragraphs 48, 55.

Sport, sporting activities and the 'European Sports Model' concept under Article 165 TFEU and in the case law of the CJEU prior to 2023

Article 165 TFEU

According to AG Rantos, the wording of Article 165 TFEU crystallised the conclusions of a series of initiatives that had been taken by the EU institutions, from the 1990s onwards, following the judgements delivered by the Court – and in particular, the Judgement in the *Bosman Case* – in the context of establishing a European sports policy. Thus, the groundwork for the recognition of the specific nature of sport was laid by a joint declaration on sport annexed to the Treaty of Amsterdam, followed by the Commission report,[95] which recognised the "specific nature of sport" in particular in the context of the application of competition law.[96] On the basis of that report, the Nice European Council issued a declaration, marking a further step in the recognition of the specific nature of sport by requiring the Community, in its action under the various Treaty provisions, to take account of the social, educational and cultural functions inherent in sport, in order to preserve its social role.[97] That initiative was followed, in the course of 2007, by the Commission's White Paper on Sport,[98] the final stage before the insertion of Article 165 TFEU into the Treaty of Lisbon in 2009.[99]

Article 165 TFEU deals with three distinct, yet interrelated issues: education, youth and sport and is structured into four paragraphs.

Paragraph 1 sets out the general aim and rationale of the provision, which is that the Union is to contribute to the promotion of European sporting issues, while taking account of the "specific nature of sport", its structures based on voluntary activity and its social and educational function.

Paragraph 2 then specifies what precisely Union action is aimed at, with which it is impossible to disagree: developing the European dimension in sport, by promoting fairness and openness in sporting competitions, cooperation between bodies responsible for sports, and by protecting the physical and moral integrity of sportsmen and sportswomen, especially the youngest.

Paragraph 3 stresses the importance of fostering cooperation with third countries and international organisations, in particular with the Council of Europe.

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95 Declaration No. 29 on sport, 2 October 1997 (OJ 1997 C 340, 136).

96 Report from the Commission to the European Council with a view to safeguarding current sports structures and maintaining the social function of sport within the Community framework of 10 December 1999 (The Helsinki Report on Sport) [COM(1999) 644 final], 4.2.1.: "[T]he application of the Treaty's competition rules to the sporting sector must take account of the specific characteristics of sport, especially the interdependence between sporting activity and the economic activity that it generates, the principle of equal opportunities and the uncertainty of the results."

97 Nice European Council, 7–9 December 2000, Conclusions of the Presidency, Annex IV: Declaration on the specific characteristics of sport and its social function in Europe, of which account should be taken in implementing common policies, paragraph 1.

98 White Paper on Sport, 11 July 2007 [COM(2007) 391 final].

99 Rantos Superleague 2022, paragraph 29.

Finally, *Paragraph 4* allows the political institutions of the Union "in accordance with the ordinary legislative procedure" to "adopt incentive measures, excluding any harmonisation" and the Council (alone), on a proposal from the Commission, to adopt recommendations.[100]

The Court's case law on sport, sporting activities and the 'European Sports Model' concept under Article 165 prior to 2023

Sport, in general, has been considered for a long time by the Court to be of "specific characteristics" and to constitute an activity falling under the EU law in some circumstances.[101]

Indeed, sport has a "considerable social importance" in the Union[102] and sport is subject to EU law, and in particular to the provisions of the Treaty related to the economic law of the European Union, to the extent that it constitutes an economic activity.[103]

Indeed, having regard to the objectives of the Community, sport is subject to Community law only in so far as it constitutes an economic activity.[104] This is the case as regards the activities of professional or semi-professional footballers, where they are in gainful employment or provide a remunerated service.[105] Therefore, where a sporting activity takes the form of gainful employment or the provision of services for remuneration, which is true of the activities of semi-professional or professional sportsmen, it falls, more specifically, within the scope of Article 45 TFEU or Article 56 TFEU.[106]

It is also constant case law with regard to the notion of economic activity in the field of "sporting activities" that it is not necessary that the service be paid for by those for whom it is performed. The Court explained in this respect that an organiser of an international competition involving a high-ranking athlete's participation "may offer athletes an opportunity of engaging in their sporting activity in competition with others and, at the same time, the athletes, by participating in the competition, enable the organiser to put on a sports event which the public may attend, which television

100 Szpunar Royal Antwerp 2023, paragraph 49.

101 Judgements of 12 December 1974, C-36/74, *Walrave and Koch,* EU:C:1974:140, paragraph 8; 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 73; 16 March 2010, C-325/08, *Olympique Lyonnais,* EU:C:2010:143, paragraph 40.

102 Rantos Superleague, paragraph 28; Judgements of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 106; 13 April 2000, *Lehtonen and Castors Braine,* C-176/96, EU:C:2000:201, paragraph 32.

103 Rantos Superleague, paragraph 39.

104 Judgements of 12 December 1974, C-36/74, *Walrave and Koch,* EU:C:1974:140, paragraph 8; 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 73; 25 April 2013, C-81/12, *Asociația Accept,* EU:C:2013:275, paragraph 45.

105 Judgements of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 73; 16 March 2010, C-325/08, *Olympique Lyonnais,* EU:C:2010:143, paragraphs 27, 28.

106 Judgement of 18 July 2006, C-519/04 P, *Meca-Medina and Majcen v Commission,* EU:C:2006:492, paragraph 23.

broadcasters may retransmit and which may be of interest to advertisers and sponsors. Moreover, the athletes provide their sponsors with publicity the basis for which is the sporting activity itself".[107]

The Court has also already held that, in considering whether a system which restricts the freedom of movement of such players is suitable to ensure that the "objective of encouraging the recruitment and training of young players"[108] is attained, and does not go beyond what is necessary to attain it, the sport's "specific characteristics" in general, and football in particular, and of their social and educational function must be taken into account. The relevance of those factors is also corroborated by their mention in the second subparagraph of Article 165(1) TFEU.[109]

In fact, the Court has previously recognised the considerable social importance of sport in the European Union, in particular amateur sport, as reflected in Article 165 TFEU, and the role of that sport as a factor for integration into the society of the host Member State.[110]

Indeed, the Court held that Article 165 TFEU reflects the considerable social importance of sport in the European Union, in particular amateur sport, as highlighted in Declaration No. 29 on sport annexed to the Final Act of the conference which adopted the text of the Treaty of Amsterdam, and the role of sport as a factor for integration in the society of the host Member State.[111]

Opinions of Advocates General in the Superleague, International Skating Union and Royal Antwerp Cases with focus on the provisions of Article 165 TFEU

Opinions of Advocate General Rantos of 15 December 2022 in Superleague and ISU Cases

Article 165 TFEU played a central role in the Opinion of AG Rantos.[112] Indeed, AG Rantos strongly advocates for taking into account the "specific nature" of sport,[113] and takes the view that Article 165 TFEU reflects the "constitutional recognition" of the "European

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107 Judgement of 11 April 2000, C-51/96 and C-191/97, *Deliège,* EU:C:2000:199, paragraphs 56, 57.

108 Judgement of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 106: "[I]n view of the considerable social importance of sporting activities and in particular football in the Community, the aims of maintaining a balance between clubs by preserving a certain degree of equality and uncertainty as to results and of encouraging the recruitment and training of young players must be accepted as legitimate."

109 Judgement of 16 March 2010, C-325/08, *Olympique Lyonnais,* EU:C:2010:143, paragraphs 39, 40.

110 Kecsmár 2020b; Judgements of 18 December 2019, C-447/18, *Generálny riaditeľ Sociálnej poisťovne Bratislava,* EU:C:2019:1098, paragraph 52; 13 June 2019, C-22/18, *TopFit and Biffi,* EU:C:2019:497, paragraph 33.

111 Judgements of 13 June 2019, C-22/18, *TopFit and Biffi,* EU:C:2019:497, paragraph 33; 13 April 2000, *Lehtonen and Castors Braine,* C-176/96, EU:C:2000:201, paragraph 33.

112 Da Cruz Vilaça – Martins Pereira 2024.

113 Rantos Superleague 2022, paragraphs 28, 29, 39, 42, 67, 91, 93, 117, 123, 144, 169, 187.

Sports Model", being based, first, on *a pyramid structure* with, at its base, amateur sport and, at its summit, professional sport.[114] However, sport constitutes a "significant economic activity" marked by an important "special social character",[115] making sporting activities including the "activities of sports federations" clearly subject to competition law.[116] Nevertheless, the references to that specific nature and to the social and educational function of sport, which appear in Article 165 TFEU, may be relevant for the purposes, inter alia, of analysing, in the field of sport, any objective justification for restrictions on competition or on fundamental freedoms.[117] In essence, as a result of such analysis, AG Rantos considers that the FIFA–UEFA rules under which any new competition is subject to prior approval are compatible with EU competition law.[118] He also proposes to set aside the General Court's Judgement of 16 December 2020 in the *ISU Case*.[119]

Opinion of Advocate General Szpunar of 9 March 2023 in Royal Antwerp Case

AG Szpunar has a more conservative approach as for the importance of Article 165 TFEU underlying only once the "specific nature of sport" in his Opinion.[120] He puts emphasis on the clear lack of possibility, deriving from Article 165, paragraph 4, TFEU, for the "political institutions of the Union" ("the Commission, the Council and the Parliament") to adopt harmonisation acts on the basis of Article 165 TFEU. He further added that "[a]dmittedly, it takes some time to get one's head around this provision which, in Orwellian-like fashion, allows the political institutions to resort to the ordinary legislative procedure in order to adopt [...] anything but legislation".[121] Without denying the legal value of Article 165 TFEU, he believes that this provision is helpful in two respects: first, to identify a ground of justification for a restriction of Article 45 TFEU, known as an overriding reason in the public interest, and secondly, as an indication of what is acceptable in and throughout the Union when it comes to carrying out the proportionality test. This is, moreover, exactly what the Court has done in the past in the field of education in his view.[122] Therefore, he rejoins AG Rantos on this and considers, in essence, that Article 165 TFEU is indeed relevant and useful in the analysis of objective justification for restrictions on competition or on the fundamental freedoms without, however, allowing "private bodies exercising economic functions" such as UEFA to implement Union action

114 Rantos Superleague 2022, paragraph 30; AGAFONOVA 2024.
115 Rantos Superleague 2022, paragraph 34.
116 Rantos Superleague 2022, paragraph 90.
117 Rantos Superleague 2022, paragraph 42.
118 Rantos Superleague 2022, paragraph 187.
119 Rantos ISU 2022, paragraph 170.
120 Szpunar Royal Antwerp 2023, paragraph 49.
121 Szpunar Royal Antwerp 2023, paragraph 49.
122 Szpunar Royal Antwerp 2023, paragraph 55.

under Article 165 TFEU.[123] As a result, AG Szpunar considers that the UEFA rules on home-grown players are partially incompatible with EU law.[124]

Judgements of the Court of 21 December 2023 in the Superleague, International Skating Union and Royal Antwerp Cases

Article 165 TFEU

It appears that the Court adopted a rather conservative, dogmatic approach as for Article 165 TFEU when it stated that "nor must Article 165 TFEU be regarded as being a special rule exempting sport from all or some of the other provisions of primary EU law liable to be applied to it or requiring special treatment for sport in the context of that application".

Though let us start with the beginning.

According to the Court, Article 165 TFEU must be construed in the light of Article 6(e) TFEU, which provides that the Union has "competence" to carry out actions to "support", coordinate or supplement the actions of the Member States in the areas of education, vocational training, youth and sport. Article 165 TFEU gives specific expression to that provision by specifying both the "objectives" assigned to Union action in the areas concerned and the means which may be used to contribute to the attainment of those objectives.[125]

Thus, as regards the "objectives" assigned to Union action in the area of sport, the second subparagraph of Article 165(1) TFEU states that the Union is to contribute to the promotion of European sporting issues, while taking into account the "specific characteristics of sport", its structures based on voluntary activity and its "social and educational function". Further, in the last indent of paragraph 2, Union action in that area is to be aimed at developing the European dimension in sport, by promoting fairness and openness in sporting competitions and cooperation between sport governance bodies (SGBs), and by protecting the physical and moral integrity of sportspersons, especially the youngest sportspersons.

As regards the means which may be employed to contribute to the attainment of those objectives, Article 165(3) TFEU provides that the Union is to foster cooperation with third countries and the competent international organisations in the field of sport. Moreover, in Paragraph 4, the European Parliament and the Council of the European Union, acting in accordance with the ordinary legislative procedure, or the Council, acting alone on a proposal from the Commission, may adopt incentive measures or recommendations.

As follows from both the wording of Article 165 TFEU and Article 6(e) TFEU, by those provisions, the drafters of the Treaties intended to confer a "supporting competence"

123 Szpunar Royal Antwerp 2023.

124 Szpunar Royal Antwerp 2023, paragraph 83.

125 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 101.

on the Union, allowing it to pursue not a "policy", as provided for by other provisions of the TFEU, but an "action" in a number of specific areas, including sport. Thus, those provisions constitute a legal basis authorising the Union to exercise that "supporting competence", on the conditions and within the limits fixed thereby. These being, inter alia, as provided for in the first indent of Article 165(4) TFEU, or the exclusion of any harmonisation of the legislative and regulatory provisions adopted at national level. That "supporting competence" also allows the Union to adopt legal acts solely with the aim of supporting, coordinating or completing Member State action, in accordance with Article 6 TFEU.

By way of corollary, and as is also apparent from the context of which Article 165 TFEU forms a part, its insertion in Part Three of the TFEU, devoted to "Union policies and internal actions", and not in Part One, containing provisions of principle, including, under Title II, "provisions having general application". These relate, inter alia, to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against any discrimination, environmental protection and consumer protection, meaning Article 165 TFEU is not a cross-cutting provision having general application.[126]

Nonetheless, the fact remains that, as observed by the Court on numerous occasions, sporting activity carries considerable social and educational importance, henceforth reflected in Article 165 TFEU, for the Union and its citizens.[127]

Sporting activity also undeniably has "specific characteristics" which, whilst relating especially to amateur sport, may also be found in the pursuit of sport as an economic activity.[128]

Such "specific characteristics" "may potentially be taken into account" along with other elements and provided they are relevant in the application of Articles 45 and 101 TFEU, although they may be so only in the context of and in compliance with the conditions and criteria of application provided for in each of those articles. The same assessment holds true in respect of Articles 49, 56, 63 and 102 TFEU.[129]

Therefore, sport is not taken into account as an exception or an exogenous value in the Union competition law in the field of sport on the basis of Article 165 TFEU, since the Court clearly adopted a very moderate, classical interpretation of competition law. Notwithstanding some criticism voiced for not recognising the European sports model as such,[130] the Court, indeed, sharply separated different areas, EU policy and its case law, from each other dogmatically.[131]

Indeed, goes on the Court, when it is argued that a rule adopted by a sporting association constitutes an impediment to the free movement of workers or an anticompetitive

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126 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraphs 96–100.

127 Judgements of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 106; 13 June 2019, C-22/18, *TopFit and Biffi,* EU:C:2019:497, paragraphs 33, 34.

128 Judgement of 13 April 2000, C-176/96, *Lehtonen and Castors Braine,* EU:C:2000:201, paragraph 33.

129 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraphs 96–104.

130 BORJA 2023.

131 ROSIN 2024.

agreement, the characterisation of that rule as an obstacle or anticompetitive agreement must, at any rate, be based on a specific assessment of the content of that rule in the actual context in which it is to be implemented.[132] Such an assessment may involve taking into account, for example, the nature, organisation or functioning of the sport concerned and, more specifically, how professionalised it is, the manner in which it is practised, the manner of interaction between the various participating stakeholders and the role played by the structures and bodies responsible for it at all levels, with which the Union is to foster cooperation, in accordance with Article 165(3) TFEU.[133]

Moreover, once the existence of an obstacle to the free movement of workers is established, the association which adopted the rule in question may yet demonstrate that it is justified, necessary and proportionate in view of certain objectives, which may be regarded as legitimate,[134] which themselves are contingent on the specific characteristics of the sport concerned.[135]

The Court concluded in the *Superleague Case* that 1. Article 102 TFEU must be interpreted as meaning that the adoption and implementation of rules by associations which are responsible for football at world and European levels and which pursue in parallel various economic activities related to the organisation of competitions, making subject to their prior approval the setting up, on European Union territory, of a new interclub football competition by a third-party undertaking, and controlling the participation of professional football clubs and players in such a competition, on pain of sanctions, where there is no framework for those various powers providing for substantive criteria and detailed procedural rules suitable for ensuring that they are transparent, objective, non-discriminatory and proportionate, constitutes abuse of a dominant position[136] that 2. Article 101(1) TFEU must be interpreted as meaning that the adoption and implementation, directly or through their member national football associations, of rules by associations which are responsible for football at world and European levels and which pursue in parallel various economic activities related to the organisation of competitions, making subject to their prior approval the setting up, on European Union territory, of a new interclub football competition by a third-party undertaking, and controlling the participation of professional football clubs and players in such a competition, on pain of sanctions, where there is no framework for those various powers providing for substantive criteria and detailed procedural rules suitable for ensuring that they are transparent, objective, non-discriminatory and proportionate, constitutes a decision

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132 Judgements of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraphs 98–103; 11 April 2000, C-51/96 and C-191/97, *Deliège,* EU:C:2000:199, paragraphs 61–64; 13 April 2000, C-176/96, *Lehtonen and Castors Braine,* EU:C:2000:201, paragraphs 48–50.

133 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 105.

134 Judgement of 15 December 1995, C-415/93, *Union royale belge des sociétés de football association and Others v Bosman and Others,* EU:C:1995:463, paragraph 104.

135 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 106.

136 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 152.

by an association of undertakings having as its object the prevention of competition,[137] that 3. Article 101(3) and Article 102 TFEU must be interpreted as meaning that rules by which associations which are responsible for football at world and European levels and which pursue in parallel various economic activities related to the organisation of competitions make subject to their prior approval the setting up, on European Union territory, of interclub football competitions by a third-party undertaking, and control the participation of professional football clubs and players in such competitions, on pain of sanctions, may benefit from an exemption to the application of Article 101(1) TFEU or be considered justified under Article 102 TFEU only if it is demonstrated, through convincing arguments and evidence, that all of the conditions required for those purposes are satisfied,[138] or 4. that Article 56 TFEU must be interpreted as precluding rules by which associations which are responsible for football at world and European levels and which pursue in parallel various economic activities related to the organisation of competitions make subject to their prior approval the setting up, on European Union territory, of interclub football competitions by a third-party undertaking, and control the participation of professional football clubs and players in such competitions, on pain of sanctions, where there is no framework for those rules providing for substantive criteria and detailed procedural rules suitable for ensuring that they are transparent, objective, non-discriminatory and proportionate.[139]

Similar assessments and conclusions characterise the *ISU* and *Royal Antwerp FC Cases*, as well.

What is next for sport governance bodies (SGBs)?

The scope and the added value of the *Superleague, ISU and Royal Antwerp FC judgements* go far beyond the question of how to take into account Article 165 TFEU in competition law related cases.

To start with, in the *ISU judgement,* the Court took the stance that, in line with the Commission's initial position, the arbitration rules of ISU applied before the Court of Arbitration for Sport (CAS) to deprive skaters, seeking for prior authorisation to participate in events in competition with the own competitions of ISU, of effective access to the courts, by reinforcing the restriction of competition and set aside the General Court's decision in that respect.[140]

Then, as for the question of uniform interpretation of EU law, in particular the competition law and more particularly as for the question of simultaneous application of provisions of Articles 101 and 102 TFEU, the judgement in the *Superleague Case* provides

[137] Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 179.

[138] Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 209.

[139] Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 257.

[140] Judgement of 21 December 2023, C-124/21 P, *International Skating Union v Commission*, EU:C:2023:1012, paragraphs 12, 19, 25, 32, 184–204.

very important learnings in that respect. Indeed, the Court states that the same conduct may give rise to an infringement of both Articles 101 and 102 TFEU, even though they pursue different objectives and have distinct scopes. Those articles may thus apply simultaneously where their respective conditions of application are met. They must, accordingly, be "interpreted and applied consistently", although in compliance with each Article's specific characteristics.[141]

The takeaway is that while both Articles 101 and 102 TFEU can be simultaneously applied, this must be done with respect to each Article's specific characteristics. Indeed, while in paragraph 119 of the judgement in the *Superleague Case,* the Court makes reference to three cases already providing for the possibility of not excluding the simultaneous application of the said TFEU provisions,[142] this is for the first time the Court clarifies the modalities of their interpretation and application.

In the field of the considerations related to the "by effect", "by object" problematic in the application of the provisions of Article 101 TFEU,[143] the Court specified in its *Superleague judgement* that the concept of anticompetitive "effect" must be interpreted as referring "solely" to certain types of coordination between undertakings, which reveal a sufficient degree of harm to competition for the view to be taken that it is not necessary to assess their effects.[144] First, this clarification is more than welcome. Second, its exact scope can be measured in light of the application of the *Wouters judgement*[145] and the future possible boundaries of sport regulation, SGBs.

Indeed, according to the latter, not every agreement between undertakings or every decision of an association of undertakings, which restricts the freedom of action of the parties or of one of them necessarily falls within the prohibition laid down in Article 101(1) TFEU. For the purposes of application of that provision to a particular case, account must first be taken of the overall context in which the decision of the association of undertakings was taken or effects it produces. More particularly, account must be taken of its objectives, which are here connected with the need to make rules relating to organisation, qualifications, professional ethics, supervision and liability, in order to ensure that the ultimate consumers of legal services and the sound administration of justice are provided with the necessary guarantees in relation to integrity and experience.[146]

The Court held that the *Wouters judgement* is not applicable either in situations involving conduct which, far from merely having the inherent "effect" of restricting competition, at least potentially, reveals a degree of harm in relation to that competition that justifies a finding that it has as its very "object" the prevention, restriction or distortion

141 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 119.

142 Judgements of 11 April 1989, *Saeed Flugreisen and Silver Line Reisebüro,* C-66/86, EU:C:1989:140, paragraph 37; 16 March 2000, *Compagnie maritime belge transports a. o. v Commission,* C-395/96 P and C-396/96 P, EU:C:2000:132, paragraph 33; 30 January 2020, *Generics (UK) a. o.,* C-307/18, EU:C:2020:52, paragraphs 146, 147.

143 Kecsmár 2020a.

144 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraphs 161–162.

145 Judgement of 19 February 2002, C-309/99, *Wouters and Others,* EU:C:2002:98.

146 Judgement of 19 February 2002, C-309/99, *Wouters and Others,* EU:C:2002:98, paragraph 97.

of competition, by limiting the freedom of action of certain undertakings.[147] Therefore, the *Wouters judgement* is only applicable to conducts restricting competition "by effect" and not those ones "by object".

It follows that once a restriction of competition by object in the sense of Article 101 TFEU is established, the possibility to invoke the *Wouters* exception is no longer available. The one and only fallback position consists in invoking Article 101(3) TFEU leaving less chances of success to SGBs.[148]

Conclusion

External values are sometimes taken into account by the CJEU in its analysis of competition law and/or policy. The strength of impact depends, however, on the degree of value in question and at stake. One can think about the fact that data protection is a fundamental right protected by the Charter while the force of Article 165 TFEU was found much less by the Court following a conservative, dogmatic interpretation of that provision in the *Superleague, ISU* and *Royal Antwerp FC Cases*.

Interestingly, the *Meta Platforms Case* perhaps signalled a paradigm shift for NCAs, who are experiencing an expansion of their competence. While the CJEU noted that the primary competence for GDPR protection rests with the supervisory authorities designed for such purpose, this acquisition of competence on the side of NCAs allows them to cover markets from a broader perspective. Notwithstanding, while the *Superleague, ISU* and *Royal Antwerp FC Cases* may only have marginal relevance from this perspective, it is worth noting that, where necessary, markets not initially conceived as falling under the remits of NCAs and the Commission may come into play. This sample of recent judgements from the CJEU signals that Competition enforcement evolves with time. This means that, in the context of the Digital Markets Act, data protection may play an even bigger and more substantial role in how digital markets are regulated, as might signal the ongoing Commission investigation into Meta's "pay or consent" model for data processing.[149]

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147 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 186.

148 Judgement of 21 December 2023, C-333/21, *European Superleague Company,* EU:C:2023:1011, paragraph 183; AGAFONOVA 2024; ROSIN 2024; IBÁÑEZ COLOMO 2023.

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Cohesion and Competitiveness in CEE

The Impact of EU Cohesion and Development Policies on the Competitiveness and Energy Transition in Central and Eastern Europe

The admission of Central and Eastern European (CEE) countries to the European Union (EU) caused significant economic growth, yet achieving sustained competitiveness within the EU continues to present difficulties. The paper analyses the competitiveness of CEE economies within the EU context, emphasising the effects of EU cohesion and development policies, energy transition initiatives and developments in digital infrastructure. This work examines the distinct economic and structural issues confronting CEE nations, utilising ideas from major EU papers such as The Future of European Competitiveness (Draghi Report), Much More than a Market (Letta Report) and the Ninth Cohesion Report. Particular attention is given to energy dependency, regional digital divides and the socio-economic impact of green transitions on traditionally coal-reliant economies.

Our analysis utilises statistical data – such as GDP growth, renewable energy adoption rates and digital readiness scores – to evaluate policy effectiveness. Statistical analyses of NUTS 2 areas in Hungary and Poland reveal regional disparities, emphasising the relationship between EU funding allocations and improvements in economic indicators such as internet accessibility and renewable energy adoption. Findings indicate that centralised governance structures and regional variations in CEE nations limit the effectiveness of EU initiatives, highlighting the necessity for localised, adaptable approaches in cohesion policy. This study adds to ongoing policy debates on the competitiveness of CEE countries by highlighting key areas where

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strategic investments can help create a more cohesive and sustainable Single Market with a view to the corresponding role of EU funding programmes.

Keywords: Central and Eastern Europe, competitiveness, cohesion policy, energy transition, digital infrastructure, green economy

Introduction

Joining the European Union (EU) has transformed the economic landscape of Central and Eastern European (CEE) countries, offering access to the Single Market, Structural and Cohesion Funds, and development programs that have driven economic growth and deeper EU integration. However, sustaining competitiveness within the EU requires constant adjustments to adapt to an always-changing economic and policy world, where digitalisation, energy transition and economic resilience are central to future success.

Cohesion policy has played a crucial role in addressing regional disparities and supporting less developed regions within the CEE region. By funding infrastructure projects, educational opportunities, social inclusion measures, improving broadband access and promoting renewable energy adoption, the EU has helped these nations overcome structural disadvantages. Yet, as the analysis revealed, significant disparities persist between urban hubs like Budapest and Warsaw and rural regions such as Észak-Alföld and Lubelskie, where growth and digital infrastructure improvements lag behind despite EU investments.

This study explores the factors shaping economic competitiveness in CEE countries, focusing on case studies of Hungary and Poland. It is supported by statistical data and regional performance metrics. Insights from key reports – Mario Draghi's *The Future of European Competitiveness,* Enrico Letta's *Much More than a Market* and the European Commission's *Ninth Cohesion Report* – further contextualise these findings, offering a nuanced view of successes and challenges.

The Draghi Report underscores the urgent need for coordinated EU energy policies to reduce dependency and mitigate the economic damage of high energy costs. This is a critical issue for coal-dependent regions like Poland's Śląskie and Hungary's Nógrád, where the reliance on fossil fuels creates significant economic vulnerabilities. Meanwhile, the Letta Report advocates for a Single Market that bridges the digital divide, enabling rural regions like Poland's Lubelskie and Hungary's Észak-Alföld to participate more fully in the EU's digital and economic ecosystems. The Ninth Cohesion Report provides a broader perspective on how EU cohesion policy has fostered economic growth but also highlights persistent "development traps" that hinder progress in less developed areas, such as Észak-Alföld and Lubelskie, which face structural barriers to competitiveness.

By critically analysing statistical trends and regional disparities, this study emphasises the importance of tailored EU strategies that address local needs while aligning with broader sustainability and digitalisation goals. As the EU strives for a cohesive and sustainable future, integrating CEE economies remains essential for achieving its vision of economic solidarity and resilience.

Theoretical framework

Economic integration theory posits that removing trade barriers and creating a unified market enhances efficiency, fosters growth and promotes convergence, as exemplified by the EU's Single Market.[3] For CEE countries, accession to the EU and integration into the Single Market have opened significant opportunities for economic modernisation and enhanced competitiveness. Building on this foundation, Porter's theory of competitive advantage highlights that national and regional competitiveness is shaped by the productivity with which resources are utilised.[4] Factors such as market conditions, institutional quality, infrastructure, skilled labour and innovation systems all play a critical role in determining competitiveness.

However, as Krugman's work on economic geography suggests, an economic activity often clusters in regions with favourable conditions, leading to regional disparities.[5] This concentration of growth highlights the importance of policies that address inequalities to ensure that the benefits of economic integration are evenly distributed across regions. The convergence theory further reinforces this idea, asserting that less developed economies tend to grow faster than their more developed counterparts, reducing income disparities over time.[6] Yet, while EU cohesion policy has made significant progress in promoting convergence, challenges persist, particularly in regions with structural weaknesses.[7] This necessitates a place-based approach to development, which tailors policies to the unique needs and potential of individual regions.[8] Without such localised strategies, cohesion policy risks perpetuating inequalities rather than mitigating them, as Rodríguez-Pose and Ketterer argue.[9] Therefore, empowering regional authorities and integrating local priorities are critical for achieving sustainable and inclusive development.

Beyond economic disparities, energy dependency presents another significant challenge for CEE countries. Energy dependency theory explores the vulnerabilities of reliance on external energy sources.[10] For Europe, where energy prices are typically higher than in other major economies, this dependency constrains industrial competitiveness, particularly for energy-intensive sectors.[11] Research by Böhringer and Rutherford[12] highlights the economic strain caused by energy price shocks, which can reduce industrial output and limit overall competitiveness. However, ecological modernisation theory offers an alternative perspective, suggesting that energy and environmental challenges can drive innovation, positioning sustainability as a competitive advantage for regions that invest in renewable energy and efficient technologies.[13] For CEE countries, which often exhibit

3 Balassa 1961.
4 Porter 1990.
5 Krugman 1991.
6 Barro – Sala-i-Martin 1992.
7 Leonardi 2006.
8 Barca 2009.
9 Rodríguez-Pose – Ketterer 2020.
10 Pindyck 1979.
11 European Commission 2024a.
12 Böhringer–Rutherford 2010.
13 Huber 2000.

high energy intensity and significant reliance on fossil fuels, transitioning to renewable energy represents both a challenge and an opportunity to align with EU climate goals and enhance regional competitiveness.[14]

In addition to energy concerns, digital transformation has emerged as a central driver of economic growth in the modern era. Schwab's concept of the Fourth Industrial Revolution emphasises how digital technologies are reshaping industries and societies, creating both opportunities and challenges.[15] Similarly, Castells's theory of the network society highlights how information and communication technologies (ICT) enable new forms of economic and social organisation.[16] However, achieving sustainable economic growth also requires balancing digitalisation with environmental and social considerations, as emphasised by sustainable development theory.[17]

EU development and cohesion policies

Introduced in 1986 under the Single European Act, the EU's cohesion policy is a cornerstone of European integration. Its goal is to reduce regional disparities and foster economic, social and territorial cohesion. Over successive programming periods, the policy has evolved to address new challenges, including climate change, digital transformation and the transition to a green economy, while reinforcing long-term stability and convergence. However, critiques regarding the policy's ability to achieve deeper EU integration have prompted ongoing reforms to enhance its relevance and effectiveness.

Cohesion policy follows a place-based framework, emphasising tailored interventions that empower regions to address unique social, economic and cultural challenges. This approach seeks to empower local authorities and communities to harness their distinctive strengths while addressing structural difficulties. By allocating resources to less developed regions, cohesion policy fosters convergence and inclusive growth, addressing diverse regional needs in infrastructure, workforce skills and resources. Commissioner Elisa Ferreira underscores the centrality of territorial competitiveness, highlighting the need for regions to create attractive and sustainable environments for residents and businesses, a fundamental aim of cohesion policy.[18]

The evolution of cohesion policy is marked by its integration of performance measurement to ensure accountability and alignment with regional needs. The European Commission's Directorate-General for Regional and Urban Policy (DG REGIO) uses indicators like the Regularity Indicator (RTER) in its Annual Activity Reports to assess the compliance of cohesion-funded projects.[19] While the 2014–2020 programming period introduced a performance-based model focusing on measurable milestones, the RTER specifically addresses the legality and regularity of fund implementation. This dual approach aims to balance effectiveness with proper financial management. Such

14 SZEMZŐ et al. 2020.
15 SCHWAB 2016.
16 CASTELLS 2000.
17 SOLOW 1974; SACHS 2015.
18 European Commission 2023a.
19 European Commission 2023a.

adaptations underscore the policy's responsiveness to regional diversity while reinforcing its capacity to address disparities effectively and ensure proper use of EU funds. This shift aligns with insights from the European Spatial Planning Observation Network (ESPON)[20] and the Ninth Cohesion Report, both of which advocate for decentralised performance metrics tailored to reflect local challenges and opportunities.[21] Such adaptations underscore the policy's responsiveness to regional diversity, reinforcing its capacity to address disparities effectively.

In recent years, additional layers of complexity have been introduced to cohesion policy, mainly through the establishment of the Recovery and Resilience Facility (RRF). Designed as a temporary mechanism to support economic recovery from the Covid–19 pandemic, the RRF complements the cohesion policy's goals by promoting resilience and reducing disparities. However, its coexistence with cohesion policy has sparked debates about policy coherence, particularly in funding allocation and strategic alignment. Legislative discussions for the post-2027 programming period are expected to address these concerns, aiming to harmonise the RRF and cohesion policy frameworks to balance short-term recovery with long-term sustainability.[22]

The *Territorial Agenda 2030* and the *Just Transition Mechanism (JTM)* exemplify the EU's adaptability to emerging challenges. The *Territorial Agenda 2030* emphasises the importance of flexible, forward-looking approaches to regional development, particularly as regions confront the dual pressures of green and digital transitions.[23] Similarly, the *Just Transition Mechanism* aims to mitigate the socio-economic impacts of transitioning to a greener economy, focusing on supporting regions heavily reliant on carbon-intensive industries.[24] Meanwhile, the JTM demonstrates the EU's commitment to supporting regions disproportionately affected by industrial shifts, particularly those transitioning away from carbon-intensive industries. Together, these initiatives reflect the critical role of cohesion policy in fostering a resilient and competitive EU, capable of addressing future challenges while maintaining its foundational commitment to reducing disparities.[25]

Cohesion policy integrates ecological modernisation theory, investing in renewable energy, energy efficiency and digital infrastructure to align growth with social and environmental goals. This vision aligns with Schwab's[26] concepts of the Fourth Industrial Revolution, which underscores the transformative potential of digital technologies in shaping competitive, sustainable and inclusive economies.

While EU cohesion policy aims to foster economic growth and reduce regional disparities,[27] the literature presents a more nuanced perspective. Studies such as Ederveen et al. (2002) emphasise the crucial role of efficient fund allocation and spending in maximising the impact of cohesion policy. However, concerns have been raised about

20 ESPON 2017.
21 European Commission 2024b.
22 Hunter 2023.
23 European Commission 2020.
24 European Commission s. a.
25 Böhme–Redlich 2023.
26 Schwab 2016.
27 European Commission 2021.

the potential for diminishing returns or even negative effects, with Becker et al. (2012) questioning whether "too much of a good thing" can hinder growth in certain regions. Furthermore, Boldrin and Canova (2001) critique the effectiveness of European regional policies in achieving convergence, suggesting that alternative approaches may be needed to address persistent inequalities.

Competitiveness of CEE countries in the EU

CEE countries have benefitted significantly from EU membership, which has facilitated economic growth and integration through trade liberalisation, foreign direct investment (FDI) and cohesion funding. GDP per capita in CEE countries has risen steadily, with Poland achieving 80% of the EU average by 2023, compared to 51% at the time of its EU accession in 2004. Similarly, Hungary increased its GDP per capita from 64% to 76% of the EU average over the same period.[28]

Despite these advancements, rural regions remain disadvantaged. For example, GDP per capita in Slovakia's Bratislava region is 184% of the EU average, while Eastern Slovakia lags at 54%.[29]

As Dijkstra et al. emphasise, "EU cohesion policy has acted as a buffer against the negative impacts of the crisis in regions that receive substantial funding, allowing for a faster recovery compared to regions with fewer support mechanisms".[30] This highlights the critical role cohesion policy has played in buffering CEE countries against shocks such as the 2008 global financial crisis. This resilience was similarly evident during the Covid–19 pandemic, where cohesion funds supported a quicker rebound in GDP growth for countries like Poland (6.8%) and Hungary (7.1%) in 2021, exceeding the EU average of 5.4%.[31] However, the region's competitiveness within the EU is shaped by stark regional disparities. While cohesion policy has significantly boosted economic growth in the region, these classifications underscore the persistent gaps in regional competitiveness.[32]

Energy dependency remains a critical factor affecting competitiveness in CEE countries. Poland, Hungary and Bulgaria have historically relied heavily on coal and other non-renewable energy sources, making them vulnerable to energy price fluctuations. Poland's Śląskie region, a major coal-mining area, has faced significant economic and social costs in reducing coal dependency.[33] Despite these challenges, there are success stories. Latvia, for instance, has diversified its energy portfolio, achieving a 43% share of energy from renewables in 2023, significantly higher than Hungary's 17% and Poland's 16%.[34] The energy transition in CEE countries presents a complex challenge, requiring both strategic investments and effective governance. While CEE countries have made progress in adopting renewable energy sources, their historical reliance on fossil fuels

28 Eurostat 2023.
29 European Commission 2024b.
30 Dijkstra et al. 2015: 942.
31 Eurostat 2022.
32 European Commission 2024b: 94.
33 European Commission 2024a.
34 Eurostat 2024.

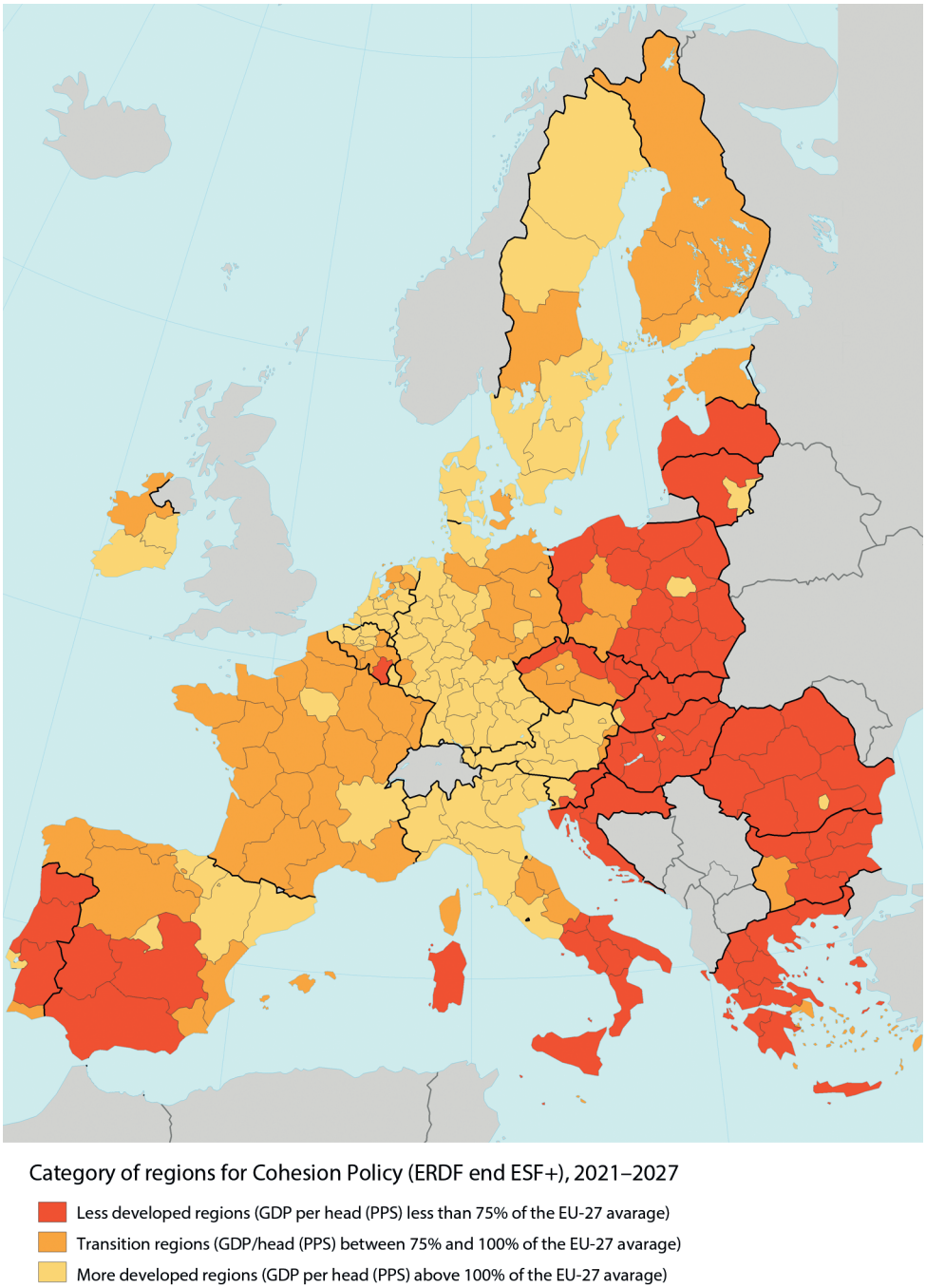

Figure 1: Category of regions for Cohesion Policy

Source: Eurostat

and varying national strategies impact the pace and nature of this transition. The United Nations Development Programme (2023) highlight the importance of effective governance in driving energy transitions, while European Council on Foreign Relations in it's 2023 report explains Poland's resistance to EU energy and climate policies, which is rooted in its energy security complex.

Digital infrastructure plays a crucial role in enhancing regional competitiveness and bridging socio-economic disparities within CEE countries. This development extends beyond mere connectivity, encompassing the creation of smart, sustainable cities as highlighted by Bibri and Krogstie (2017) in their extensive review. Toader et al. (2018) further quantify the impact of ICT infrastructure on regional development within the EU, demonstrating its importance for economic growth. If we look at the data, we can see that while urban areas like Warsaw and Budapest benefit from robust digital networks, many rural regions face significant connectivity challenges. For example in Romania, the lack of high-speed internet in rural areas is a significant issue, with approximately 30% of these areas lacking access, which widens the digital divide between urban and rural regions.[35]

Governance models shape how effectively EU funds address disparities. Decentralised approaches like Poland's enable regions such as Wielkopolskie to tailor funds to local needs, fostering growth. Conversely, Hungary's centralised approach has concentrated resources in Budapest, exacerbating inequalities in less developed regions like Northern Hungary. Similar trends are evident in the Czech Republic, where Prague attracts a disproportionate share of EU funding compared to less developed Moravian regions, which remain below the EU average in competitiveness indicators.[36]

Case study: EU funds and their impact on Hungary and Poland

This case study examines how EU funds have influenced green and digital transitions in Hungary and Poland, revealing regional disparities shaped by governance, economic priorities and fund allocation. The study focuses on four regions: Central Hungary (Közép-Magyarország) and Mazowieckie, representing Budapest and Warsaw, and Észak-Alföld and Lubelskie, rural areas in Hungary and Poland, highlighting urban–rural contrasts in EU investment outcomes.

It is important to acknowledge the heterogeneity within the selected regions. For example, within Mazowieckie, significant disparities exist between the Warsaw metropolitan area and the surrounding rural areas. Similarly, Central Hungary is largely driven by the economic performance of Budapest, with other parts of the region experiencing slower growth. While the NUTS 2 level provides a useful level of aggregation for comparative analysis, these intraregional differences should be considered when interpreting the results. Further research could explore the impact of cohesion policies at a more granular level to capture these nuances.

35 Energynomics 2024.
36 European Commission 2023a.

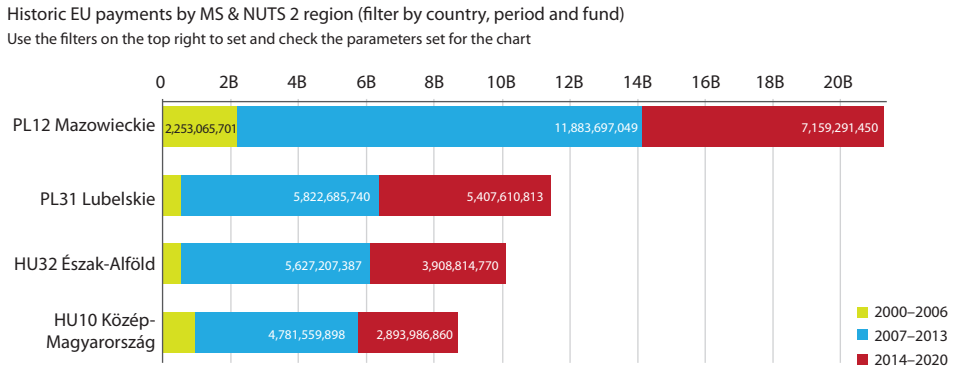

Figure 2: EU Payments towards Mazowieckie, Lubelskie, Közép-Magyarország és Észak-Alföld regions between 2000 and 2020

Source: Eurostat

As the above chart shows, EU payments to NUTS 2 regions in Poland and Hungary reveal important trends in fund allocation. Mazowieckie received the highest EU funding in Poland, aimed at boosting the capital's infrastructure and competitiveness, while significant allocations to Lubelskie and Észak-Alföld targeted regional disparities.

In contrast, Hungary's funding is more centralised, with Central Hungary receiving significant investment, though less than Mazowieckie, leaving rural regions relatively underserved. The noticeable increase in funding from 2007–2013 to 2014–2020 underscores the EU's intensified commitment to regional development. These patterns illustrate how governance models shape fund distribution and impact. These differences align with findings in the *Ninth Cohesion Report,* which emphasises that a "one-size-fits-all" approach is insufficient for addressing diverse regional needs across the EU.[37]

Simply examining fund allocations is insufficient; understanding their impact requires analysing additional factors influencing regional competitiveness. One valuable tool for this purpose is the Regional Competitiveness Index, which provides a comprehensive framework for assessing the strengths and weaknesses of regions and their capacity to capitalise on funding opportunities.

The European Commission's Regional Competitiveness Index (RCI) benchmarks NUTS 2 regions based on three sub-indexes: Basic factors (e.g. infrastructure, health), Efficiency factors (e.g. education, labour market) and Innovation factors (e.g. technology, innovation capacity). Updated every three years, the RCI provides a detailed snapshot of regional strengths and weaknesses, highlighting disparities across the EU.

37 European Commission 2024c.

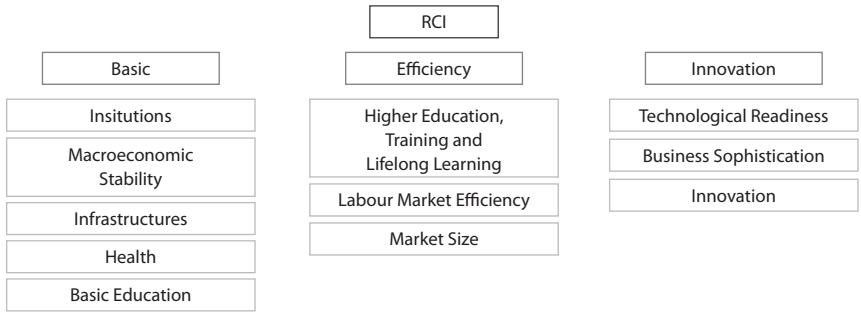

Figure 3: Data matrix used for the Regional Competitiveness Index

Source: Eurostat

For our study, the RCI offers a robust framework to analyse how EU cohesion policies impact competitiveness in CEE regions. It allows us to track progress in areas like infrastructure development, digitalisation and innovation, which are central to green and digital transitions. Additionally, the RCI's multidimensional approach aligns with our focus on evaluating regional disparities, making it a valuable tool for identifying both achievements and ongoing challenges. To better align the RCI with the specific objectives of this study, we focus on three key dimensions: 'Innovation', 'Digital Readiness' and 'Basic Factors'. The 'Innovation' dimension is particularly relevant as it reflects a region's capacity to develop and adopt new technologies, crucial for energy transition and digital infrastructure development.[38] 'Digital Readiness' is essential for assessing a region's ability to participate in the digital economy and benefit from increased connectivity.[39] 'Basic Factors', specifically infrastructure, are vital, representing enablers of the green transition.

Table 1 presents the Regional Competitiveness Rankings (RCI 2022) for selected regions, including Warszawski stołeczny, Central Hungary, Lubelskie and Észak-Alföld, categorised by their respective stage of development. The regions are ranked based on their RCI scores, which measure competitiveness across factors such as infrastructure, education, innovation and economic performance.

Table 1: Regional Competitiveness Rankings for Warszawski stołeczny, Central Hungary, Lubelskie and Észak-Alföld 2022

Rank	Region name	Stage of development	RCI 2022
36	Mazowieckie	MD	118
93	Central Hungary	MD	105.5
180	Lubelskie	LD	79
202	Észak-Alföld	LD	67.9

Source: Eurostat

[38] European Commission 2023a.
[39] European Commission 2024b.

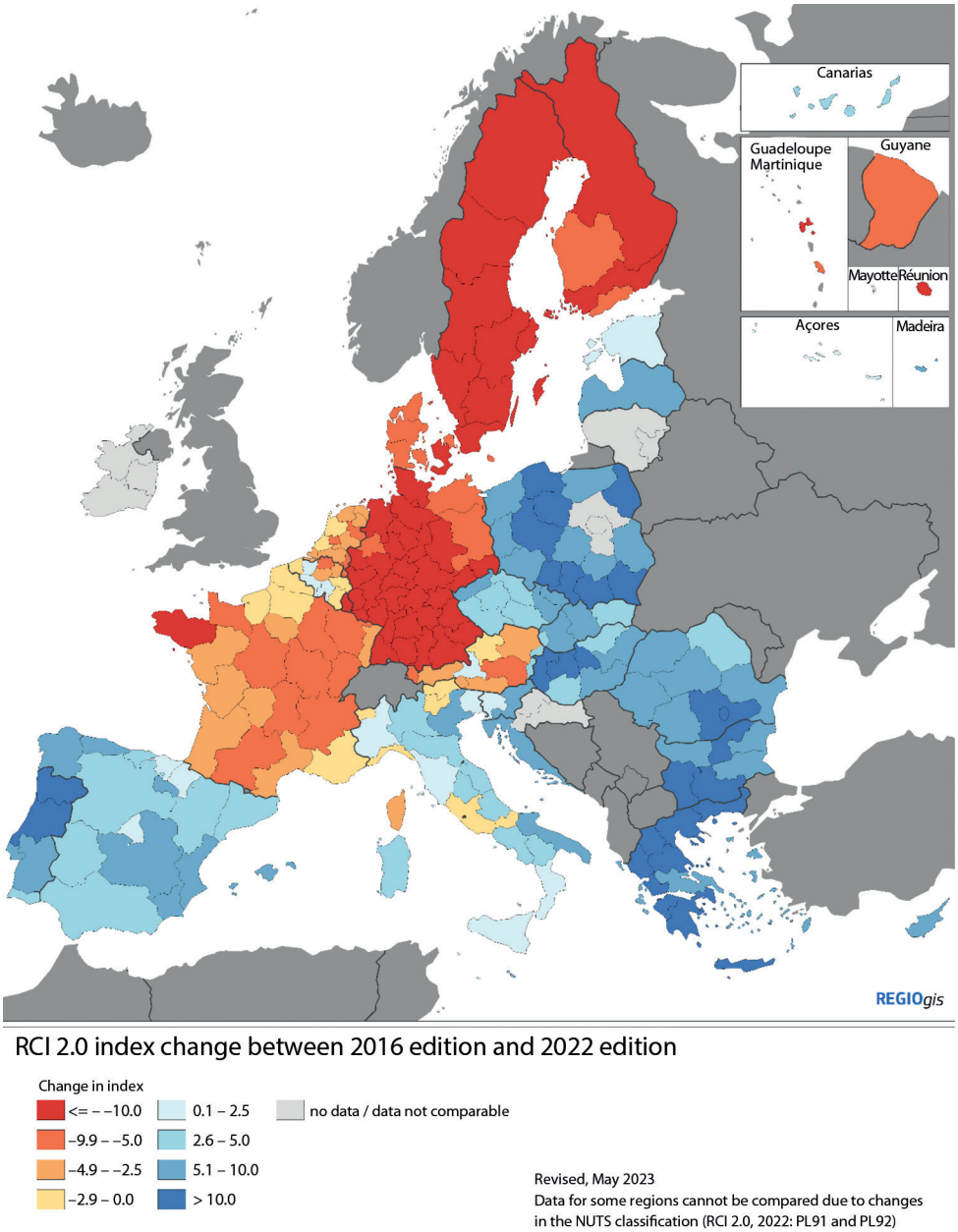

Figure 4: Regional competitiveness rankings changes between 2016 and 2022

Source: Eurostat

Cohesion policy in the period 2021–2027 uses three categories of regions based on the GDP per capita for the years 2015, 2016 and 2017:

- *Less developed (LD): less than 75% of EU27 average*
- *Transition: between 75% and 100% of EU27 average*
- *More Developed (MD): above 100% of EU27 average*

As we can see from Table 1, Mazowieckie, representing Poland's capital region, leads the group with an RCI score of 118 and is classified under the more developed (MD) category. The region showed notable improvements in its competitiveness index, especially between the 2019 and 2022 editions, where it increased by 13 index points. This trend is in close connection with the fact that the region has consistently received the highest EU fund allocations across all programming periods, as shown in Figure 2. The other regions in Poland, such as Lubelskie, also increased by approximately 10 points during the same period. These improvements suggest progress in economic and structural areas, with some regions, particularly urban and more developed ones, catching up to EU standards. However, regional disparities remain, with Eastern Polish regions lagging behind Western regions' competitiveness.

Hungary displayed a mixed performance across its regions. Central Hungary follows with a score of 105.5, falling under the more developed (MD) category. The region remained relatively competitive, aligning closer to EU averages, but other regions, particularly in the eastern and rural parts of the country, continued to face challenges. In contrast, Lubelskie and Észak-Alföld, both categorised as less developed (LD) regions, score significantly lower at 79 and 67.9, respectively. The disparity between Budapest and peripheral regions is significant, illustrating the uneven economic development within Hungary. RCI scores correlate with funding allocation, as regions like Mazowieckie and Central Hungary outperform less funded areas such as Lubelskie and Észak-Alföld.

While the RCI offers a comprehensive overview of regional competitiveness, it includes factors (e.g. health, higher education) that are not directly linked to the study's focus on cohesion policy, energy transition and digital infrastructure. To mitigate this, the analysis focuses on interpreting the RCI in conjunction with other indicators, such as GDP growth, renewable energy adoption and broadband access, providing a more nuanced understanding of the impact of EU funding. These dimensions were chosen based on the priorities outlined in the Draghi and Letta reports, as well as the EU's broader strategic objectives for sustainable and inclusive growth.

Table 2 offers a detailed overview of the socio-economic and infrastructural impacts of EU cohesion funds on selected regions. It highlights key indicators, including total EU fund allocations since accession, regional GDP and household internet access rates. Additionally, the table incorporates the share of energy from renewable sources, presented at the country level due to data availability constraints.

Table 2: Impact of EU Cohesion Funds on Regional Competitiveness Indicators in selected regions of Hungary and Poland (2014–2022)

	EU fund allocation total (€ millions)	Regional GDP (€ millions) 2011	Regional GDP (€ millions) 2022	Renewable energy share (2004)	Renewable energy share (2023)	Broadband access (2012)	Broadband access (2023)
Central Hungary	35,373	10,761	19,911	4%	15%	76%	95%
Észak-Alföld	38,288	9,858	16,214			58%	88%
Mazowieckie	44,918	20,014	35,862	6%	16%	74%	93%
Lubelskie	47,712	14,859	23,910			62%	92%

Source: Eurostat

The data for this study were primarily sourced from Eurostat, the statistical office of the European Union. Regional GDP data for 2011 and 2022 were obtained from the "Regional Economic Accounts – GDP and Main Components" dataset (nama_10r_2gdp). Data on household broadband access were sourced from the "Households with Broadband Access" dataset (isoc_r_broad_h). Due to limitations in regional-level data availability, renewable energy share data were obtained from the "Share of Energy from Renewable Sources" indicator (nrg_ind_ren) at the national level. These data were accessed and extracted in January 2025 using the Eurostat online database.

To analyse the relationship between EU fund allocations and regional development indicators, we calculated the percentage change in GDP between 2011 and 2022 for each region. Broadband access improvements were measured as the percentage point difference in household access rates between 2012 and 2023. Regional performance was compared using a difference-in-differences approach, examining the change in key indicators between regions receiving high levels of EU funding and those receiving lower levels.

Table 2 reveals that urban and economically advanced regions like Mazowieckie and Central Hungary have experienced notable GDP growth and improvements in digital infrastructure, reflecting the substantial EU investments directed toward these areas. For instance, Mazowieckie's GDP grew from €20,014 million in 2011 to €35,862 million in 2022, while Central Hungary's GDP more than doubled from €10,761 million to €19,911 million over the same period. These results underscore the advantages of concentrated funding in urban centres, where infrastructure, innovation capacity and educational attainment levels drive enhanced labour market efficiency.

In contrast, rural regions such as Lubelskie and Észak-Alföld have shown positive but comparatively modest economic progress. Lubelskie's GDP increased from €14,859 million to €23,910 million between 2011 and 2022, while Észak-Alföld's rose from €9,858 million to €16,214 million. These figures highlight the ongoing challenges faced by less developed regions in catching up with their urban counterparts. While growth is evident, these rural areas continue to grapple with structural limitations.

Between 2004 and 2023, Hungary increased its renewable energy share from 4% to 15%, while Poland's share rose from 6% to 16%. Despite these advancements, both countries remain below the EU average of 25% as of 2022, highlighting the slower pace of energy transition compared to Western European nations. For instance, Sweden's renewable energy share was nearly 50% in 2022, with Denmark and Finland also exceeding 40%.[40] This disparity underscores Eastern European countries' significant challenges in accelerating their energy transitions.

Broadband access saw significant improvements across all regions, further emphasising the impact of EU digital infrastructure programs. Central Hungary achieved a high broadband coverage rate, rising from 76% in 2012 to 95% in 2023, while Mazowieckie recorded a comparable increase from 74% to 93%. Rural regions also made substantial progress, with Lubelskie improving from 62% to 92% and Észak-Alföld from 58% to 88%, bridging much of the digital divide. However, disparities in digital readiness persist, requiring sustained focus on equipping rural areas with advanced digital skills and connectivity.

These findings echo the Draghi and Letta Reports, which stress inclusive, region-specific strategies for digital and energy transitions to enhance resilience. The observed trends also correlate with the RCI scores, as more developed regions like Mazowieckie and Central Hungary lead in competitiveness, benefiting from targeted EU support, while less developed regions like Lubelskie and Észak-Alföld lag behind, highlighting the necessity for continued, differentiated investments to balance regional disparities.

National policy examples

Hungary and Poland have implemented various national policies that align with the goals of EU cohesion policy, demonstrating their efforts to enhance regional competitiveness and address disparities. In Hungary, the Modern Cities Program (2015–2020) aimed to improve urban infrastructure, digital connectivity and overall development, focusing heavily on urban centres.[41] This centralised approach benefited Budapest with 95% broadband penetration but left rural areas like Észak-Alföld lagging. Similarly, Hungary's National Energy and Climate Plan (2020) has sought to transition the country toward renewable energy and increased energy efficiency. However, this transition has been slower in less developed rural regions, emphasising the uneven impact of centralised policies.[42] Another noteworthy initiative, the Digital Welfare Program (2015), aimed to bridge the digital divide by increasing digital literacy and e-government services.[43] While the program has succeeded in advancing urban digital integration, rural areas continue to face challenges in achieving similar progress.

In Poland, the Digital Poland Operational Program (2014–2020) has been a cornerstone of its decentralised governance model, empowering regional authorities to allocate

40 IEA 2022.
41 Government of Hungary 2015a.
42 Ministry of Innovation and Technology 2022.
43 Government of Hungary 2015b.

EU funds to local digitalisation efforts. This program significantly increased broadband coverage in rural regions like Lubelskie (from 62% to 92%), demonstrating the success of tailoring policies to local needs.[44] Poland has also prioritised environmental sustainability through the Clean Air Programme (2018–ongoing), which focuses on improving energy efficiency and reducing reliance on coal, particularly in regions like Śląskie.[45] Additionally, regional development strategies, developed at the voivodeship level, showcase Poland's commitment to addressing local disparities.[46] These decentralised strategies have enabled regions like Mazowieckie to achieve exceptional GDP growth and competitiveness, contrasting with slower progress in rural areas.

Methodological limitations

The analysis is subject to several limitations. The use of secondary data from Eurostat introduces the potential for measurement errors or biases inherent in the original data collection process. Data validation was performed by cross-referencing with national statistical offices where possible; however, data quality problems may persist. Given the small sample size of regions selected for case study analysis, findings may not fully represent the diversity of experiences across all CEE countries. Analysis is also constrained by data availability at the regional level for certain indicators, such as renewable energy share, which is only available at the national level. As a result, interpretations of the results are made.

The withholding of EU funds and its implications

The ongoing disputes between Hungary and the EU over governance, rule of law and institutional reforms have resulted in significant financial consequences. The European Commission has withheld Hungary's access to substantial funds from the EU Cohesion Policy, Horizon Europe, and Erasmus+ programs due to concerns about judicial independence, anti-corruption measures and public procurement practices.[47] Similarly, Poland experienced a temporary suspension of its RRF, which was only resolved after commitments were made to align judicial reforms with EU standards.[48]

For Hungary, the freezing of funds includes approximately €6.3 billion under the RRF and a portion of the €22 billion allocated for the Cohesion Policy for 2021–2027.[49] Moreover, its exclusion from Horizon Europe, the EU's flagship research and innovation program, and Erasmus+ funding for education and exchange initiatives further compounds the issue. Together, these measures represent a substantial share of resources crucial to Hungary's efforts to advance digitalisation, sustainability initiatives and

44 Ministry of Digital Affairs 2014.
45 National Fund for Environmental Protection and Water Management 2018.
46 Ministry of Development Funds and Regional Policy 2021.
47 European Commission 2023b.
48 European Commission 2024b.
49 Hunter 2023.

higher education. Poland, in contrast, managed to unlock its RRF funds of €35.4 billion after demonstrating progress in addressing EU concerns.[50]

The suspension of EU funds poses significant risks to Hungary's socio-economic development and competitiveness. Economic disparities will likely deepen, particularly in rural and less developed regions, which rely on cohesion funds to bridge infrastructure, education and digital access gaps. The lack of access to Horizon Europe funding jeopardises research institutions and businesses dependent on EU support for innovation projects, potentially stalling technological progress and weakening their position in the Single Market.[51] Similarly, the suspension of Erasmus+ funding limits opportunities for students and academics, threatening long-term human capital development and international collaboration. Beyond financial impacts, these disputes damage Hungary's reputation within the EU, potentially deterring foreign investment and cross-border partnerships.[52] Prolonged withholding of funds could exacerbate existing inequalities. This situation underscores the central question of this study: the suspension of funds not only disrupts immediate financial stability but also undermines broader cohesion policy goals, which aim to reduce disparities and foster integration.

Conclusion and future outlook

This study has examined the complex interplay between EU cohesion policies, national governance and regional competitiveness in Central and Eastern Europe. Our analysis reveals that while EU membership and cohesion funding have significantly boosted economic growth and integration in CEE countries, persistent regional disparities and external challenges, such as energy dependency and the digital divide, continue to hinder their ability to achieve sustained competitiveness within the Single Market.

Moreover, our analysis underscores the vulnerability of CEE economies to energy price shocks and the urgent need for a transition to renewable energy sources. While some countries, like Lithuania, have made significant progress in diversifying their energy portfolios, others, like Poland and Hungary, continue to rely heavily on fossil fuels. Addressing this energy dependency is crucial for enhancing competitiveness and achieving EU climate goals. Finally, the recent withholding of EU funds from Hungary poses significant risks to the country's socio-economic development and its ability to address these challenges.

Reflecting on the findings, the competitiveness of CEE countries hinges on the dynamic interplay between cohesion policies and national governance. As illustrated by the varied trajectories of Hungary and Poland, future strategies must align local needs with broader EU objectives. The Draghi Report underscores the importance of energy policy in fostering resilience and competitiveness. These findings underscore the necessity of a coordinated EU energy policy to ensure equitable progress across diverse regions.

50 European Commission 2024b.
51 IEA 2023.
52 Science Business 2024.

Sustained investments in renewable energy projects and localised support mechanisms are crucial to achieving economic and environmental sustainability.

The new European Commission has a unique opportunity to address these regional imbalances by integrating the lessons from cohesion policy into a broader competitiveness strategy. The *Budapest Declaration,*[53] proposed by the Hungarian Government on 8 November 2024, during Hungary's EU Council Presidency, emphasises enhancing national flexibility in implementing EU policies. This initiative aligns with Hungary's broader push for increased subsidiarity and has sparked discussions about its potential implications for the EU's cohesion framework. These debates are particularly relevant as the EU begins planning the next Multiannual Financial Framework (MFF), with cohesion policy reform being a critical agenda item. Recent dialogues within the European Parliament and Council have stressed the need to re-evaluate the effectiveness of cohesion policy in light of challenges like the green transition and digital integration, advocating for reforms to enhance its impact and alignment with broader EU goals.[54]

Looking ahead, the future competitiveness of CEE countries will depend on the EU's ability to adapt its policies to the unique challenges of each region while maintaining coherence within the Single Market. Tailored strategies that address disparities in energy dependency, digital infrastructure and institutional capacity will be essential. The Draghi Report's conclusions on energy policy highlight the urgency of a unified but flexible approach to the energy transition, ensuring that regions with differing starting points can remain competitive in a greener Europe. The commitment of the new Commission to innovative, inclusive cohesion policies will be vital for fostering resilience, equity and long-term competitiveness within the EU. By balancing cohesion with flexibility, the EU can create a sustainable and integrated future that benefits all its member states.

By reflecting on the evolving dynamics of cohesion policy and the implications of the *Budapest Declaration,* the EU can refine its frameworks to ensure that no region or member state is left behind in its pursuit of competitiveness and sustainability. These discussions highlight the ongoing importance of collaboration and reform in navigating the complexities of regional integration and development.

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[53] Council of the European Union 2024.

[54] European Parliament 2023.

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Réka Csepeli[1]

Abandoning the Obsession of Infinite Growth to Ensure a Sustainable Future in Europe

The issue of the contradiction between sustainability and unlimited economic growth has long been a concern for environmentalists and some economists. However, the approach that interprets and uses the theses laid out in the Club of Rome's Limits to Growth work as a starting point and examines ecological and economic aspects in terms of the necessary paradigm shift is by no means universally accepted.

The best example of this is the European approach that interprets strengthening competitiveness through re-industrialisation and technology-saving solutions. The European Green Deal,[2] *launched in 2019 as the EU's growth strategy, carries this contradiction in itself. This package of policy measures, intended to launch the green transition process, aims to lay the foundation for achieving the climate neutrality target set for 2050. This article explores the inherent contradictions between these two paradigms, examining the tensions between economic growth, resource consumption and environmental sustainability. By analysing economic theories, environmental challenges and alternative models, this paper argues that the pursuit of unrestrained economic growth is incompatible with the long-term health of the planet. The article concludes by suggesting pathways toward reconciling economic development with ecological preservation through the adoption of sustainable economic models and systems of environmental governance.*

Keywords: competitiveness, European Green Deal, infinite growth, GDP, societal well-being, degrowth, post-growth, sobriety

Introduction

Short term profits versus sustainability. GDP versus well-being. An economic logic based on the principle of unlimited growth within a finite planetary system. Seen from this angle, we must note that the European Green Deal suffers from a lack of coherence and confidence.

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[2] European Commission 2019.

The concept of unlimited economic growth is deeply ingrained in modern capitalist economies, often seen as a hallmark of prosperity and development. However, this notion stands in sharp contrast to the imperative of protecting the environment, especially in the context of global ecological degradation. The strategy that prioritises so-called "green growth" is itself a very controversial approach.[3] The principle of competitiveness and the projection of our environment are fundamentally at odds due to their differing priorities. Competitiveness prioritises economic growth, market efficiency and cost minimisation, often emphasising short-term gains in global markets. In contrast, environmental protection focuses on sustainability, decarbonisation and long-term environmental resilience, which may require costly transitions and restructuring of industries.

The recent *Draghi report*[4] on the future of European competitiveness has sounded the alarm: the EU's economic health is deteriorating, and immediate intervention is needed in order to prevent its "slow agony".

For the exact same reasons, the ongoing Hungarian EU Presidency urges a *competitiveness deal*.[5]

It is therefore more than obvious that competitiveness is identified as the cornerstone for the European Union's survival. Certainly it is. But not at all costs.

Because there is another basic condition for our survival: our environment.

But seen from another angle, we could say that this is an excellent opportunity, and probably our last one, to rethink our concept of economic growth and its limits. Because ultimately beyond political and economic considerations, there is one cause that takes precedence over all others: that of preserving decent living conditions on this planet.

And this is all the more so since the recent *COP 29 agreement,*[6] signed last November in Baku, clearly shows that we are drifting away from the objectives set by the *COP 21 Paris Agreement*[7] and the possibility of limiting the consequences of global warming.

Given the growing resistance to the Green Deal, the fate of Europe's green transition is partly at stake also from a democratic point of view. Yet if there is no longer any democratic support for the Green Deal, it can potentially come to an end – as *Pascal Canfin*, a centrist French MEP[8] recently recalled.

Given this inextricable situation, what could be our options? Should we rethink the Green Deal? Or shouldn't it be more coherent or even the best opportunity to propose a real paradigm shift, such as it was introduced then by the Brundtland report, *Our Common Future* on sustainable development almost forty years ago?[9]

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3 BOURG et al. 2020.
4 European Commission 2024a.
5 Council of the European Union 2024.
6 United Nations 2024.
7 United Nations 2015.
8 Pascal Canfin served as Chair of the Committee on the Environment, Public Health and Food Safety during the last term (following his initiative, the European Parliament declared in December 2019 a "*climate state of emergency*" (SIMON 2019; MALINGRE 2024).
9 World Commission on Environment and Development 1987.

In the discourse surrounding global development, the tension between economic growth and environmental protection has become increasingly pronounced. On the one hand, economic growth is considered essential for improving human well-being, reducing poverty and advancing technological innovation. On the other hand, the world's ecosystems are facing unprecedented degradation, driven largely by the very growth mechanisms that are central to modern economies. From climate change and biodiversity loss to resource depletion and pollution, the environmental consequences of unchecked growth are becoming ever more apparent. This paper explores the contradictions between the pursuit of unlimited economic growth and the need to protect the environment, drawing on economic theories, environmental science and case studies to highlight the challenges and propose solutions for reconciling these competing imperatives.

Obviously, we have all recognised for a long time these contradictions. Meanwhile the problem is that we are literally intoxicated by the ideology, even the obsession of growth,[10] and we try to keep it as the very foundation of all our system, which is struggling to maintain prosperity we have known in the past. So we invent, again and again, new, appealing adjectives, such as *inclusive, regenerative* or *green*… and we keep our "good old" growth alive, at a time when everything is calling for sobriety.

For French economist Timothée Parrique (2022), a specialist in degrowth, these ambitions are decoys that divert us from what the real objective should be: to reinvent an economic system based on quality of life, rather than quantitative objectives. According to him, the idea of green growth is based on false hopes, and as such, it provokes dangerous delusions.[11] Mainly because they only take greenhouse gases into account, and ignore other environmental pressures, such as the extraction of materials, the use of water and soil, air and water pollution, ocean acidification, the loss of biodiversity, etc. We should never forget that decarbonising is not enough!

Aware of the seriousness of the situation of our planet, and especially of our living conditions on it, a large number of economists and other thinkers recommend organising a "general slowdown" and reaching "an economic cruising speed compatible with the rhythm of the biosphere, i.e. a global consumption of less than 1 planet".[12]

A real break in our economic logic is therefore necessary. But the Green Deal does not bring about this break. At the same time, it cannot meet the competitiveness challenges set out in the Draghi report. One key area of conflict is in carbon-intensive industries. Competitiveness encourages minimising operational costs to outpace global rivals, but the Green Deal's stringent carbon reduction targets necessitate investment in cleaner technologies, higher operational costs and potential regulatory burdens. This shift risks making European industries less competitive globally, especially against nations with less rigorous environmental standards, such as China, the United States, or the Mercosur countries, with which the EU is signing a free trade agreement that has been under discussion for over twenty years.[13]

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10 Laurent 2021a.
11 Parrique 2022: 54.
12 Bourg et al. 2020.
13 European Commission 2024b.

The groundbreaking *Limits to Growth* report, published in 1972 by the Club of Rome, exposed clearly the consequences of exponential population and economic growth within a finite planetary system. It warned of potential ecological and societal collapse if growth trends continued unchecked.

The ideology of unlimited economic growth and its limits

More than 50 years after the publication of the also called *Meadows report,* the global obsession with economic growth persists, often overshadowing the warnings of ecological and societal collapse. Despite evidence of resource depletion, climate change and environmental degradation, GDP growth remains the primary metric of national success.[14] This fixation overlooks sustainable alternatives and perpetuates inequality, overconsumption and ecological strain. The inertia of political and corporate systems, combined with short-term economic priorities, fuels this unsustainable trajectory. As climate crises intensify, the unresolved tension between growth and sustainability underscores the urgent need to rethink progress and prioritise planetary health.

Economic growth has been a cornerstone of capitalist ideology since the Industrial Revolution. Growth, in this context, is typically defined as an increase in the production of goods and services, measured by Gross Domestic Product (GDP). The belief that growth leads to greater wealth, improved living standards and increased technological advancement has been central to the policies of governments and international organisations alike. The assumption underlying this ideology is that economic growth is a linear and unending process – an infinite expansion of consumption, production and innovation that will continually enhance human welfare.

However, while economic growth has indeed brought about significant improvements in living standards, it has also led to substantial environmental harm. As the global economy has expanded, so too has the consumption of natural resources, the release of greenhouse gases and the exploitation of ecosystems. The problem, according to environmental economists like Tim Jackson (2009), is that the economic model of infinite growth is fundamentally at odds with the finite nature of the planet's resources. The "iron cage of consumerism" makes us prisoners of the system, while making us believe that we are free and happy; and also that this could last forever.[15] As global GDP continues to rise, so too does the demand for energy, raw materials and land, leading to increasing pressure on ecosystems and biodiversity.

Today, these statements may seem quite obvious to us. However, neither our individual actions nor political decisions follow the logic of the necessary paradigm shift.

14 LAURENT 2021a: 5.
15 JACKSON 2009: 95.

The obsolescence of GDP as metric of economic well-being

Gross Domestic Product (GDP) has been a dominant metric for measuring economic success and national prosperity for over eighty years. GDP was initially formalised by economist Simon Kuznets in the 1930s during the Great Depression, at the request of the U.S. Government. Kuznets created a system to measure national income, providing a snapshot of economic performance. His work was further refined during World War II to aid in resource allocation and planning. In 1944, the Bretton Woods Conference cemented GDP as a key metric for assessing economic output worldwide, replacing earlier measures like Gross National Product (GNP). Over time, GDP became the dominant measure of economic success, influencing policy decisions, economic strategies and global development goals. However, as the global economy and societal priorities have evolved, the limitations of GDP as a comprehensive measure of progress have become increasingly apparent. In recent years, economists, policymakers and researchers have highlighted numerous shortcomings of GDP, particularly its inability to account for environmental degradation, social inequality and overall human well-being.

But how can we continue to believe that an almost hundred years old metric could still remain a cornerstone in a completely different environmental and geopolitical world? We have to move beyond GDP as the primary indicator of economic success, arguing that it has become obsolete in addressing the complexities and values of the 21st century.

One of the fundamental issues with GDP is its narrow focus on market transactions as indicators of value. GDP measures the monetary value of all finished goods and services produced within a country's borders, yet it excludes critical aspects of economic and social health.[16] For instance, GDP ignores the value of unpaid labour, such as caregiving and volunteer work, which are essential for social cohesion and well-being. Moreover, GDP fails to distinguish between economic activities that enhance quality of life and those that detract from it. Activities that harm environmental and social stability, such as deforestation or excessive fossil fuel extraction, still contribute to GDP growth, despite their detrimental long-term impacts.

Additionally, GDP does not account for income distribution within a population. GDP per capita is often used to imply an average prosperity level, but it conceals disparities in wealth and income distribution that affect societal welfare. Rising GDP can coexist with growing inequality, where wealth accumulates in the hands of a few while the majority experiences stagnant or declining living standards. This disconnection has fuelled social unrest and hindered sustainable development, suggesting that GDP is not a suitable proxy for general prosperity or economic inclusivity.

Furthermore, GDP does not differentiate between the desirable and the harmful. We see all the absurdity of an economy that seeks to make everything grow indiscriminately. French economist, Eloi Laurent wrote a book entitled *Et si la santé guidait le monde?* [And What If Health Guided the World?], explaining that the goal of a health system should be *health,* not drug sales.[17] The same goes for the economy: the goal should be *well-being,* not the sale of goods and services.

16 Pottier 2021.

17 Laurent 2021b: 23.

Environmental sustainability further underscores the limitations of GDP as an indicator. The pursuit of GDP growth has often driven unsustainable resource exploitation, contributing to climate change, biodiversity loss and pollution. Since GDP does not deduct environmental costs or depletion of natural capital, it paints an incomplete picture of progress, where short-term economic gains mask long-term environmental degradation. As climate change escalates and resource scarcity becomes a pressing concern, ignoring these externalities in national accounting appears increasingly shortsighted and counterproductive.

In other words, GDP is an indicator of monetary activity, which measures only a small part of a much larger social and environmental economy. A rising GDP is perfectly compatible with a social recession (unemployment, poverty, inequality or insecurity) and an environmental crisis.

Questioning GDP as an adequate measure of societal well-being

In February 2008, the President of the French Republic, Nicolas Sarkozy, unsatisfied with the present state of statistical information about the economy and the society, asked the Nobel prized Professor Joseph E. Stiglitz to create a Commission, called the Commission on the Measurement of Economic Performance and Social Progress.[18]

In its report, the Commission states: "Indeed, for a long time there have been concerns about the adequacy of current measures of economic performance, in particular those solely based on GDP. Besides, there are even broader concerns about the relevance of these figures as measures of societal well-being. To focus specifically on the enhancement of inanimate objects of convenience (for example in the GNP or GDP which have been the focus of a myriad of economic studies of progress), could be ultimately justified – to the extent it could be – only through what these objects do to the human lives they can directly or indirectly influence. Moreover, it has long been clear that GDP is an inadequate metric to gauge well-being over time particularly in its economic, environmental, and social dimensions, some aspects of which are often referred to as sustainability."[19]

The Commission's Report claims that "the time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being. And measures of well-being should be put in a context of sustainability. Despite deficiencies in our measures of production, we know much more about them than about well-being."

However, this is not to completely reject GDP as an indicator, explaining that it continues to "provide answers to many important questions such as monitoring economic activity".[20] This is therefore about "changing emphasis".

In line with the explicit Stiglitz–Sen–Fitoussi Commission report, the OECD launched the "Better Life" initiative in February 2011.[21] However, the subjective dimen-

18 STIGLITZ et al. 2009.
19 STIGLITZ et al. 2009: 8.
20 STIGLITZ et al. 2009: 12
21 OECD 2011.

sions of quality of life make this indicator somewhat dependent on the political and social context of each country.

In these cases, it is more of an adjustment than a radical and total challenge to GDP.

Proposal of alternative indicators

In response to these criticisms, several alternative metrics have been proposed, including the *Genuine Progress Indicator* (GPI), *Human Development Index* (HDI) and the *Happiness Index*. These indicators seek to measure economic and social well-being more holistically, accounting for factors such as income distribution, environmental health, education and subjective measures of happiness. Many of these metrics have demonstrated strong correlations with positive societal outcomes, indicating that they may be more effective than GDP in promoting sustainable and equitable development.

Despite the availability of alternative indicators, challenges remain in shifting global focus away from GDP. The simplicity, historical precedent and widespread adoption of GDP make it a deeply ingrained standard. However, the need for a more nuanced approach to economic measurement is becoming urgent. The Covid–19 pandemic has underscored the fragility of systems built around GDP growth, revealing vulnerabilities in public health infrastructure, income security and social resilience. These developments have intensified calls for an economic paradigm that prioritises resilience, equity and environmental sustainability over sheer output.

In conclusion, while GDP has served as a convenient and influential measure of economic performance, it no longer aligns with the priorities and challenges facing contemporary societies. Its limitations in capturing social equity, environmental health and overall well-being render it insufficient for guiding policies aimed at sustainable and inclusive growth. Transitioning to more comprehensive indicators can help reshape our economic priorities, promoting an economic model that values human and environmental capital alongside traditional market productivity. Embracing a post-GDP framework represents an essential step toward achieving a more balanced and future-oriented understanding of economic success, one that addresses the complexities of human needs and ecological boundaries in the 21st century.

The ecological limits to growth

The concept of ecological limits is grounded in the recognition that the Earth's natural systems are finite. Natural resources such as fossil fuels, fresh water, arable land and mineral deposits are not limitless; they can be depleted or degraded beyond the point of recovery. Similarly, the Earth's capacity to absorb pollutants and waste, including carbon emissions, is also finite. As economic activity intensifies, these limits are increasingly tested, leading to environmental crises.

The foundational work of the Club of Rome's "Limits to Growth" (1972) highlighted the risks of pursuing unlimited growth in a world with finite resources. The report used computer modelling to project future scenarios based on various patterns of resource use

and environmental degradation. The findings were stark: if current trends of population growth, industrialisation, pollution and resource depletion continued, the world would face significant ecological and economic collapse by the mid-21st century. While some critics of the report have questioned its models, the underlying concern – namely, that the Earth's ecosystems cannot sustain endless growth – remains relevant today.

A core element of this contradiction is the environmental impact of resource extraction. The quest for growth often leads to the exploitation of non-renewable resources such as fossil fuels and minerals, as well as the overexploitation of renewable resources like forests and fisheries. The increasing carbon emissions associated with fossil fuel use have led to climate change, which threatens to destabilise ecosystems and human societies alike. Similarly, agricultural expansion to meet the needs of growing populations has led to widespread deforestation and the loss of biodiversity, which undermines the resilience of ecosystems.

The social impact or the unequal distribution of growth's costs

Another significant contradiction between economic growth and environmental protection lies in the unequal distribution of the costs of growth. While some regions of the world have benefited immensely from economic expansion, others – particularly in the Global South – have borne the brunt of environmental degradation. For example, low-income countries often bear the environmental costs of industrial production, resource extraction and waste disposal, despite having contributed little to the global emissions that cause climate change.

Moreover, economic growth often exacerbates social inequality. The benefits of growth tend to be unevenly distributed, with wealth concentrated in the hands of a few while vast portions of the population remain in poverty. This inequality is both a cause and a consequence of environmental harm: poorer communities are more likely to suffer from pollution, deforestation and climate change, while wealthier countries and corporations often externalise the environmental costs of their growth. The result is a global system in which the most vulnerable are the least responsible for ecological degradation, yet bear the greatest burdens.

The EU Green Deal's search for solutions and its internal contradictions

The European Union Green Deal is an ambitious roadmap to transform Europe into a climate-neutral continent by 2050, fostering sustainability while driving economic growth.

Central to the Green Deal is the goal to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. This includes a transition to renewable energy, energy efficiency improvements and promoting circular economies. Key initiatives include the "Fit for 55" package, aiming to align EU policies with climate targets, and the

Just Transition Mechanism, ensuring support for regions and sectors most affected by the transition.

The Deal also focuses on biodiversity restoration, sustainable agriculture through the Farm to Fork strategy, and reducing waste and pollution. It promotes green innovation and infrastructure investment, creating opportunities for jobs and economic resilience.

Funding comes from the EU budget, public–private partnerships, and the European Green Deal Investment Plan, targeting €1 trillion over a decade. By aligning environmental, economic and social priorities, the Green Deal positions the EU as a global leader in sustainable development, demonstrating that economic growth can coexist with environmental stewardship.

Furthermore, the emphasis of the Green Deal on reducing emissions and promoting circular economies can challenge industries reliant on traditional supply chains and high resource consumption. According to its objectives, policies like carbon pricing and emissions trading schemes can impose added financial pressure, deterring investment or leading businesses to relocate production outside the EU – a phenomenon known as "carbon leakage".

To reconcile these principles, the EU must pursue innovation-driven competitiveness. Subsidies for green technologies, investment in renewable energy, and fostering a green industrial base could transform sustainability into a competitive advantage, aligning short-term economic interests with long-term environmental goals.

This was the EU's initial project. The Green Deal programs promised to tackle climate change while advancing social justice through state-led decarbonisation efforts, while maintaining the competitiveness of the European economy, notably through the massive development of innovation. Meanwhile, it must be stated that today, the Green Deal seems to be getting overlooked. Here we attempt a brief explanation of this situation.

The easiest explanation is that implementing the Green Deal faces significant challenges despite its ambitious goals. Financial constraints are a primary hurdle, with the estimated €1 trillion investment requiring substantial contributions from Member States, private investors and the EU budget. Political divisions within the bloc complicate consensus on key measures, as Member States differ in economic capacities and reliance on fossil fuels. Transitioning industries face resistance due to fears of job losses, especially in coal-dependent regions. Additionally, ensuring a just transition while maintaining global competitiveness demands careful policy design. External pressures, such as reliance on energy imports and global supply chain disruptions, add complexity.

At the same time, several economists explain this critical situation by the intrinsic contradictions of the Green Deal, advocating compatibility between sustainability and economic growth.

The internal contradictions of the Green Deal are becoming more and more pronounced, as it is regularly attacked on all sides. At the beginning of 2024, as the European Commission prepared a new 2040 CO_2 emissions reduction target,[22] its Green Deal was undergoing a major test: farmers, industrialists, public opinion and even governments were questioning it and calling for a "regulatory pause". And this situation has continued ever since.

[22] European Commission 2024c.

Furthermore, lately, the EU's Green Deal seems to be relegated to a second place, put in parentheses in some way in the political agenda. Moreover: for several political parties, such as Germany's AFD[23] and the French National Rally,[24] questioning the Green Deal becomes one of the pillars of their strategy. Let me mention, however, that this political trend is by no means driven by the above-mentioned contradictions in relation to environmental protection. However, the analysis of such policies is not closely related to the subject at hand.

To sum it up in a few words, we could say that the Green Deal either goes too far (from the point of view of competitiveness ambitions), or not far enough (from the point of view of degrowth advocates).

From the first point of view, it goes too far, slowing down the performance of European industries. While from the other point of view, it does not sufficiently call into question the necessary break that Western societies absolutely must make with consumerism and productivism.

In short, he disappoints both opposing parties.

Alternative models of economic development

Given the contradictions between economic growth and environmental sustainability, alternative models of economic development have gained increasing attention.

Degrowth

One such model is the concept of *degrowth,* which calls for a deliberate reduction in economic activity in the pursuit of ecological sustainability, social equity and well-being.

Degrowth is, first of all, a reduction in production and consumption to lighten our environmental footprint. It would be planned democratically, in a spirit of social justice, and with concern for well-being. It is a kind of great macroeconomic regime to allow countries in environmental excess (mainly rich countries) to return below a sustainable threshold.[25]

Degrowth proponents argue that the obsession with GDP growth has led to a focus on quantity rather than quality of life, and that human flourishing is better achieved through a reorientation of priorities toward sustainability, social justice and community well-being.[26] Rather than seeking perpetual growth, degrowth advocates call for a redefinition of prosperity that emphasises environmental stewardship, reduced consumption and the redistribution of resources.[27]

23 MENNERAT 2025.
24 BOURGERY-GONSE 2025.
25 PARRIQUE 2022.
26 KALLIS 2011.
27 LATOUCHE 2024; PARRIQUE 2022.

Degrowth – the planned and democratic reduction of production and consumption as a solution to the social-ecological crises – is slowly making its way to the sphere of policy-making.

We often distinguish two projects attached to the concept of degrowth: the transition to a smaller and slower economy – *degrowth* strictly speaking; and the maintenance of this steady state over the long term – *aftergrowth*.

Because of its negative connotation, degrowth is often seen by many as a too radical option.

Post-growth

The more visionary *post-growth project* is to imagine a system that could make us prosper without growth. That is to say, to find a stationary economy, in harmony with nature, which guarantees our well-being whilst respecting planetary limits; where decisions are made together and wealth is equitably shared.

A profound ideological revolution underlies such projects: individualism would be traded for sharing and solidarity, predation for togetherness, the obsession with work and performance for well-being and hedonism.

Post-growth is a stance on economic growth concerning the limits-to-growth dilemma. It acknowledges that economic growth can generate beneficial effects up to a point, but beyond that point[28] it is necessary to look for other indicators and techniques to increase human well-being.

Steady-state economics

A third model is *steady-state economics*, which proposes a stable, non-growing economy that operates within the planet's ecological limits. Unlike the growth-driven capitalist model, a steady-state economy seeks to balance production and consumption with the regenerative capacity of natural systems. Advocates of steady-state economics, such as Herman Edward Daly (1996), argue that continued economic expansion is not only environmentally unsustainable but also unnecessary for human well-being. Instead, a steady-state economy would prioritise quality of life, equitable distribution and environmental protection.

Sobriety

Sobriety does not contradict hedonism.[29] The major diseases of developed countries – such as burnout, obesity, suicides, depression, loneliness – reveal a lack of meaning and a lack

[28] Wilkinson–Pickett 2010.
[29] Rabhi 2013: 8

of time. Sociologist Hartmut Rosa,[30] as well as South Korean born philosopher Byung-Chul Han[31] tell us that capitalism and the pursuit of growth create a vicious cycle of acceleration that ends up tearing us apart from the things that really matter to us.

The fundamental problem is that our obsession with economic growth makes us forget that the first ecological measure consists of consuming less.[32]

We need an "alternative hedonism":[33] one which would be centred on being, rather than having. "Less goods, more connections" was one of the first slogans of the degrowth movement.[34]

Another model could be the *circular economy,* which seeks to decouple economic activity from resource consumption and environmental impact. In a circular economy, products and materials are designed for reuse, recycling and regeneration, reducing the need for new raw materials and minimising waste. The transition to a circular economy would require significant changes in production processes, business models and consumption patterns. However, proponents argue that it is possible to achieve economic development while reducing environmental harm by focusing on efficiency, innovation and sustainability.

Meanwhile, degrowth proponents argue that recycling makes also part of those other false hopes which, we forget, consume energy, and above all, make us waste time.[35]

Conclusions

Our initial question was whether Growth and Sustainability were somehow reconcilable or is it an impossible equation?

Our analysis sought to demonstrate that there is a clear incompatibility between unlimited growth and sustainability, and that we must necessarily adapt our future strategy in both fields.

And this questioning of both sides goes much further than the confrontation of two economic approaches to the world. Being the roadmap of the European Union, these increasingly pronounced voices shake the very foundations of its global strategy. Which clearly means a further weakening of Europe on the international scene. Today, the European Green Deal is being questioned from all sides. The real question is what future can we draw in an already weakened geopolitical and economic situation?

Today the European Union's response to the growing challenges such as climate change, artificial intelligence and geopolitical tensions is the Competitiveness Compass.[36] In light of all that we have stated above, this "answer" seems neither coherent nor adequate.

30 ROSA 2010.
31 HAN 2015.
32 RABHI 2013.
33 SOPER 2020.
34 LATOUCHE 2024.
35 PARRIQUE 2022: 84.
36 European Commission 2025.

We must protect the Europe we want. At the time of its creation, the EU's fundamental values were prosperity, democracy, freedom, equity, peace and sustainable environment. The EU exists to ensure that Europeans can benefit from these fundamental rights. Meanwhile the new geo-strategical situation and the exponential degradation of the environment force us to rethink our fundamental strategies. We are facing an existential challenge now, as, eventually, we will be forced to choose between prosperity and environment.

The contradictions between unlimited economic growth and environmental protection are undeniable. The idea that the global economy can continue to expand indefinitely on a finite planet is fundamentally flawed, and the environmental consequences of unchecked growth are becoming increasingly apparent. The pursuit of perpetual growth leads to resource depletion, environmental degradation and exacerbates social inequalities, all of which undermine the long-term sustainability of human societies.

We must be aware individually as well as collectively that to resolve this contradiction, it is crucial to rethink the very foundations of economic development. Living without economic growth requires a total restructuring of the production apparatus, as well as strengthened democratic institutions to ensure the protection of citizens, the public good, common goods and civil liberties. Sustainable economic models, such as post-growth and steady-state economics, offer promising alternatives that prioritise environmental sustainability, social equity and human well-being over unending material expansion.

The transition to these new models will require systemic changes in political, economic and social structures, including the redesign of production and consumption systems, the implementation of progressive environmental policies and the fostering of a cultural shift away from consumerism. While the challenges are significant, the potential benefits of reconciling economic development with ecological protection are vast, offering the possibility of a more just, resilient and sustainable world for future generations.

We have seen that many voices are therefore raised to speak of the obsolescence of GDP as a main indicator nowadays. However, it is clear that neither political strategy nor the mainstream economic decisions go far enough for the moment to provide a coherent response to these major contradictions, yet recognised and highlighted by many. Meanwhile, a radical break with our mainstream economic system seems necessary in order to ensure effective protection of the environment. Or to put it more clearly: from the point of view of coherence, this necessary radical break represents the only real way to ensure this protection in the medium and long terms.

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Social and Labour Market Impacts of the Green Transition in the European Union

One of the key challenges of the decarbonisation process to mitigate climate change is how to maintain labour market balance and safeguard social welfare policies during the green transition linked to digitalisation and demographic change. While many jobs in carbon-intensive sectors are being lost or transformed, there is an increasingly obvious shortage of skilled workers in green sectors. An overview of the social and labour market impacts and trends of the green transition is hampered by the fact that a generally accepted approach and conceptual framework for the concept of green jobs has not yet been developed, and its embeddedness in the labour market is assessed based on different methodological measures. Drawing on the relevant literature, surveys and databases, the paper argues that the EU's 'just transition' initiative is an essential tool and precondition for the green transition, which requires both the mapping of processes that facilitate the adaptation of labour market mechanisms and the tailor-made use of surveys that underpin evidence-based approaches.

Keywords: green transition, European Green Deal, green job, green skill, just transition

Introduction

As with the effects of industrial revolutions and globalisation, the decarbonisation process, which mitigates the effects of climate change, has a major impact on the economies and workers of countries, regions and sectors worldwide. One of the key challenges for both the European Union (EU) and the OECD Member States is how to preserve the traditional welfare state and social security systems during the decarbonisation of the labour market – the green transition – which is also closely linked to the changes brought about by the digital and the demographic transition.[2] Balancing climate action with a predictable and stable labour market involves a number of economic, political and social tensions, due to the loss and transformation of some jobs in carbon-intensive sectors, the weakening of the sustainability of social protection and welfare policies,

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[2] Petmesidou–Guillén 2022.

and the challenges of meeting the new skills required by the emergence of green jobs that contribute to preserve or restore the environment.[3] At the same time, there is an increasingly evident shortage of suitably skilled labour in the so-called green sectors such as renewable energy and energy efficiency, which poses further complex problems and challenges in terms of education, training and labour market integration in the whole of the EU, with special regard to the Central and Eastern European (CEE) and Western Balkan countries.[4]

The social and labour market impacts of the green transition have been the subject of numerous surveys, policy papers and studies, but a generally accepted conceptual framework for the green transition has not yet been developed. In particular, diverging interpretations of the concept of green jobs have been an obstacle to common action by Member States.[5] As a consequence, the data available from the various databases do not necessarily refer to the same phenomenon and are therefore of limited use in describing the impact of the green shift on the labour market, in particular with regard to its territorial, economic and social aspects, the characteristics of jobs and changes in the living conditions of the groups of workers concerned. These phenomena, like the effects of digitalisation and demographic change, present risks and opportunities, which call for both a mapping of the processes shaping the environments that are at the forefront of the adaptation of current labour market mechanisms and an understanding of the content and methodological specificities of the surveys that underpin evidence-based approaches.

Although addressing the impacts of climate change has been on the policy agenda of EU and OECD countries for decades, the assessment and management of the labour market impacts of changes brought about by green policies and stricter environmental regulation has only recently come to the fore. Addressing these increasingly pressing challenges has given rise to the EU's 'just transition' agenda, which has recently become a dominant narrative in policy discourse, strategy documents and academic research.[6] The policy framework for the just transition is the European Green Deal (EGD), which aims to kick-start the green transition in the EU and ultimately ensure the achievement of the 2050 climate neutrality target.[7] The EGD is in fact a package of policy measures that initiates a series of economic reforms that will undoubtedly change the way we produce and consume and thus affect both the redistributive (protective) social policy systems of the Member States and the economic (productive) social policies pursued by the EU. In response, the EGD underlines that the green transformation must take into account social justice aspects alongside climate protection.[8] In order to reduce economic inequalities and social tensions, the EGD seeks to link Europe's green transformation to an inclusive growth strategy for ecological modernisation. The Just Transition Mechanism (JTM), one of the main pillars of the EGD that underpins the concept of

3 ILO 2023: 4; OECD 2023; OECD 2024.
4 RÖSCH–EPIFANIO 2022; IGNJATOVIĆ et al. 2024.
5 OECD 2023; URBAN et al. 2023.
6 GALGÓCZI 2020; SABATO et al. 2023; DING–HIRVILAMMI 2024.
7 European Commission 2019.
8 ZIMMERMANN–GENGNAGEL 2023: 540.

just transition with concrete programmes, plays a key role in creating the supportive environment needed to make the transition a reality.

Another cornerstone of a green and just transition is the creation of green jobs. Reliable and informative data is essential to assess the need for jobs and to define their roles. This provides the basis for ensuring a green workforce with the right knowledge, skills and qualifications, the lack of which is a major impediment to the green transformation. In the European Union, for example, in the second quarter of 2022, nearly 30% of firms in the sectors and services concerned reported labour shortages and skills mismatches, making it difficult to fill vacancies or create new ones. However, the data on jobs created by green policies varies widely, mainly due to a lack of consensus on how to measure green jobs.[9] This is because different studies and institutions use different approaches, which makes it difficult to assess the impact of green policies consistently across and between countries.

While the concept of green and just transition has attracted increasing interest, including research on the sustainability of the welfare state and on eco-social policies, relatively less attention has been paid to identifying and analysing aspects that influence the labour market impacts of the transition. Against this background, the paper seeks to answer the question of how the sustainability of social-welfare policies and labour security are affected by changes in labour market processes in the process of green and just transition. The paper argues that the EU-initiated just transition is an essential instrument and precondition for green transition. It highlights that within the complex and integrated framework of green transition, green jobs are seen as an employment opportunity, green skills as a training and retraining objective and a supportive environment as a comprehensive framework for social inclusion.

The analysis is based on the current literature on the subject, the EU and other international organisations (OECD, International Labour Organisation), influential public policy institutes and international statistical data.

The green transition environment: Competing paradigms and trade-off effects

Different approaches to green transformation are born out of different interpretations of the causes of the climate crisis, ranging from market-embracing green growth to radical anti-capitalism. At the same time, these debates have significantly broadened the interpretative frameworks of both green and just transformation, including, among others, the main elements of degrowth, the post-growth alternative advocating the decoupling of economic growth and welfare, and doughnut economics, situated between the minimum of consumption and the planetary environmental maximum.[10] Critics also point out, however, that in fact many socially beneficial and environmentally beneficial post-productivist forms of work – such as care and voluntary work – have emerged over

[9] OECD 2023: 21.

[10] Antal 2021: 186; Mandelli 2022: 13.

the past decades outside the formal labour market, but are ignored or even discouraged by employment services and social security systems.[11] This in turn means that a balance must be found between employment based on economic growth and decarbonisation.

The different concepts and paradigms clearly show that the goals and means of the green transition should reconcile with the achievements of social security and welfare policies based on social redistribution.[12] Since the end of the 19th century, welfare states have developed redistributive and protective social systems based on social rights, which have been able to manage social conflicts, create social security and ensure the well-being of their citizens. The most important instruments are health, pension, family and unemployment benefits and minimum income schemes.

In contrast to the protectionist approaches of the traditional nation state framework, the EU is pursuing a different, productive, i.e. economy-oriented social policy, based on the responsibility of citizens and promoting active participation in the labour market. Its main instruments are supply-side measures, such as demand-driven training schemes and employment support services. This paradigm shift is also reflected in the EU's Lisbon Strategy, announced in 2000 and renewed in 2020, which sees active labour market participation as a right to different levels of social benefits, as opposed to rights-based social protection.[13] In other words, the work–welfare nexus depends on the level of growth and the labour market demand it generates.

The two social policy models have created a division of labour between the EU and the Member States.[14] Despite the fact that national welfare systems have taken over many elements of productive social policy, this does not mean that the position of protective social policy systems has been weakened. Preserving the latter is also necessary because, in the context of the green transition, both social policy models are facing serious challenges, against the background of demographic and digital transition.

Demography, and particularly the ageing of the population is a major challenge for almost all European countries. The phenomenon of an ageing society is a complex problem, based on a persistently low birth rate on the one hand and an increase in the number of older people, the average life expectancy and the old-age dependency ratio on the other. The European Commission forecasts that the population of the European Union (EU) will peak around 2026 and then gradually decline in the decades thereafter. As a long-term consequence, the EU working-age population will be 57.4 million fewer by 2100, while the dependency ratio of older dependants will start to rise sharply (from 33% to 60% by 2100).[15] This trend is supported by medium-term projections that over the next 30 years, the number of people aged 65 and over will increase by 41%, while the number of people aged 80 and over will increase by 88%.[16]

11 DUKELOW–MURPHY 2022: 512.
12 GRAZIANO 2024: 33; ZIMMERMANN 2024: 59.
13 TÓTH 2018.
14 ZIMMERMANN–GENGNAGEL 2023: 528.
15 European Commission 2023.
16 European Commission 2022.

In this context, the translation of the "green and digital transition" into practice cannot do without considering and adapting the synergies and trade-off effects of demographic change.[17]

Demographic changes will also have a negative impact on the human resources and competitiveness of Member States, as ageing and declining working age populations are expected to exacerbate labour shortages, increase the pressure on public budgets and contribute to further widening disparities between regions. Consequently, more and more older people will be dependent on the financial and social care of a declining working age population.[18] This will be exacerbated by a deepening polarisation of jobs and widening wage gaps, linked to the spread of non-traditional forms of employment (e.g. online work) and the decline of traditional jobs requiring medium pay and intermediate skills.[19] These trends are linked to a steady widening of the generational gap in social security: young people in non-traditional employment find it much more difficult to access social security benefits than older people.

A typical example of trade-off effects is carbon pricing, which is seen by many as an effective tool to reduce GHG emissions, and which would lead to significant and lasting reductions in GHG emissions, but also to increases in energy and raw material prices. The associated costs would disproportionately affect vulnerable groups in society (especially the elderly) and low-income households who need offsetting measures. Homes left unheated could have serious health impacts, which would increase social costs, while the additional costs could be covered by revenues from various carbon taxes. As a further example, the ageing of the workforce may be partly offset by the job-creating effects of digitalisation and automation,[20] while new digital technologies may improve access to health and social care in ageing societies. At the same time, technological change may increase the digital divide, as older people–workers find it harder to adapt to new skills and competences. Only 28% of people aged 65–74 have basic digital skills, compared with 70% for both 16–24 and 25–34-year-olds, a figure exacerbated by macro-level and regional differences between Member States.[21]

This indicates that technological innovation and digitalisation have the potential to be an effective tool to address the challenges of the green transition, but 44% of European citizens currently lack basic digital skills, which is a barrier to using digital technologies for everyday tasks and accessing services offered online.[22] Based on current trends, if the EU does not engage a much wider range of target groups in education and training than in the past, only 59% of the population will have at least basic digital skills by 2030, compared to 56% today.[23] Developing the digital skills of the population is therefore one of the EU's biggest challenges, affecting all its strategic objectives.

In terms of employment, the projections are mixed: the International Labour Organization (ILO) estimates that the decarbonisation process, supported by digitalisation,

17 European Commission 2023a: 1.
18 Tóth 2024: 128; Szűcs 2024: 95.
19 Petmesidou–Guillén 2022: 321.
20 Fási 2022.
21 Eurostat 2023b.
22 Eurostat 2023a.
23 Eurostat 2023a.

will create 24 million new jobs and only 6 million job losses by 2030, while the OECD projects a more modest increase.[24] The OECD also warns that the digitally enabled jobs created by the transitions may not necessarily require more highly skilled and better paid workers than at present, and that less stable forms of employment are likely to emerge compared to traditional employment.[25]

Green skills are essential to fill green jobs that match the needs of the sector. This means not only skills, but also a conscious attitude towards green professions and skills such as systems thinking and empathy. In contrast, only one in eight workers worldwide have some form of green skills. According to the World Economic Forum, nine out of ten jobs will need digital skills by 2030, while in 2020 only 44% of the EU population had basic digital skills and only one in five had digital skills beyond basic.[26] Consequently, as things stand, labour market supply is not matching the requirements of the growing number of jobs requiring green skills. In practice, this means, for example, that more than one third of the EU workforce will need to be retrained in the near future, while 80% of European workers have already left the education system and entered the labour market.[27] However, this implies the possibility of a further trade-off between the dynamic effects of labour market demand and the potential added value of green growth on the one hand, and the costs of further training and the additional expenditure needed to replace the incomes and labour force of active workers (typically adults) who temporarily drop out of the labour market on the other. All of this, in a difficult global economic environment and the associated socio-political tensions, could significantly slow down the green transition.

All in all, the green transition is a complex problem, made up of factors that often involve conflicting goals and ambitions. Among these, the work vs. environment dilemma is of particular importance, framed from the perspective of labour market change by the combined impact of green, demographic and digital transitions.

The green transition and the just transition

The origins of the just transition go back to the workers' movements of the 1970s, which sought to respond to the problem of how to reconcile interventions to mitigate the effects of climate change with their social and labour market consequences. This situation is best expressed in the dilemma of work versus environment, which has become increasingly acute as a result of the acceleration of climate change, the effects of which are increasingly felt in everyday life.[28] In response to this complex set of problems, the European Commission launched the European Green Deal (EGD) in December 2019, with the explicit aim of making Europe the world's first carbon neutral continent by

[24] ILO 2018: 35; BOTTA 2019: 7; VANDEPLAS et al. 2022: 5.
[25] OECD 2021: 33.
[26] World Economic Forum 2020.
[27] McKinsey 2022.
[28] HOFFMANN–PAULSEN 2020; ZIMMERMANN–GENGNAGEL 2023: 525.

2050. The European Climate Law, adopted in 2021, also set a sub-target in the form of a "Fit for 55" package to reduce emissions by 55% by 2030 compared to 1990 levels.[29]

The EGD sees the green transition as an important stimulus for economic growth but also wants to reflect the socio-economic impacts of climate change and the ecological transition. This is reflected in the ILO's earlier concept of just transition, which is based on the premise that social justice and economic stability must be achieved through the radical changes needed to achieve ecological goals.[30] The EGD is built around 10 target areas that express specific aspects of the transition. Eight of these specifically cover economic sectors, with the remaining two target areas "Financing the transition" and "Leave no one behind" (Just Transition). The latter area is being implemented through the Just Transition Mechanism (JTM), which together with the Social Climate Fund (SCF), part of the Fit for 55 packages, forms the social dimension of the EGD. The main objective of the JTM and the SCF is to mitigate the negative social and labour market impacts of the green transition.

The JTM is a funding mechanism under Cohesion Policy to support the regions and communities most affected by the transition to a low-carbon economy, based on three pillars: the Just Transition Fund (JTF), the InvestEU Just Transition Scheme and the Public Sector Loan Facility.[31]

The Territorial Just Transition Plans (TJTPs) are the key governance instruments of the JTM. In the TJTPs, Member States were required to develop plans outlining how they will ensure a just and inclusive transition to a low-carbon economy. These plans had to identify the regions and communities most affected by the transition and define measures to support them, while ensuring social dialogue and stakeholder involvement. The introduction of both the JTM and the TJTPs demonstrates that territorial cohesion, a key pillar of cohesion policy, is increasingly linked to the implementation of the strategy for a "smarter and greener Europe".[32]

The PPA is essentially an economic instrument that prioritises regional development, job creation and the implementation of active labour market policies (ALMPs), and from this perspective it continues the EU's productive social policy approach. The EGD declares that it "protects citizens and workers most vulnerable to the changeover by ensuring access to retraining programmes, employment in new economic sectors or energy-efficient housing".[33] Typically, it sees addressing energy poverty – which occurs when

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29 Official Journal of the European Union 2021.

30 The concept of a just transition was first highlighted by the International Labour Organization (ILO) in its 2015 "Guidelines for a Just Transition". According to the ILO, the aim of a just transition is to ensure fair working conditions, social inclusion and the eradication of poverty in the transition to ecological sustainability. The EU has adapted this approach in the Paris Agreement. In practice, the just transition was first put into practice in the framework of the Energy Union in 2017 and became part of the EGD in 2019.

31 The JTF provides financing support to fossil fuel-dependent regions and communities, for example in the areas of coal mining and oil and gas extraction, the Invest EU programme supports long-term sustainable investments, for example in renewable energy and clean transport systems, and the Public Sector Loan Facility focuses on infrastructure and public services. See in detail European Commission 2020; European Union 2021a; European Union 2021b.

32 Kaiser 2023: 19.

33 European Commission 2019: 16.

a household must reduce its energy consumption to a degree that negatively impacts the inhabitants' health and wellbeing – not in the form of direct financial payments, but in the form of subsidies for retrofitting or insulation for poorer households.

In contrast, the SCF offers financial compensation to vulnerable households, micro-enterprises and public transport users in the form of direct income support to offset rising housing, transport and energy prices. Noteworthy that together with the 25% co-financing by Member States, the SCF will mobilise a total of €86.7 billion, more than one and a half times the amount of the JTM for the period 2021–2027. This is certainly a new element in EU social policy, which moves away from the ALMP towards the traditional protectionist approach of Member States.

The introduction of the SCF is a milestone, as the EU has explicitly recognised that social inclusion can be achieved in the context of the green transition. Overall, the JTM is based on productive social policy, while the SCF is based on protective social policy, so that in essence the division of labour between the two models is now also being implemented at EU level. However, this integrative approach does not in itself resolve the underlying problem of the work vs. environment dilemma at the heart of the just transition, which requires a review of the conceptual framework and measurability of green jobs as a key element of the production chain.

Green jobs

Current trends and forecasts show that green growth could generate significant demand in the labour market, especially in the clean energy, clean technology and digital industry segments. Over the last ten years, employment in the EU's environmental goods and services sector has grown faster than the overall employment rate. Between 2010 and 2021, the employment rate in the sector will increase from 2.1% to 2.5%, representing around 5.2 million full-time workers.[34] Green industries and related sectors not only create new jobs, but also absorb large numbers of new workers, including those coming from traditional fossil fuel industries. Consequently, green job creation has the potential to offset the negative effects of decarbonisation on employment.

The labour market implications of the green transition are expected to manifest themselves in multiple ways and generate multiple changes. New types of jobs are expected to emerge in newly created occupations that did not previously exist, while at the same time there will be occupations and jobs that will disappear, particularly in high-emission activities such as coal and gas extraction, and finally the green transition will also be accompanied by changes in the skills required – from construction to fashion and scientific research.[35]

The EU has also responded to global trends, both in the form of the EGD mentioned above and the Net Zero Industry Act (NZIA), which aims to create 2.5 million jobs by 2030, resulting in an overall increase in employment of 1.2% to promote clean technologies and green jobs in Europe. And the Net Zero Industry Act calls for an increase in the

34 Eurostat 2024.
35 OECD 2024: 14.

production of technologies that facilitate the transition to clean energy and that have very low, zero or negative greenhouse gas emissions.[36]

Although green jobs are found in all sectors, they are currently most numerous in manufacturing, construction and transport. Other services, which account for a larger share of total employment worldwide, are mostly made up of occupations that are neither green nor GHG-intensive (green-neutral, the so-called white sector). According to Deloitte, emerging sectors such as hydrogen also offer opportunities for job creation. They estimate that globally, the hydrogen sector could create up to 10,000 new jobs by 2030 and up to 100,000 by mid-century.[37]

The interest in green jobs is also boosted by the fact that wages in this sector are higher than average worldwide. However, given the obvious large disparities between wage categories across countries, the multifaceted nature and scope of green jobs have to be duly taken into account. Middle-aged workers (35–54 years old) are slightly more likely to be in green jobs, and men are more likely to be in green jobs. For women, this is both an advantage and a disadvantage: on the one hand, their concentration in services puts them at less risk of job losses due to the green transition, and on the other hand, it raises questions about their ability to take advantage of the growing employment opportunities in the highest paying, expanding sectors.[38]

In order to measure the differences in more detail, the OECD introduced the concept of "green-driven occupations" which includes both jobs that directly contribute to reducing emissions as well as those that provide products and services required by green activities.[39] Taking this broad but operational definition which departs from the task-based approach to green jobs, the OECD published an overarching report in 2024 with an aim of measuring the effects of climate policies on the changes of the labour market.[40] By considering the percentage of green-driven occupations in wage and salary employment, by country and hourly wage category, the report found that in the 26 countries surveyed by the OECD, the prevalence of green occupations is higher among higher-paid workers than in lower wage categories. In the Nordic and Anglo-Saxon countries, there is a large bias in favour of green jobs: in Norway, 31% of higher-paid workers and 15% of lower-paid workers worked in green jobs, while in Denmark the corresponding figures are 23% and 9%, respectively. In Canada the difference is 24 vs. 12, and in the UK 22 vs. 12%. By contrast, in Hungary, Italy, Luxembourg, Slovenia, Portugal, Belgium and the Netherlands, green jobs are more common among lower paid workers. In our country, 36% of lower earners, 22.2% of middle earners and 20.5% of higher earners worked in a "green" job during the period[41] (Figure 1).

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36 European Commission 2023b.

37 Deloitte 2022.

38 Erdélyi 2024.

39 OECD 2024: 68.

40 As regards the methodology used, the report's estimates relied on the latest version of the O*NET database and the selected country-specific sources. See in detail OECD 2024: 94.

41 OECD 2024.

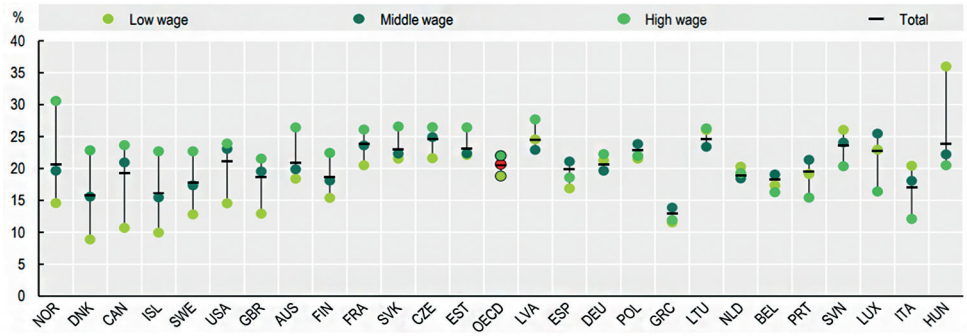

Figure 1: Incidence of green-driven occupations by country and wage category 2018

Source: OECD 2024: 94

Despite the OECD's report clearly justifying the significant labour market impacts of the green transition, there is currently no generally accepted definition of what we exactly mean by green jobs. International organisations and national governments define green jobs in different ways. According to the ILO definition, a green job is a decent job, whether in the agricultural, industrial, service or government sectors, that contributes to preserving, restoring and improving the quality of the environment.[42] The European Centre for the Development of Vocational Training (Cedefop), for example, defines green skills as "the knowledge, skills, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society".[43] Thus, while the ILO defines the essence of a green job as its simultaneous role in mitigating environmental impacts and creating social security, the OECD–CEDEFOP focuses on skills.

However, these definitions are relatively broad and not operationalised, i.e. they are not applied systematically to the data available worldwide. This has led to the need for an empirical approach to green jobs based on surveys and analyses, which are divided into two main strands.[44]

Top-down approaches consider green any job within specific sectors, such as the renewable energy sector, facilities or activities that contribute significantly to preserving or restoring environmental quality, keep emissions low or reduced, and minimise waste and pollution. Bottom-up approaches, on the other hand, start from the characteristics of jobs and occupations, regardless of the sector of the economy in which they operate.

Linked to this division are surveys and evaluations using methodologies with different interpretative frameworks. The top-down approach includes the regular report based on the International Renewable Energy Agency (IRENA) survey of the number of full-time equivalent green jobs in the renewable energy sector.

The other Eurostat database often cited for its top-down approach is the environmental goods and services sector (EGSS). The EGSS, also referred to as "eco-industry" or "environmental industry", includes all organisations that are engaged in environmental

42 MKIK 2020: 4.
43 OECD–CEDEFOP 2014: 20.
44 OECD 2023: 22.

production, i.e. economic activities that result in products for the environment and natural resource management. Examples of the former include electric vehicles, catalytic converters and filters that reduce pollutant emissions, wastewater and waste treatment services, noise insulation works or restoration of degraded habitats. Examples of the latter include renewable energy production, energy-efficient and passive buildings, desalination of seawater or rainwater recycling and materials recovery. The EGGS also measures employment in full-time equivalent jobs but covers a wider area than IRENA.

The advantage of top-down approaches is that they are relatively easy to interpret and analyse, and they allow for a more nuanced analysis by identifying jobs that support green activities in otherwise non-green sectors and firms. The latter is also a major drawback, as there may be jobs in a green sector or firm that are not related in any way to green activities or the production of green products.

Bottom-up measurements are based on the characteristics of each job, mainly the extent to which it supports green goals, requires green skills and competences, and is decent in terms of wages, safe working conditions, job security, career opportunities and workers' rights. This group includes the task-based approach used by the OECD, which is an excellent tool for assessing the labour market effects of structural transitions (demography, digitalisation).[45] It has the advantage of providing direct information on the needs of the green labour market, irrespective of sectors, and on how workers can transition to new jobs or sectors through retraining or upskilling. Its disadvantage is that it basically provides a snapshot of green jobs, while the nature and components of tasks may change over time and the levels of data collection (national, regional, local) are not all the same across countries.[46]

The latest OECD Labour Market Survey adds new perspectives to task-based approaches. Rather than looking at how the functioning of the labour market contributes to achieving the green transition, it focuses on the impact of climate change mitigation policies on employment and incomes. The survey considers all jobs (green-driven occupations) that are likely to be affected by the transition to net zero, not just those that are considered green per se.[47]

The impact of the green transition on the labour market in figures: The situation of Hungary in international comparison

According to EGGS estimates based on a top-down approach, employment in the EU green economy grew from 3.2 million FTE in 2000 to 5.2 million FTE in 2021, accounting

45 OECD 2023.

46 The most widely used resource is the Occupational Information Network (O*NET) of the U.S. Department of Labor, which provides information on a wide range of occupations, the tasks they entail, and the skills needed to perform them through direct surveys, expert consultations and case studies.

47 OECD 2024: 78.

for around 2.5% of total EU employment.[48] The growth in green employment between 2010 and 2021 was largely driven by an increase in the number of jobs related to energy resource management by 525,000 FTE (full-time equivalent). The second largest contributor to the growth in green employment was waste management, where the number of jobs increased by 259,000 FTE (+24%) over the period. Employment in all other sectors grew by varying degrees. Smaller increases were recorded in water management (+4%), wastewater management (+10%) and other environmental protection (+22%).[49]

The share of employment in the EU green economy compared to the total EU economy will increase by 0.4% (or 1.1 million full-time equivalents) between 2010 and 2021. This represents an increase of 25%, compared to an increase of only 7% for the EU economy as a whole over the same period. Steps taken to support the green transition will create more green jobs in the EU by 2030, notably by applying the principles of the circular economy and moving towards a low-carbon economy. It is therefore expected that policies, measures and investments will increase the share of green employment in total EU employment by 2030.

In most EU Member States, the share of green employment in total employment increased between 2014 and 2021. However, there were exceptions, such as Malta (–13%), Hungary (–13%), Romania (–12%), Finland (–8%), Latvia (–4%) and Cyprus (–1%). The most significant increases were recorded in Bulgaria (104%), Luxembourg (70%) and Poland (52%).

In 2021, the highest shares of green employment as a share of total employment were recorded in Luxembourg and Estonia, where sustainability employment exceeded 5% of total employment. Finland and Austria also recorded shares close to 5%. In contrast, the lowest rates of 1.5% or less were recorded in Hungary and Malta.[50]

Overall, the number of people employed in environmental management in Hungary is below the EU average and has been slowly declining in recent years.[51]

The impact of the green transition on the labour market in the renewable energy sector is measured by IRENA and the ILO, which also take a top-down approach. The latest figures show that by 2021, 12.7 million jobs will have been created thanks to the expansion of renewable energy.[52] A year later, the ILO and IRENA have already registered 13.7 million jobs, of which about one third are linked to the solar industry, creating one and a half times as many jobs as if the same amount of money were invested in fossil industries.[53]

In terms of types of renewable energy, Hungary has traditionally performed well in biofuel and biomass production.[54] The biomass biofuels and biomass production sector

48 This indicator is directly based on data published by Eurostat, and the underpinning methodology can be found in Eurostat. EU-level data are based on Eurostat estimates. A detailed discussion of statistics on the environmental goods and services sector can be found in Eurostat 2016.

49 Eurostat 2024.

50 European Environment Agency 2024.

51 While 46,778 people were employed in the sector in 2020, this figure fell to 42,969 in 2021 (Eurostat 2024).

52 IRENA–ILO 2022: 3.

53 IRENA–ILO 2023.

54 Hungary is highly suitable for biomass production, which accounts for more than 80% of all renewable energy sources (MKIK 2020: 12).

accounts for the largest share of green jobs in Hungary. This is confirmed by IRENA's latest report, published in 2023, which shows that the number of jobs in the renewable energy sector in Hungary is as follows: biogas 1,000, wind 1,000, geothermal 1,000, silica biomass 12,000, biofuels 20,000, solar and other solar 23,000. These figures show that the solar sector employs the second largest number of workers. This is in line with European trends, as the sector employed only 1,500 people in 2017, but has seen a large expansion from the following year onwards.

If we look at the share of people working in the total renewable energy sector in the active population compared to the other countries of the Visegrád Four (V4), we get the following figures (Table 1):[55]

Table 1: Share of renewable energy workers in the active population 2017–2023

	2017	2023
Hungary	0.8%	1.2%
The Czech Republic	0.5%	0.8%
Poland	0.4%	1.1%
Slovakia	0.6%	0.6%
Total V4 countries	0.5%	1%

Source: compiled by the author based on MKIK 2020, IRENA 2023

The data shows that in 2017, Hungary had the highest share of people working in the renewable energy sector in the total active population. It was followed by Slovakia and then the Czech Republic. Poland closes the gap, with half the share of Hungary.[56] By 2023, Poland will have grown the most, almost three times its 2017 value, but still lags behind Hungary, where, after a 50% increase, the share of people working in the renewable energy sector in the total active population is the highest in Hungary. The Czech Republic also saw a 50% increase, while Slovakia stagnated. For the V4 countries as a whole, the share of people working in the renewable energy sector in the active population doubled between 2017 and 2023.

According to the third bottom-up survey, 21% of workers in OECD countries worked in green-driven jobs between 2015 and 2019.[57]

Of these, the proportion of new and emerging occupations is 14%; the proportion of existing jobs that have increased in demand because they produce goods and services needed to make the green transition is 40%; and the proportion of existing occupations for which the skills needed have increased because of the green transition is 46%.[58]

[55] IRENA publishes detailed statistics on renewable energy capacity, power generation and renewable energy balances. This data is collected directly from members using the IRENA Renewable Energy Statistics questionnaire, official statistics; industry association reports and other reports and news articles. These resources are supplemented by desk research where official statistics are not available. MKIK builds on the detailed dataset of EGGS.

[56] MKIK 2020: 14.

[57] OECD 2024.

[58] OECD 2024: 68.

According to the survey, Hungary had a higher share of green jobs than the OECD average (23.1%), which is in line with regional trends. In Poland the share of green jobs is close to 24%, in the Czech Republic 24.3% and in Slovakia around 25%. It is also worth noting that in Germany and Slovenia, neighbouring the V4 countries, the rate is 21%, and in Austria 20% (Figure 2).

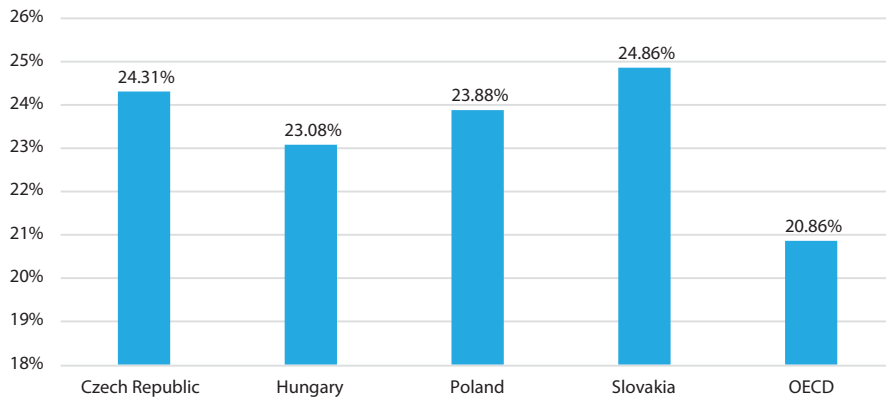

Figure 2: The average share of green jobs in V4 and OECD countries 2015–2019
Source: compiled by the author based on OECD 2024

In contrast to green jobs, the share of jobs in carbon-intensive sectors is significantly lower at only 6.1%. However, the share of these jobs is relatively high in Poland (10.5%), Lithuania (8.7%) and Portugal (8.4%). In the Central European region, Hungary comes next after Poland with 7.5% exposure, followed by Slovakia with 6.8% and the Czech Republic with 6.4%. Of our region, only Slovenia (5.3%) had a rate below the OECD average in the period under review (2015–2019).[59]

Hungary, therefore, is performing well in green-driven jobs, above the OECD average and just behind the V4 countries. However, it has the second highest number of jobs in carbon-intensive sectors among these countries.

Conclusions and recommendations

Today's societies face serious challenges from the impacts of climate change: carbon-intensive industries threaten emission reduction targets, exacerbate mass immigration that causes socio-political tensions, social and economic inequalities, and concerns about the sustainability of energy security.

The inevitable green transition is based on three interlinked labour market approaches: creating green jobs; defining green skills and developing the necessary training structures; and striking a balance between protective and productive social policies.

[59] OECD 2024.

The development of green jobs has a key role to play in this process, but the diversity of methodologies to develop a common understanding of the concept and to measure its presence on the labour market requires fine-tuned and tailor-made assessments, planning and interventions adapted to the specificities of each country or sector. This is particularly relevant in the case of Hungary, where the statistical data show a diverging picture in terms of the number of green jobs related to the green economy, renewable energy and the wider green jobs, including direct and indirect activities. However, more qualitative research activities are needed to identify the different regional and local potentials and drivers in detail, which could form the basis of a "tailor-made" green and just transition.

Importantly, the available evidence shows that achieving the objectives of the green transition can create jobs in the EU. Although most workers in green jobs were not in new jobs, the uptake of green jobs could continue to grow, as more than a quarter of jobs will be heavily influenced by the green shift in the coming years.

The main concerns for the creation of green jobs are accessibility, quality and the provision of the necessary competences. In the latter case, it is of paramount importance to motivate trainees to use the knowledge and skills they acquire to make green jobs a real alternative to carbon-intensive industries. In the absence of this, training is often a form of hand-out for workers, after which they return to carbon-intensive sectors that offer better conditions. This leads to the paradoxical situation whereby the costs of developing green skills are in fact used to strengthen the human resource capacities of traditional industries.

For the regions and groups of workers most exposed to the green transition, the support mechanism for a just transition under the EGD is of particular importance. Indeed, in the context of green growth, the question of "who should be compensated" is inescapable, where both a narrower approach focusing on specific target groups and a broader approach covering all workers may have a justification. The former argues that valuable and scarce resources should only be made available to the most affected groups of workers, as their exposure can be a source of scepticism and resistance to the green transition. The latter, on the other hand, argues that all workers deserve income support and a climate-responsive environment, as the wider social impacts of the green transition, such as rising energy prices or increased vulnerability of low-income households, need to be considered.

The reception of the EGD has so far been mixed. While many argue that the implementation of the EGD can accelerate the creation of green jobs and help "green" polluting industries, others believe that its growth-oriented approach means that the strategy cannot be a very effective counterweight to the effects of the climate crisis. Another criticism is that the JFW does not offer direct income support to workers who lose their jobs, focusing instead on the development of new skills. Although it refers to the European Pillar of Social Rights as an integral part of EU social policy, its practical application remains limited. Moreover, there is a lack of social participation in the preparation of national fair transition plans, which makes it difficult to involve local stakeholders and citizens. As a result, decision-making is largely centralised and does not provide sufficient opportunities for citizens to participate.

Overall, a fair transition is a key element of the green transition, but further reforms are needed to achieve it. The development of a supportive environment will play a key role in this, including a balance between the active labour market policy advocated by the EU and the rights-based protective social policy that is a cornerstone of national welfare policies, addressing inequalities in the triple transition and strengthening social rights alongside financial support for economic development.

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Bridging the Digital Divide: Pathways to a Competitive and Resilient European Union

Digitalisation is a key driver of economic transformation, influencing productivity, competitiveness and social inclusion across the European Union (EU). This study examines the macroeconomic impact of digitalisation, focusing on digital skills, digital business integration, digital infrastructures and the digitalisation of public services. The research explores the correlation between digitalisation and economic growth indicators such as labour productivity, gross value added (GVA) and exports, offering a comprehensive analysis of the EU's digital transition. Previous studies highlight the role of digitalisation in fostering innovation and improving efficiency, particularly through the integration of advanced technologies and digital infrastructures. However, digital disparities among EU Member States remain a challenge, necessitating coordinated policies to bridge the digital divide and ensure equitable access to digital benefits. This study contributes to the existing literature by analysing these disparities and assessing how digital transformation can support economic convergence and sustainability goals in the EU. Using a systematic review of academic literature and macroeconomic data, the study identifies key factors that drive digital competitiveness. Findings indicate that digital skills development, business digitalisation and strategic investments in digital infrastructure significantly enhance economic performance. Furthermore, digital public services play a crucial role in social inclusion, particularly in addressing youth unemployment and ensuring equitable access to opportunities. The results underscore the need for targeted policies that promote digital adoption across all EU regions, ensuring that the benefits of digitalisation extend beyond leading economies. By aligning digital strategies with broader economic and sustainability objectives, the EU can enhance its global competitiveness while fostering inclusive and resilient growth.

Keywords: digitalisation, European Union, economic competitiveness, labour productivity, digital skills, public services

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Introduction

Digitalisation has emerged as a pivotal force driving transformation across various sectors, fundamentally altering business operations, enhancing productivity and fostering economic growth. The integration of digital technologies into business processes not only streamlines operations but also creates new opportunities for innovation and competitive advantage. This transformation is particularly significant in the context of the ongoing digital revolution, which has been characterised by the rapid adoption of information and communication technologies (ICT) that reshape traditional business models and practices.[3]

Against this backdrop, the present study aims to examine and address the key elements driving digitalisation within the European Union, with a focus on digital skills, digital business integration, digital infrastructures and the digitalisation of public services. The study also aims to provide insights into the key macroeconomic context of digitalisation. In line with the objective, the central research question of the study can be formulated as follows: How can digitalisation drive competitiveness and resilience in the European Union, and what are the key macroeconomic factors influencing this transformation?

To answer this question, this study systematically reviews academic articles which focus on the macroeconomic context of digitalisation like labour productivity, gross value added and exports but also highlight important areas such as the digital skills, the digitalisation of businesses, the importance of building digital infrastructures and the digitalisation of public services, which are very important for improving the competitiveness of the European Union.

The impact of digitalisation and the development of technology on the European Union (EU) economy is profound and multifaceted, influencing productivity, economic growth and social inclusion. As the EU strives to become a leader in the digital economy, it faces both opportunities and challenges that vary significantly across its Member States.

Digitalisation has been identified as a critical driver of economic growth within the EU. Research indicates a strong correlation between digitalisation and productivity improvements, particularly through the adoption of advanced technologies and digital infrastructure. For instance, studies have shown that the integration of information and communication technologies (ICT) significantly enhances productivity levels across various sectors in the EU, with evidence supporting the positive effects of the Digital Economy and Society Index (DESI) on macroeconomic indicators.[4] Furthermore, the EU's strategic initiatives, such as the "Digital Europe Programme", aim to foster an innovative and sustainable economy, positioning Europe as a competitive global player.[5]

However, the benefits of digitalisation are not uniformly distributed across the EU. There exist considerable disparities in digital readiness and infrastructure among Member States, which can exacerbate existing economic inequalities. For example, while

[3] Wynn–Felser 2023; Ionașcu–Anghel 2020; Marienko et al. 2023.
[4] Mura–Donath 2023; Brodny–Tutak 2022a; 2022b.
[5] Małkowska et al. 2021; Pinto et al. 2023.

some countries have successfully harnessed digital technologies to boost economic performance, others lag behind, facing challenges such as inadequate digital skills and infrastructure.[6] This uneven progress necessitates coordinated policy efforts to harmonise digitalisation strategies across the EU, ensuring that all regions can benefit from technological advancements.[7]

Moreover, digitalisation plays a crucial role in enhancing social inclusion and addressing youth unemployment, particularly in rural areas. The digital transformation of public employment services (PES) is essential for engaging vulnerable populations, such as NEETs (Not in Education, Employment, or Training), in the labour market.[8] By leveraging digital tools, PES can better meet the needs of these individuals, fostering a more inclusive economy that capitalises on the potential of all citizens.[9]

In addition to economic and social dimensions, digitalisation is also pivotal in driving ecological transformation within the EU. The European Green Deal highlights the importance of integrating digital technologies to achieve climate neutrality by 2050. Digitalisation can facilitate more efficient resource management and promote sustainable practices across various sectors, including agriculture and energy.[10] For instance, precision agriculture, enabled by digital tools, enhances productivity while minimising environmental impact, thus aligning economic growth with sustainability goals.[11]

The main macroeconomic context of digitalisation

According to Halmai (2018), the fading of the European growth model can be attributed significantly to a slowdown in productivity dynamics, particularly in sectors that are crucial for digitalisation. The productivity gap between Europe and the United States is evident in industries that have embraced digital technologies. This gap underscores the necessity for Europe to prioritise its digital transition as a means to enhance growth potential and competitiveness.[12]

In line with this statement, it is certainly worth mentioning the report by Mario Draghi, which outlines a strategic framework for enhancing European competitiveness amid declining productivity and rising geopolitical challenges. It identifies three critical areas for action: closing the innovation gap with the U.S. and China, implementing a coherent decarbonisation plan and increasing investment to meet unprecedented needs. Europe must raise its investment-to-GDP ratio by 5 percentage points to levels not seen since the 1960s, while addressing high energy costs that are 2–3 times higher than in the U.S. The report emphasises the necessity for coordinated industrial, competition and trade policies, alongside a reform of governance structures to facilitate

6 Mura–Donath 2023; Neméný–Tóth 2023; Wigger 2022.
7 Mura–Donath 2023; Małkowska et al. 2021.
8 Simões–Marta 2024.
9 Simões–Marta 2024.
10 Belitz–Gornig 2023; Zēverte-Rivža et al. 2023.
11 Zēverte-Rivža et al. 2023.
12 Halmai 2018.

rapid decision-making and collective action among EU Member States.[13] The second part of the report analyses the EU's competitiveness challenges, particularly in energy and critical raw materials, exacerbated by high prices and volatility. Energy prices in the EU are currently two to five times higher than in the U.S., with 60% of companies citing energy costs as a major investment barrier. The EU's dependency on gas imports and spot markets contributes to this gap. Additionally, critical raw materials, essential for green technologies, face supply risks due to concentration in a few countries. The Critical Raw Materials Act aims to enhance domestic production and recycling, requiring at least 10% of mined materials and 40% of processed products to come from within the EU by 2030. Recommendations include improving joint procurement, diversifying supply sources and streamlining permitting processes.[14]

Research indicates that the impact of digitalisation on productivity is not uniform across Europe. For instance, companies in Eastern European nations have shown more pronounced benefits from investments in production digitalisation compared to their Western counterparts, largely due to their historical context and the rapid catch-up in digital capabilities post-Soviet era.[15] This suggests that targeted digital investments could yield significant productivity gains, particularly in regions lagging in digital adoption.

Moreover, the transition from a neo-industrial to a digital economy is characterised by the integration of advanced technologies such as artificial intelligence, data analytics and the Internet of Things (IoT). These technologies are pivotal in reshaping business models and enhancing operational efficiencies.[16] The European Union's Horizon Europe Programme exemplifies this commitment, as it allocates funding to accelerate the twin transition – both green and digital – across various sectors.[17] This strategic approach is essential for fostering innovation and improving competitiveness in the global market.

The construction sector, often cited as one of the least digitised industries in Europe, exemplifies the challenges faced in embracing digital innovations. Despite its significant contribution to GDP, the sector has struggled with productivity, highlighting the need for a concerted effort to overcome digitalisation barriers.[18] The integration of digital tools could streamline processes and enhance productivity, thereby contributing to the overall economic growth of the region.

Furthermore, the role of digital technologies extends beyond mere productivity improvements; they also influence business dynamism and competitiveness. Studies have shown that the adoption of information and communication technologies (ICT) is a strong predictor of business performance across various dimensions, including market and labour dynamics.[19] This correlation emphasises the critical role that digitalisation plays in enhancing the competitiveness of European economies.

13 Draghi 2024a.
14 Draghi 2024b.
15 Lastauskaite–Krušinskas 2024.
16 Ortega-Gras et al. 2021; Maucorps et al. 2023.
17 Ortega-Gras et al. 2021.
18 Torres et al. 2024.
19 Bacca-Acosta et al. 2023.

The macroeconomic context of digitalisation in the European Union (EU) is characterised by a complex interplay of economic growth, innovation and policy frameworks aimed at enhancing competitiveness and addressing disparities among Member States. Digitalisation is increasingly recognised as a critical driver of economic transformation, influencing productivity, employment and overall economic resilience.

One of the primary aspects of digitalisation in the EU is its role in fostering economic growth. Research indicates that digitalisation significantly contributes to productivity enhancements across various sectors. For instance, Mura and Donath (2023) highlight that coordinated digitalisation policies are essential for harmonising productivity and growth across EU countries, particularly given the existing disparities in digital capabilities among Member States.[20] Furthermore, Brodny and Tutak (2022a) emphasise that institutional support for technological innovations is vital for developing an innovative economy, which is closely linked to digitalisation efforts.[21] This is echoed by Nemény and Tóth (2023), who assert that digitalisation, information and communication technologies (ICT) are crucial for driving economic growth and improving competitiveness.[22]

Moreover, the EU's strategic initiatives, such as the Digital Europe Programme, aim to position Europe as a leader in the global digital economy by promoting advanced technologies and fostering a knowledge-based economy.[23] The emphasis on digital transformation aligns with the EU's broader goals of achieving sustainable development and ecological transformation, as articulated in the European Green Deal.[24] This initiative underscores the importance of integrating digitalisation with environmental sustainability, thereby enhancing the EU's competitiveness on a global scale.

However, the digital landscape within the EU is marked by significant inequalities. The Digital Economy and Society Index (DESI) reveals persistent gaps in digitalisation across Member States, indicating that some countries lag in areas such as broadband connectivity and digital public services.[25] Addressing these disparities is crucial for ensuring that all EU nations can benefit from the economic advantages of digitalisation. Veugelers et al. (2023) further note that the Covid–19 pandemic has exacerbated these divides, with digitally advanced firms accelerating their digital transformation while lagging firms struggle to adapt.[26]

In addition to economic growth, digitalisation is also linked to social inclusion and the empowerment of vulnerable groups. The integration of digital technologies in public employment services, for instance, is essential for ensuring that young people, particularly those in rural areas, can access opportunities and resources.[27] This reflects a broader trend where digitalisation is seen as a means to enhance inclusivity and resilience in the face of economic challenges.

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20 Mura–Donath 2023.
21 Brodny–Tutak 2022a.
22 Nemény–Tóth 2023.
23 Małkowska et al. 2021.
24 Belitz–Gornig 2023.
25 Reggi – Gil-García 2021.
26 Veugelers et al. 2023.
27 Simões–Marta 2024.

The relationship between digitalisation and labour productivity

The relationship between digitalisation and labour productivity in the European Union (EU) is multifaceted and increasingly significant in the context of contemporary economic development. Digitalisation, defined as the integration of digital technologies into various sectors, has been shown to enhance productivity through improved efficiency, innovation and the transformation of traditional business models.

The following figure illustrates the relationship between digitalisation and labour productivity through interconnected factors. Digitalisation acts as the primary driver, influencing Automation, Data Utilisation and Skill Development.

- Automation enhances efficiency by reducing manual tasks and increasing output consistency.
- Data Utilisation helps optimise decision-making, streamline processes and improve productivity.
- Skill Development ensures that the workforce adapts to new technologies, enhancing their effectiveness.

These three factors collectively lead to Efficiency Gains, which ultimately boost Labour Productivity. Figure 1 highlights the importance of integrating digital tools, workforce training and data-driven strategies to enhance productivity in the modern workplace.

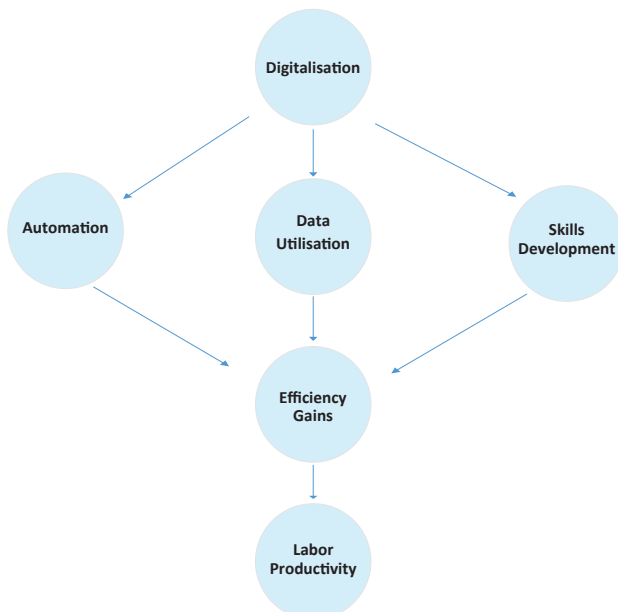

Figure 1: Key factors in examining the links between digitalisation and labour productivity
Source: compiled by the authors

One of the primary mechanisms through which digitalisation impacts labour productivity is by facilitating the efficient storage, transmission and manipulation of data. This capability allows for unprecedented levels of connectivity and innovation across industries, which has been evidenced in developed countries where digitalisation has positively influenced economic growth and productivity levels.[28] The integration of digital technologies into production processes not only streamlines operations but also fosters entrepreneurship, leading to a more dynamic economic environment.[29]

Moreover, the digital economy introduces new sectors and transforms traditional industries, contributing to economic development and social transformation. This phenomenon is often referred to as the fourth industrial revolution, characterised by rapid changes in production and digital technologies, which in turn intellectualises labour.[30] As industries adopt digital solutions, they experience significant shifts in labour processes, which can enhance productivity by optimising resource allocation and reducing operational costs.[31]

Research has highlighted a direct correlation between digitalisation and total factor productivity (TFP) in EU Member States. A model developed to analyse this relationship indicates that increased digitalisation correlates with higher productivity growth, as measured by TFP, which encompasses the efficiency of both labour and capital inputs.[32] This relationship is further supported by evidence that digital transformation leads to labour-saving costs and productivity increases, particularly in sectors that have embraced automation and digital tools.[33]

Additionally, the role of digitalisation in reshaping labour markets cannot be overlooked. The emergence of digital platforms has transformed employment relations, creating new forms of work and altering traditional labour regimes.[34] This shift has implications for labour productivity, as it often leads to more flexible work arrangements and can enhance the efficiency of labour deployment across various sectors.[35] However, it also raises concerns about job security and the quality of employment, particularly in the context of gig economy dynamics.[36]

The relationship between digitalisation and gross value added (GVA)

The relationship between digitalisation and gross value added (GVA) in the European Union (EU) is multifaceted, reflecting the impact of technological advancements on

28 Vysochan et al. 2024.
29 Vysochan et al. 2024; Balashova 2023.
30 Derhachova et al. 2024.
31 Mura–Donath 2023.
32 Balashova 2023.
33 Mura–Donath 2023.
34 Floros–Jørgensen 2022.
35 Altenried 2021.
36 Floros–Jørgensen 2022.

economic productivity and sectoral contributions to GVA. Digitalisation, defined as the integration of digital technologies into everyday business processes, has been shown to enhance the efficiency and competitiveness of various sectors, thereby positively influencing GVA.

Figure 2 illustrates the relationship between digitalisation and gross value added (GVA) through a network of interconnected factors. Digitalisation serves as the central driver, influencing three key areas: Technology Adoption, Data Analytics, Automation and AI:

- Technology Adoption contributes to Labour Productivity, which in turn enhances Cost Efficiency.
- Data Analytics plays a role in fostering Innovation, which further impacts Market Expansion.
- Automation and AI directly supports Innovation, creating synergies that contribute to GVA.
- The ultimate outcome of these interactions is an increase in Gross Value Added (GVA), achieved through improved Labour Productivity, Cost Efficiency, Innovation and Market Expansion.

Figure 2 highlights the multifaceted benefits of digitalisation, showing that its effects extend beyond simple efficiency gains to broader economic growth and competitiveness.

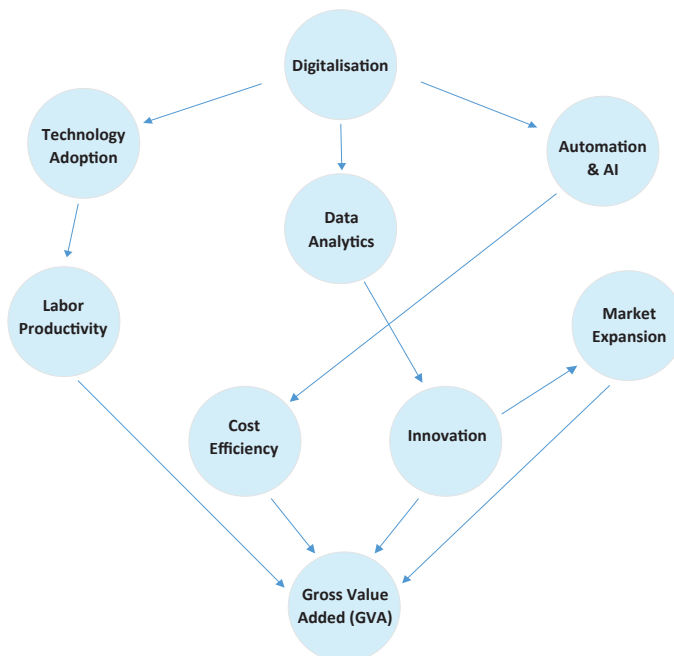

Figure 2: Key factors in examining the links between digitalisation and gross value added
Source: compiled by the authors

Digitalisation plays a crucial role in transforming traditional industries into more efficient, knowledge-based economies (KBE). Research indicates that countries with higher levels of digitalisation tend to have a more significant share of their GVA generated from the services sector, which is often more resilient and adaptable to changes in market conditions.[37] For instance, in countries like Luxembourg, Finland and Denmark, the services sector accounted for approximately 79.2%, 60% and 64% of GVA, respectively, highlighting the shift towards a KBE that leverages digital technologies.[38] This shift is indicative of economic development and correlates with increased innovativeness and competitiveness, as sectors that embrace digitalisation tend to exhibit higher productivity levels.[39]

Moreover, the integration of digital technologies has been linked to improved financial performance among businesses. Companies that adopt digitalisation report enhanced growth, performance and profitability, particularly during challenging economic periods, such as the Covid–19 pandemic. This resilience underscores the importance of digitalisation as a strategic asset that contributes to overall economic stability and growth, thereby positively affecting GVA at both the firm and national levels.

The agricultural sector, traditionally a significant contributor to GVA in the EU, is also experiencing transformations due to digitalisation. The adoption of smart farming technologies and data analytics is enhancing productivity and sustainability in agriculture, which in turn contributes to GVA.[40] As agricultural practices evolve through digitalisation, the sector's ability to generate value-added products increases, reflecting a broader trend of integrating technology across all economic sectors.[41]

Furthermore, the dynamics of global value chains (GVCs) illustrate how digitalisation affects GVA through enhanced trade efficiency and value creation. The ability to track and optimise value-added flows within GVCs is critical for understanding the true economic contributions of various sectors.[42] Digital tools facilitate better management of these chains, leading to increased GVA as firms optimise their operations and reduce costs associated with production and logistics.[43]

The relationship between digitalisation and exports

The relationship between digitalisation and exports within the European Union (EU) is increasingly significant as digital technologies reshape trade dynamics. Digitalisation facilitates trade by reducing transaction costs, enhancing market access and improving the efficiency of supply chains. This transformation is particularly evident in the context of the EU's trade policies and agreements, which increasingly emphasise digital trade as a critical component of economic growth.

37 Bąk et al. 2022.
38 Bąk et al. 2022.
39 Nowak et al. 2022.
40 Nowak–Kasztelan 2022.
41 Rađenović et al. 2022.
42 Vandenbussche et al. 2022.
43 Pasierbiak–Białowąs 2024.

Figure 3 visually represents the relationship between digitalisation and exports, highlighting key contributing factors. "Digitalisation" serves as a central node, linking to essential components such as "Digital Infrastructure" and "E-commerce". These factors, in turn, contribute to "Market Access" and "Trade Efficiency", both of which ultimately drive "Increased Exports".

- Digital Infrastructure: Forms the foundation for digitalisation, supporting the adoption of digital tools in trade.
- E-commerce: Enhances market access and enables businesses to reach global consumers more efficiently.
- Market Access: Facilitates entry into international markets, a critical factor in boosting exports.

Trade Efficiency: Streamlines trade processes, reducing costs and barriers.

Figure 3 shows that digitalisation, through its various channels, leads to an increase in exports by improving trade efficiency and market access. The size of the nodes may indicate their relative importance in this relationship, with "Increased Exports" being the most significant outcome.

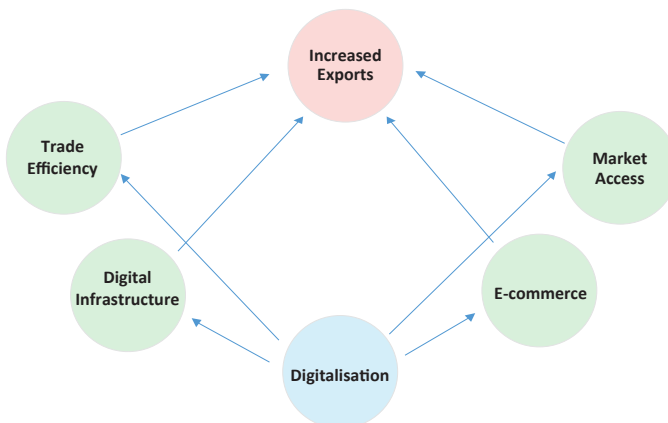

Figure 3: Key factors in examining the links between digitalisation and exports
Source: compiled by the authors

Digital technologies have been shown to significantly promote export activities. For instance, the digital economy enhances city export trade by lowering trade costs and expanding market reach, a finding supported by various studies that emphasise the role of digital technologies in facilitating trade. Similarly, digital transformation is closely linked to export performance, suggesting that enterprises that embrace digital tools can better navigate international markets and enhance their export capabilities. This relationship is further corroborated by Burri et al. (2024), who note that the EU's shift towards bi- and plurilateral agreements has prioritised digital trade, reflecting its importance in modern trade strategies.[44]

[44] BURRI et al. 2024.

Moreover, the integration of digital technologies into traditional manufacturing processes has been identified as a key driver of export growth. Korgun and Hoti (2023) point out that the convergence of digital technologies with manufacturing sectors in the EU enables the production and export of high-tech goods, thus enhancing the region's competitive edge in global markets.[45] The digital economy not only expands trade scales but also optimises resource utilisation, thereby improving the quality and sustainability of exports.

The EU's digital landscape is characterised by disparities in digital adoption among Member States, which can influence export performance. Bălăcescu et al. (2023) analyse these disparities and suggest that economic development plays a crucial role in bridging the digital divide, thereby enhancing overall export capabilities across the EU.[46] Furthermore, the European Commission's initiatives to bolster digital infrastructure and skills are essential for fostering a more integrated digital economy, which in turn supports export growth.[47]

The transformative role of the key drivers of digitalisation in Europe's economy

Navigating the digital frontier: The essential skills for thriving in a tech-driven EU

The concept of digital skills encompasses a wide range of competencies necessary for effective participation in the digital age. As technology continues to evolve, the demand for digital skills has become increasingly critical across various sectors, including education, logistics and business.

To fully grasp the scope and implications of digital skills, it is first necessary to define what they encompass and understand their core components.[48] The UNESCO Institute for Statistics (2009) defines digital skills as "a set of abilities for accessing and managing information using digital devices, communication applications, and networks". These talents enable you to create and share digital material, communicate and collaborate with others, solve issues and discover new creative opportunities.[49] Similarly, the European Commission (2019) also defined digital skills as "the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It is defined as a combination of knowledge, skills, and attitudes".[50]

45 Korgun–Hoti 2023.
46 Bălăcescu et al. 2023.
47 Kersan-Škabić – Vukašina 2023.
48 Sanz 2023.
49 UNESCO Institute for Statistics 2009.
50 European Commission 2019.

Building upon these foundational definitions, it becomes evident that digital skills are multifaceted, incorporating both technical and soft competencies that are critical in various sectors. Zielinska (2022) identifies six key factors that constitute digital skills: 1. access to and management of digital content; 2. use of digital means; 3. communication of digital content; 4. creation of digital content; 5. digital empathy; and 6. digital safety. This comprehensive framework emphasises the multifaceted nature of digital skills, which combine both technical and soft skills.[51] The importance of these skills is echoed by Ntule et al. (2024), who demonstrate that digital skills significantly enhance logistics performance, underscoring their relevance in the workforce.[52]

The digital economy is increasingly recognised as a cornerstone for innovation, growth, job creation and overall competitiveness within Europe. The rapid advancement of digital technologies has fundamentally altered the labour market, necessitating a shift in the skills required for success in both economic and societal contexts. This transformation is not merely a technological shift; it is a comprehensive change that impacts various sectors and necessitates a robust response from educational institutions, policymakers and businesses alike.

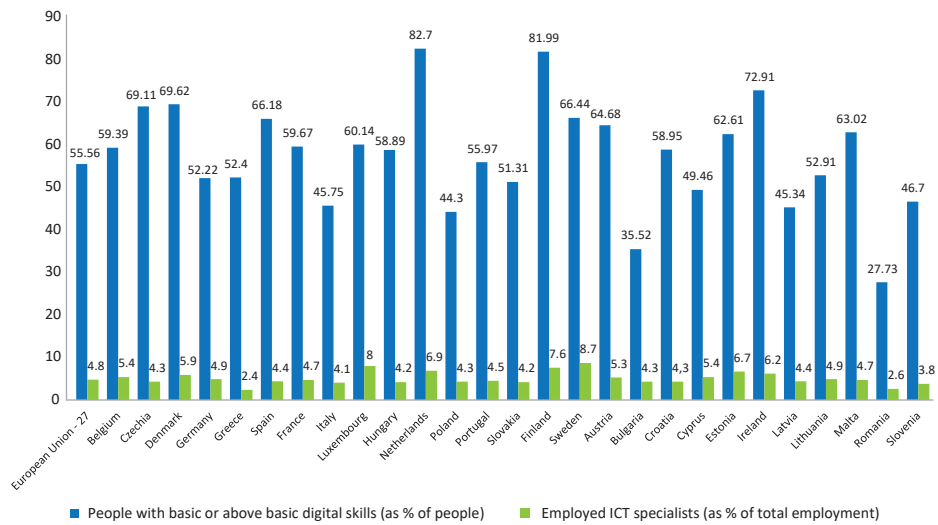

Figure 4: Digital skills and employment of IT professionals in the European Union
Source: compiled by the authors based on Eurostat 2024

The European Union (EU) is actively engaged in fostering a digital economy that can compete on a global scale. As Kolupaieva and Tiesheva (2023) highlight, digital innovations serve as a driving force for economic development and are essential for the well-being of citizens across EU Member States.[53] The EU's strategic frameworks aim to

51 ZIELINSKA 2022.
52 NTULE et al. 2024.
53 KOLUPAIEVA–TIESHEVA 2023.

implement digital transformation across all socio-economic sectors, thereby enhancing competitiveness against other global economies. This is echoed by Bacca-Acosta et al. (2023), who assert that the development of information and communication technologies (ICT) is vital for economic growth and productivity, positioning Europe favourably in an increasingly digitalised global market.[54]

Moreover, the educational landscape must adapt to meet the demands of this evolving digital economy. Simionescu (2022) emphasises the need for educational institutions to increase the number of programs that prepare graduates for careers in the digital economy, suggesting that those that fail to do so must revise their curricula to align with market needs.[55] This sentiment is supported by Morozova and Kurochkin (2021), who argue that enhancing digital competencies through public policy is crucial for fostering a digitally inclusive society.[56] The emphasis on skill development is further reinforced by Hurduzeu et al. (2022), who note that digitalisation significantly influences both individuals and businesses, necessitating a workforce equipped with relevant digital skills.[57]

The importance of digital proficiency cannot be overstated, as highlighted by Lucas et al. (2022), who point out that individuals with strong digital skills are more likely to secure employment in a competitive job market.[58] The ongoing digital transformation has revealed significant gaps in digital competencies among the workforce, which can exacerbate inequalities and limit job opportunities for those lacking these essential skills. The European Commission has recognised this challenge, noting that nearly half of the EU population lacks basic digital skills, a situation exacerbated by the Covid–19 pandemic.[59] This underscores the urgent need for targeted educational initiatives to equip individuals with the necessary competencies to thrive in a digital economy.

In addition to educational reforms, the integration of digital technologies into various sectors is crucial for enhancing competitiveness. The Digital Economy and Society Index (DESI) serves as a benchmark for assessing the digital performance of EU Member States, highlighting the importance of internet access, digital skills and the utilisation of online services.[60] The analysis of Csiszár (2023) demonstrates that digital intensity and technology adoption are pivotal in fostering innovation and economic growth across European enterprises.[61] This is particularly relevant in the context of the steel industry, where digital transformation is reshaping operational efficiencies and competitive dynamics.[62]

The interplay between digitalisation and economic competitiveness is further illustrated by the findings of Oloyede et al. (2023), who emphasise that the digital economy is a critical driver of growth and job creation across various sectors, including agriculture, commerce and education.[63] The ability to leverage digital technologies effectively can

54 Bacca-Acosta et al. 2023.
55 Simionescu 2022.
56 Morozova–Kurochkin 2021.
57 Hurduzeu et al. 2022.
58 Lucas et al. 2022.
59 Van Kessel et al. 2022.
60 Branca et al. 2020.
61 Csiszár 2023.
62 Branca et al. 2020.
63 Oloyede et al. 2023.

lead to significant advancements in productivity and innovation, which are essential for maintaining a competitive edge in the global market.

Furthermore, the role of digital skills extends beyond individual employability; it is also a key factor in the overall economic resilience of nations. As noted by Mirchevska et al. (2023), countries that invest in digital skills development are better positioned to adapt to changes in the global economy and to recover from economic shocks.[64] The Covid–19 pandemic has underscored the necessity for businesses and public sectors to embrace digital transformation to enhance their operational capabilities and service delivery.[65]

The EU's commitment to enhancing digital skills is reflected in its various initiatives aimed at fostering digital literacy and competency among its citizens. This includes the European Commission's Skills Agenda, which aims to address the digital skills gap and promote lifelong learning opportunities.[66] By prioritising digital competencies, the EU seeks to empower its workforce to navigate the complexities of the digital economy effectively.

Moreover, the development of digital skills is not solely the responsibility of educational institutions; businesses also play a crucial role in fostering a digitally competent workforce. As highlighted by Kessel et al. (2022), organisations must invest in training and development programs that enhance their employees' digital capabilities.[67] This investment is essential for maintaining competitiveness and ensuring that businesses can adapt to the rapidly changing technological landscape.

Shaping the digital future: The EU's path to a competitive, fair and sustainable economy

The European Union (EU) is actively enhancing its digital economy through a multifaceted approach that encompasses promoting competition, ensuring fair taxation, protecting consumers and creating a level playing field between digital and traditional businesses. This comprehensive strategy is essential for fostering innovation, economic growth and sustainability within the EU's digital landscape.

One of the pivotal elements of the EU's digital economy strategy is the promotion of competition. The European Commission (EC) has recognised the necessity of adapting competition laws to the unique challenges posed by digital markets. The introduction of the Digital Markets Act (DMA) exemplifies this effort, aiming to regulate large digital platforms that act as gatekeepers in the market. This legislation is designed to prevent anti-competitive practices and ensure that smaller businesses can compete effectively against dominant players like Google and Amazon.[68] The DMA, alongside the proposed New Competition Tool (NCT), reflects a shift from traditional ex-post competition

64 Mirchevska et al. 2023.
65 Boikova et al. 2021.
66 Van Kessel et al. 2022.
67 Van Kessel et al. 2022.
68 Wambach 2022.

policies to more proactive measures that can address potential market distortions before they occur. This proactive approach is crucial as the digital economy continues to evolve rapidly, presenting new challenges that require timely regulatory responses.

In addition to fostering competition, the EU is also focused on ensuring fair taxation within the digital economy. The complexity of digital services and the global nature of digital businesses have led to significant challenges in tax regulation. Countries like France have taken unilateral steps to implement digital services taxes in response to the deadlock at the OECD level regarding international tax reform. The EU's approach to taxation aims to create a fairer system that prevents tax avoidance and ensures that digital companies contribute their fair share to the economies in which they operate. This is particularly important as the digital economy expands, and traditional tax frameworks struggle to keep pace with new business models.[69] The EU's commitment to fair taxation is further underscored by its ongoing discussions to establish a unified digital tax framework that could serve as a model for other regions.[70]

Consumer protection is another critical aspect of the EU's digital economy strategy. The rapid growth of e-commerce and digital services has raised concerns about consumer rights and safety in the digital marketplace. The EU has implemented various regulations, including the General Data Protection Regulation (GDPR), which aims to safeguard personal data and enhance consumer trust in digital transactions.[71] These regulations are designed to empower consumers by providing them with greater control over their data and ensuring that businesses adhere to strict privacy standards. Furthermore, the EU has established mechanisms to address consumer complaints and disputes in the digital environment, thereby fostering a safer online shopping experience.[72] The emphasis on consumer protection not only enhances trust in digital services but also encourages more consumers to engage in online transactions, thereby driving economic growth.

Creating a level playing field between digital and traditional businesses is essential for the EU's economic strategy. The digital transformation of traditional industries is a key focus area, as the EU seeks to integrate digital technologies into various sectors to enhance productivity and competitiveness.[73] This transformation is supported by initiatives such as the Digital Europe Programme, which aims to promote digital skills and the adoption of advanced technologies across all sectors of the economy.[74] By fostering digitalisation in traditional industries, the EU is not only enhancing their competitiveness but also ensuring that they can thrive in an increasingly digital marketplace. This approach is particularly important for small and medium-sized enterprises (SMEs), which often face greater challenges in adapting to digital changes compared to larger corporations.[75]

69 Geringer 2021.
70 Geringer 2021.
71 Younas–Mirzaraimov 2021.
72 Agibalova et al. 2021.
73 Małkowska et al. 2021.
74 Matrosova–Kononenko 2024.
75 Brodny–Tutak 2022a; 2022b.

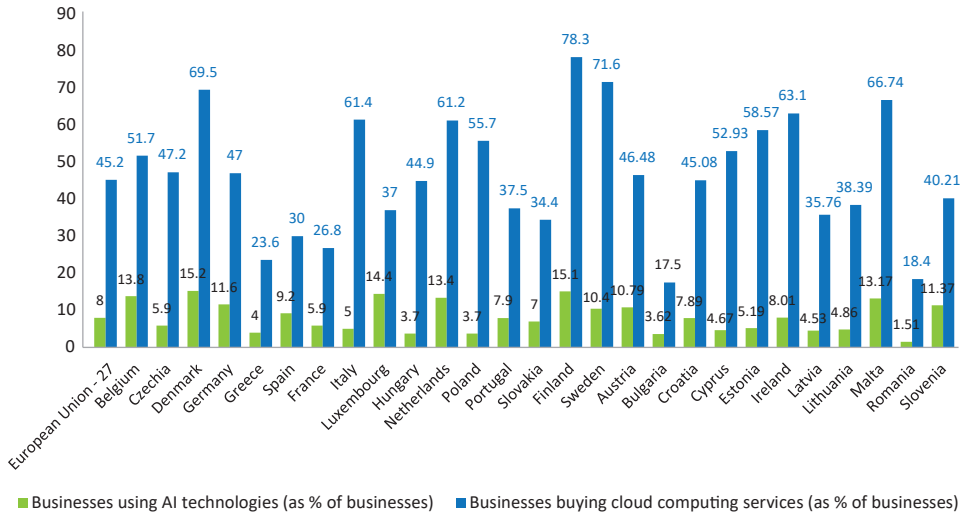

Figure 5: Use of artificial intelligence and cloud-based computing services in EU countries – Adaptation level of businesses by country

Source: compiled by the authors based on Eurostat 2024

The EU's digital economy strategy is also characterised by a commitment to sustainability and innovation. The concepts of Economy 4.0 and Society 4.0 are central to the EU's vision for a future where digital technologies drive sustainable economic growth.[76] The integration of digital technologies into various sectors is expected to lead to more efficient resource use, reduced environmental impact and the creation of new business models that prioritise sustainability.[77] The EU's focus on innovation is further evidenced by its investment in research and development initiatives aimed at fostering technological advancements that can benefit the entire economy.[78] This commitment to innovation not only enhances the EU's global competitiveness but also positions it as a leader in the transition to a sustainable digital economy.

Moreover, the EU's efforts to enhance its digital economy are supported by a robust framework of policies and initiatives that promote collaboration among Member States. The Digital Economy and Society Index (DESI) serves as a critical tool for assessing the digital progress of EU countries and identifying areas for improvement.[79] By tracking digital performance across various dimensions, the DESI enables the EU to tailor its policies to address specific challenges faced by different Member States. This collaborative approach ensures that all countries can benefit from the digital economy, thereby reducing disparities and promoting convergence within the EU.[80]

76 MAŁKOWSKA et al. 2021.
77 BOROWIECKI et al. 2021.
78 MAŁKOWSKA et al. 2021.
79 KOVÁCS et al. 2022.
80 HUŇADY et al. 2022.

Digital frontiers: Infrastructure investments as the catalyst for Europe's competitive edge

Digital infrastructure investments are increasingly recognised as pivotal to enhancing Europe's global competitiveness. The integration of advanced digital technologies into the economic fabric of nations fosters innovation and enhances operational efficiencies across various sectors. This multifaceted approach to digital infrastructure encompasses a broad spectrum of elements, including telecommunications, broadband access and the implementation of smart technologies, all of which are essential for driving economic growth and attracting foreign direct investment (FDI).[81]

The role of digital infrastructure in boosting competitiveness is underscored by its capacity to facilitate digital transformation within organisations. Investments in information technology (IT) infrastructure are crucial for creating competitive advantages, particularly when aligned with a robust digital transformation strategy. Such investments enhance operational capabilities and enable firms to adapt to rapidly changing market conditions, thereby positioning them favourably in the global landscape.

Moreover, the relationship between digital infrastructure and foreign direct investment is significant. Rehman et al. (2022) highlight that improved infrastructure, including digital networks, can substantially increase a country's attractiveness to foreign investors.[82] This is particularly relevant for European nations, where enhanced digital capabilities can lead to lower operational costs and improved business environments, thus fostering a more conducive atmosphere for FDI. The International Telecommunication Union supports this notion, asserting that mobile broadband is a primary driver of economic development, particularly in developing countries.[83] As such, European nations must prioritise digital infrastructure to remain competitive on the global stage.

The impact of digital infrastructure extends beyond mere economic metrics; it also plays a crucial role in addressing social inequalities. Digital infrastructure can help bridge the digital divide, thereby reducing income inequality and enhancing overall regional development.[84] This is particularly pertinent in the context of the European Union's initiatives aimed at digitalising lagging regions, as evidenced by the allocation of substantial funds for infrastructure development in Central Europe. Such investments promote economic growth and ensure that the benefits of digitalisation are equitably distributed across various demographics.

Furthermore, the concept of "new infrastructure", which includes digital information technology such as 5G networks and artificial intelligence, is gaining traction as a critical component of economic growth strategies. Investments in new digital infrastructure have contributed significantly to economic growth, accounting for a remarkable percentage

81 Rehman et al. 2022; Doran et al. 2022.
82 Rehman et al. 2022.
83 Doran et al. 2022.
84 Hakim–Rosini 2022.

of overall economic development in certain regions. Furthermore, digital infrastructure development can lead to enhanced consumption capabilities and economic performance in urban areas. Thus, the strategic investment in digital infrastructure is not merely a matter of technological advancement but a fundamental driver of economic prosperity.

In addition to fostering economic growth, robust digital infrastructure is essential for ensuring the security and resilience of digital services. A resilient digital infrastructure is indispensable for delivering efficient services and fostering economic growth, particularly in the context of cybersecurity. The ability to maintain robust cybersecurity measures instils trust in digital services, which is crucial for both consumers and businesses alike. This trust is a prerequisite for the widespread adoption of digital technologies, which in turn drives economic competitiveness.

Moreover, the strategic alignment of digital infrastructure investments with broader economic policies is crucial for maximising their impact. Doran et al. (2022) emphasise the importance of combining broadband coverage and speed to improve fiscal system efficiency, particularly in Eastern European Union countries.[85] This approach underscores the need for a holistic strategy that integrates digital infrastructure development with fiscal policies to enhance overall economic performance.

The implications of digital infrastructure investments extend to environmental sustainability as well. Digital business innovations can drive financial inclusion and contribute to sustainable economic growth. By enabling access to digital financial services, investments in digital infrastructure can empower marginalised communities, thereby promoting inclusive growth that aligns with environmental, social and governance (ESG) principles.

Empowering citizens in the digital era: Trust, inclusion and innovation in public services

The digital transformation of public services is a critical factor in enhancing the resilience, competitiveness and innovation of European society and economy. As governments increasingly integrate digital technologies into public service delivery, the need for fair, inclusive, open and trusted digital public services becomes paramount. This transformation is not merely a technological upgrade; it represents a fundamental shift in how citizens interact with their governments and access essential services. The successful digitalisation of public services hinges on several interrelated factors, including trust, digital literacy and the active engagement of citizens in the design and delivery of these services.

[85] Doran et al. 2022.

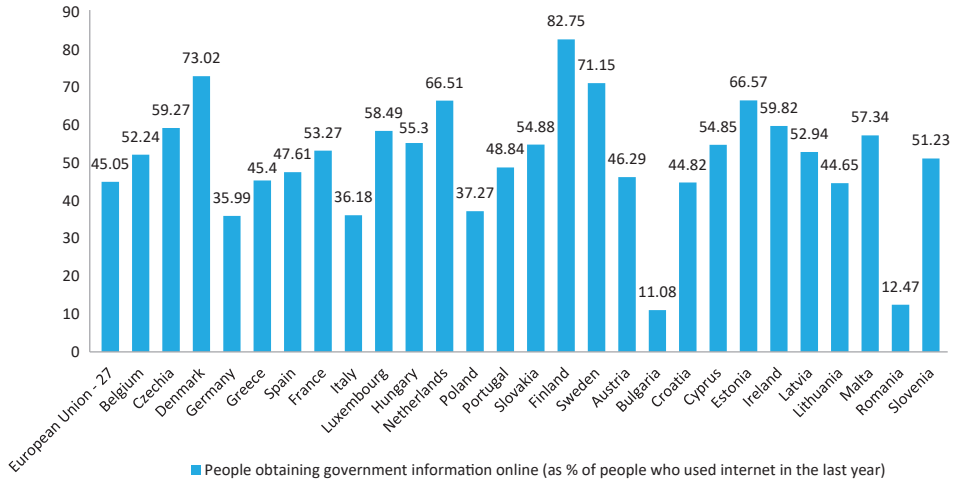

Figure 6: Rate of access to online government information among internet users in EU Member States
Source: compiled by the authors based on Eurostat 2024

Trust plays a pivotal role in the successful adoption and utilisation of digital public services. Research indicates that the quality of public services significantly influences public trust in government institutions. High-quality services foster satisfaction and strengthen the relationship between citizens and the government, ultimately enhancing trust. Moreover, the perception of security and privacy in digital interactions is crucial. Citizens are more likely to engage with digital services when they feel their personal information is secure. This is particularly relevant in the context of e-government, where the lack of trust can hinder the effective use of digital platforms.[86] The establishment of trust through transparent practices and high-quality service delivery is essential for fostering a positive relationship between citizens and public institutions.

Digital literacy is another critical component of effective digital public service delivery. The digital divide remains a significant challenge, particularly among marginalised groups who may lack the necessary skills to navigate digital platforms.[87] Addressing this divide requires targeted investments in digital literacy programs and infrastructure to ensure that all citizens can access and benefit from digital services. For instance, rural populations often face barriers such as poor digital literacy and limited access to technology, which can impede their ability to utilise digital public services effectively. By investing in training and resources, governments can empower citizens to engage with digital services, thereby enhancing overall service utilisation and satisfaction.

The role of citizens in the co-design and co-delivery of digital public services is increasingly recognised as a vital aspect of digital governance. The shift from viewing

86 Hooda et al. 2022.
87 Hooda et al. 2022.

citizens as mere consumers of services to active collaborators in the service design process can lead to more responsive and effective public service.[88] This participatory approach not only enhances the relevance of services but also fosters a sense of ownership among citizens, which can further strengthen trust in public institutions.[89] Engaging citizens in the development of digital services ensures that these services meet the actual needs of the community, thereby increasing their effectiveness and uptake.

Moreover, the Covid–19 pandemic has accelerated the digital transformation of public services, highlighting the importance of adaptability and resilience in public administration.[90] The necessity for remote service delivery during the pandemic underscored the potential of digital technologies to maintain service continuity in times of crisis.[91] As governments adapt to these new realities, it is crucial to ensure that digital services are designed with inclusivity in mind, addressing the needs of all citizens, particularly those who may be digitally marginalised.[92] This includes considering the unique challenges faced by vulnerable populations, such as the elderly or those with limited digital skills, in accessing essential services.[93]

The integration of smart applications and digital tools in public service delivery can enhance the efficiency and accessibility of services. For instance, the use of real-time data can improve service responsiveness and transparency, fostering greater trust among citizens. However, the implementation of these technologies must be accompanied by robust security measures to protect user data and privacy, as concerns in these areas can significantly impact user trust and engagement. Ensuring that citizens feel secure in their interactions with digital services is essential for promoting widespread adoption and effective utilisation.

Discussion

This study explored the relationship between digitalisation and economic competitiveness and inclusivity within the European Union (EU). The research identified that digital skills, business digitalisation, digital infrastructure and digital public services play essential roles in fostering economic growth. A strong correlation was found between digitalisation and key macroeconomic indicators such as labour productivity, gross value added (GVA) and exports. The findings demonstrate that investment in digital skills and infrastructure leads to increased efficiency, economic convergence and sustainability across the EU. Furthermore, digital public services contribute to social inclusion by addressing youth unemployment and promoting equitable access to digital opportunities. These results affirm the central research question: How can digitalisation drive competitiveness and resilience in the European Union, and what are the key macroeconomic factors influencing this transformation?

88 Sharma et al. 2022.
89 Sharma et al. 2022.
90 Agostino et al. 2021.
91 Agostino et al. 2021.
92 Kaihlanen et al. 2022.
93 Kaihlanen et al. 2022.

Previous studies have emphasised the role of digitalisation in productivity and innovation. Research on the Digital Economy and Society Index (DESI) supports the argument that digital readiness improves economic performance. This study reinforces such literature by providing empirical evidence that strategic digital investments can reduce the productivity gap between EU regions. Additionally, literature on institutional support for digitalisation[94] aligns with the findings, as targeted policies enhance economic sustainability and resilience. The results also extend previous research by demonstrating that digitalisation not only improves business efficiency but also supports ecological transformation through initiatives like the European Green Deal.

An unexpected result emerged regarding the digitalisation benefits in Eastern European countries, where businesses have exhibited more pronounced productivity gains from digital investments compared to their Western counterparts. This outcome suggests that less digitally advanced regions may experience higher marginal benefits due to rapid technological adoption, similar to the 'leapfrogging' effect observed in developing economies. Furthermore, while digitalisation was expected to uniformly enhance export performance, disparities among EU Member States indicate that digital skills and infrastructure gaps limit some countries from fully leveraging digital trade advantages. These findings highlight the need for region-specific digital policies.

While this study provides a comprehensive analysis, several limitations must be acknowledged. First, the study relies on macroeconomic indicators that may not fully capture industry-specific digitalisation effects. Additionally, the research is based on existing datasets, which may not account for real-time technological advancements. Another limitation is the lack of qualitative insights into the social impacts of digitalisation, such as job displacement due to automation. Addressing these limitations would require further empirical studies incorporating microeconomic data and case studies from diverse industries.

Future research should explore the long-term effects of digitalisation on employment structures, particularly concerning automation and workforce adaptation. Further investigation into the effectiveness of EU digital policies in reducing disparities across Member States would provide valuable insights. Additionally, examining the role of emerging technologies, such as artificial intelligence and blockchain, in enhancing digital competitiveness would offer new perspectives on economic transformation. Lastly, studying the impact of digitalisation on environmental sustainability in various industries could deepen understanding of how digital strategies align with climate goals.

This study underscores the transformative role of digitalisation in shaping a competitive and inclusive European economy. The findings confirm that digital skills, infrastructure and public services are fundamental drivers of productivity and economic growth. While disparities in digital readiness persist, targeted policies can ensure that all EU regions benefit from digital advancements. The implications of this research extend to policymakers, businesses and educators who play crucial roles in fostering digital adoption. Ultimately, aligning digital strategies with broader economic and sustainability objectives will enhance the EU's global position while fostering resilient and inclusive growth.

94 Brodny–Tutak 2022a.

Conclusion

This study set out to examine the impact of digitalisation on economic competitiveness and inclusivity within the European Union (EU). The research explored key macroeconomic factors – such as digital skills, digital business integration, digital infrastructures and the digitalisation of public services – and their role in fostering economic growth. The central issue addressed was the digital divide among EU Member States, which poses significant challenges to ensuring equitable access to the benefits of digital transformation.

Through a comprehensive analysis of academic literature and macroeconomic data, our findings highlight that digitalisation serves as a crucial driver of economic performance. Investments in digital skills development, business digitalisation and strategic digital infrastructure significantly enhance productivity, gross value added (GVA) and export growth. Moreover, digital public services contribute to social inclusion, particularly in addressing youth unemployment and bridging regional disparities.

Key takeaways from this study underscore the need for targeted policy interventions that promote digital adoption across all EU regions. To ensure that the benefits of digitalisation extend beyond the most technologically advanced economies, coordinated EU policies must focus on reducing disparities in digital readiness, investing in digital literacy programs and integrating digital strategies with broader sustainability objectives. Furthermore, aligning digital transformation with environmental and social goals can foster a resilient, competitive and inclusive European economy.

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The Transformation of the European Car Industry
Electrification and Its Challenges

The European automotive industry faces many 21st-century challenges, with sustainability and climate protection as key objectives. Among these, the European Parliament's decision to mandate zero emission passenger cars and light commercial vehicles from 2035 marks a transformative shift. This cornerstone of the "Fit for 55" climate package carries broad economic, social and political implications, requiring significant adjustments across the automotive value chain and presenting major hurdles for stakeholders.

This manuscript explores the sector's electrification efforts, focusing on the tension between sustainability goals and economic impacts. It highlights disparities in electric vehicle affordability and accessibility across Europe, which risk deepening socio-economic inequalities, and questions the environmental and equity outcomes of weight-based regulatory incentives favouring premium models.

Beyond assessing the feasibility of emissions targets, the study critically examines whether the EU's focus on electric vehicles aligns with broader climate goals or creates new challenges. Addressing these issues aims to illuminate the immediate and long-term implications for the evolution of the automotive industry and Europe's socio-economic landscape.

Keywords: electric cars, automotive industry, sustainability, CO_2 emissions, NO_x emissions, premium models, charging infrastructure, alternative fuels, electrification

Introduction

For Hungary as a member of the European Union, it will be essential to adapt to modern economic and environmental challenges in the future. The European Union's Climate Change Directive and the European Union's Greenhouse Gas Emission Reduction

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Directive for 2030 [Directive (EU) 2018/410], adopted in 2018, requires that EU member states reduce greenhouse gas emissions by at least 55% by 2030. This commitment aims for the EU to achieve climate neutrality by 2050.[2]

The EU's decision comes as the result of the latest scientific reports showing that the world's climate is undergoing highly unusual and significant changes. Global warming is accelerating and is already causing irreversible changes in ocean currents, precipitation patterns and wind patterns.

Increased average temperatures and extreme weather events have a significant economic cost for the European Union,[3] and often affect countries' ability to produce food.[4]

The aim of my study is therefore to explore which EU regulatory instruments can help to achieve this climate neutrality goal, and to examine which policy measures can help the economic competitiveness of Europe and Hungary in the future, especially concerning the rise of electric cars after the diesel scandal and the EU's climate neutrality objectives, and to examine whether electric cars can be the solution to reduce carbon dioxide emissions in the EU Member States.

I deem the rise of electric cars necessary mainly because this trend will bring about inevitable changes in the automotive industry, which is a crucial sector for the EU and our economy. For example, according to the Hungarian Central Statistical Office (KSH) data, it is the most important sector of the Hungarian manufacturing industry, accounting for 25% of domestic manufacturing output in November 2024.[5]

The Hungarian automotive industry already plays a prominent role in the Hungarian economy, and it is expected to continue to develop and dominate the sector, together with the growing importance of battery production and related investments.[6]

My article aims to provide a comprehensive analysis of the challenges of electrification of the European automotive industry to achieve sustainability and climate neutrality goals. This raises critical questions about the reality of the regulation and offers a nuanced perspective on whether this transition is a step in the right direction and whether the take-up of electric cars can only be beneficial.

The article's methodology is based on reports and statistics from the European Commission and the European Court of Auditors, the European Automobile Manufacturers' Association (ACEA), together with a range of relevant literature on the subject.

The entire transfer for electric cars: Solution or additional problem?

Since 1998, the European Commission has been trying to reduce greenhouse gas emissions from cars by regulating the average CO_2 emissions of new cars. This started from

2 Council of the European Union 2024.
3 Hungarian Academy of Sciences 2014.
4 Council of the European Union 2024.
5 KSH 2025.
6 WEINHARDT 2023.

186 g CO_2/km on average in 1995, to 130 g in 2015.[7] Then a target of 95 g/km was set for the period 2020–2021 (although the measurement method changed from NEDC to WLTP, the 95 g/km target corresponds to approximately 115 g/km under the WLTP system between 2021 and 2024, reducing to 93.6 g/km between 2025 and 2029, with a target of 49.5 g/km between 2030 and 2034 and 0 g/km from 2035).[8] Each vehicle manufacturer's target is adjusted to the average mass of the models in its range.[9]

However, this policy has not been effective so far, as emissions from the transport sector have increased (the transport sector accounted for 23% of total EU GHG emissions in 2021[10]), accounting for a quarter of total emissions and cars account for 60% of total transport emissions.[11]

Following the "Dieselgate" scandal,[12] the European Commission has decided to tighten its emissions policy further. It has tightened up penalties for non-compliance with the new Worldwide Harmonised Light Vehicles Test (WLTP)[13] driving cycle and the introduction of the Real Driving Emissions (RDE) test[14] and has also tightened up the emission values to the levels as mentioned above. By comparison, CO_2 emissions are directly proportional to the amount of fuel burned. On average, 1 litre of petrol burns 2.33 kilograms of CO_2, compared to 2.64 kilograms for 1 litre of diesel. To meet the 95 g CO_2/km (2021–2025) target, a diesel vehicle would need to consume an average of 3.6 litres per 100 kilometres, compared to 4.1 litres for a petrol vehicle. This is the average amount that all cars sold in the EU would have to aim for to reach the 95 g CO_2/km target, and 93.6 g CO_2/km from 2025.

7 Mock 2018.
8 European Court of Auditors 2024.
9 Regulation (EU) 2014/333.
10 European Court of Auditors 2024.
11 European Parliament 2023.
12 The diesel scandal is one of the biggest industrial scandals, which erupted in 2015 when it was revealed that some car manufacturers, notably the Volkswagen group, had manipulated emissions data for their diesel vehicles. Volkswagen deliberately programmed its direct-injection turbocharged diesel (TDI) engines to activate certain emission control systems only during laboratory tests. The system reduced the car's power output during the test and created a richer mixture in the combustion chamber, resulting in less nitrogen being released into the air. In reality, nitrogen oxide emissions were 40 times the legal limit in real conditions.
13 The Worldwide Harmonised Light Vehicles Test (WLTP) was designed to replace the outdated European Driving Cycle (NEDC) and was adopted on 1 June 2017. The WLTP measures all air pollutants and greenhouse gas emissions already regulated by the NEDC. The aim was to ensure that the WLTP cycle more accurately reflects real road driving conditions.
14 The Real Driving Emissions (RDE) test is carried out in real traffic on public roads, covering a wide range of driving conditions experienced by drivers across the EU. The RDE test is designed to cover normal driving conditions. It consists of three parts (urban, rural and motorway), determined by the speed at which the car is travelling. In order to pass the RDE test, the vehicle must have average NO_x emissions below the limit value for the full test and the urban part.

Table 1: Carbon dioxide emission targets for the EU car fleet since 1998

Year	Target (g CO_2/km)
1995–2010*	186
2010–2019	130
2020	95
2021–2024**	115.1
2025–2029	93.6
2030–2034	49.5
2035–	0

*Note: * voluntary targets based on agreements with the EU; ** measurement method changed from NEDC to WLTP.*
Source: European Court of Auditors 2024

Obviously, meeting such a target will only be possible if car manufacturers increase sales of electric vehicles (EVs). Otherwise, they will face annual penalties for the whole industry. If a manufacturer exceeds the 95-gram limit (which will be 93.6 g CO_2/km from 2025), it will have to pay a penalty of €95 per gram multiplied by the number of cars it sells in the EU, estimated at €14.2 billion in 2021.[15] If carmakers do not reduce their average emissions below 93.6 g CO_2/km from 2025, the total industry penalty could rise to around €13 billion for cars and a further €3 billion for vans (to avoid penalties, carmakers will have to sell at least 20% all-electric vehicles, even if EV sales growth stagnates). Therefore, the European Union's automotive lobby is seeking to postpone the 2025 emissions targets by two years. The industry group is proposing that the EU should introduce emergency legislation to ensure that car manufacturers avoid drastic fines of up to €13 billion or face the possibility of having to stop production of around 2 million cars and threatening millions of jobs in the EU.[16]

Returning to the Dieselgate,[17] another important consequence was that the main technology developed by the European industry to reduce CO_2 emissions, diesel engines, was phased out. Although diesel cars in Europe emit on average 15–25% less CO_2 than petrol cars, this benefit comes at the cost of four times higher air pollutant emissions. The drive to dieselise new car sales was aimed at reducing CO_2 emissions and complying with regulations. The market share of diesel cars has increased from 35% in the early 2000s to 52% in 2015, but has been steadily declining since the scandal broke, falling to 30% in 2019. This sharp decline has seen average measured CO_2 emissions from new cars in Europe rise after more than 20 years of steady decline, reaching 122 grams in 2019, 27 grams above the 2021 target, but falling to 108 g/km in 2020,[18] which is also further away from the target. Furthermore, according to a report by the European Court of Auditors for 2024, the EU has failed to reduce car emissions from cars with internal combustion engines over the past 10 years, due to their greater weight and power.[19]

15 VÁRKONYI 2020.
16 Automotive News Europe 2024a.
17 SZEGEDI 2018, 2022.
18 KSH 2022.
19 European Court of Auditors 2024.

This raises the issue of how the industry can achieve reductions as testing protocols tighten and diesel vehicle sales decline. The only possible answer is the aforementioned electrification, and the European Commission has paved the way to ease the transition by introducing 'super credits' for low-emission vehicles. From 2020, all cars emitting less than 50 grams of CO_2 per kilometre will be counted twice when determining the average emissions of each car manufacturer (until 2022[20]), and only electric vehicles will be able to meet this.[21]

The distortive effect of legislation favouring heavier vehicles

The increase in vehicle weight over the past decades has had a significant impact on fuel consumption and carbon dioxide emissions, which are crucial factors in achieving climate protection goals, as weight growth directly contributes to the rise in CO_2 emissions.

Between 2001 and 2008, the average weight of cars sold in Europe increased by 10%, equivalent to 129 kg. If we go back to 1995, when the European Commission first introduced the regulation to reduce CO_2 emissions in the transport sector, the average European car gained 259 kg, an increase of 20%.[22] A 10% increase in weight corresponds to a nearly 7% increase in CO_2 emissions.[23]

In addition, the performance of heavier vehicles has also increased over the period (by 15% between 2000 and 2008), which is another factor in the increase in emissions. The increase in engine power also has a negative impact on emissions, as the additional energy used during acceleration represents an additional 15% increase in CO_2 emissions, equivalent to an increase of 7–10%.

It is important to mention that, since the CO_2 targets for each car manufacturer are based on the average weight of vehicles sold, which means that as the weight of a vehicle increases, the targets are less stringent than for lighter vehicles. This parameter, which was introduced in European legislation in 2008[24] following considerable lobbying by the German Government,[25] was introduced to protect premium brands [the current Regulation (EU) 2019/631 sets out in its Article 4 the permitted derogations depending on the weight of the vehicles; this article states that the emission targets are adjusted according to the weight of the vehicles, thus allowing higher emission targets for heavier vehicles and stricter standards for lighter vehicles].[26]

Models from these brands are usually several hundred kilos heavier than models from mainstream brands, because heavier cars are easier to comply with regulation. As it is easier to introduce environmentally friendly technologies for more expensive cars, these weight-based targets have driven the whole European car industry upwards

20 Regulation (EU) 2019/631.
21 Szűcs 2022.
22 Pardi 2022: 167.
23 International Council on Clean Transportation 2017: 6.
24 Transport & Environment 2007.
25 Jerome 2007.
26 Regulation (EU) 2019/631.

in terms of price. Therefore, the average car sold in Europe has become more expensive making it harder for families to buy a new car.[27]

Another reason for the rising cost of new cars is the tightening of safety standards. The European Union's General Safety Regulation 2 (GSR2) regulates the general safety requirements for vehicles and the use of Advanced Driver Assistance Systems (ADAS).[28] This regulation has led to cost increases,[29] particularly in the small car category (the second half of the regulation came into force on 7 July 2024, making black box, cyber-attack protection, intelligent cruise control, driver fatigue and alertness detection, reversing radar–camera, advanced emergency braking systems mandatory safety features for all new passenger cars placed on the EU market, and lane-keeping assist), which has led some manufacturers to decide to stop selling these low-consumption models in Europe, which, in addition to increasing costs, could again lead to an increase in fleet-level emissions,[30] since, as we have seen, larger, heavier vehicles emit more pollutants.

In addition to these, the tightening of environmental Euro standards, which manufacturers are building into the price of new cars, will also increase the price of new cars. According to the European Automobile Manufacturers Association (ACEA), the introduction of the Euro 7[31] standard could increase the price of cars by up to €2,000.[32]

It is therefore contradictory that when the car industry voluntarily committed to reduce CO_2 emissions by 25% between 1998 and 2008, car manufacturers made it harder for themselves by increasing the weight and engine power of the cars they sold. Not surprisingly, they failed to meet the 2008 target of 140 CO_2 g/km. The upward drift has not stopped: the average European car has become longer (+9 cm), wider (+4 cm) and taller (+2 cm) between 2008 and 2018; the share of automatic gearboxes and all-wheel drive, which both increase weight and CO_2 emissions, has increased from 13% to 36% and from 9% to 14% of total sales respectively over this period, and engine power has increased by a further 15%. As in the previous period, the net result of these paradoxical trends was that it became increasingly difficult to achieve CO_2 reductions, and the industry's response was to use new technologies to optimise CO_2 performance in homologation testing to meet the 2015 target of 130 CO_2 g/km, as illustrated by the increasing gap between the New European Driving Cycle (NEDC)[33] and real driving CO_2 emissions. Transport & Environment (T&E) also reports in a recent study that the average width of new cars will exceed 180 centimetres in the first half of 2023, up from 177.8 cm in 2018,

27 PARDI 2022: 163.

28 Regulation (EU) 2019/2144.

29 Thatcham Research 2024.

30 HORVÁTH 2024.

31 The phasing-in of Euro 7 will vary according to the type of vehicle: new passenger cars and light commercial vehicles will be mandatory from 1 July 2025, and heavy-duty vehicles from 1 July 2027. This standard will require stricter limits and more durable emission conformity and will also cover particulate emissions from brakes and tyres to reduce air pollution.

32 ACEA 2023.

33 The New European Driving Cycle (NEDC) was a standardised testing procedure introduced by the European Union to measure vehicles' fuel consumption, CO_2 emissions and other air pollutants. It was developed in the 1970s and later modified to suit modern vehicles. The cycle aimed to provide comparable data on vehicle consumption and emissions based on laboratory tests. Since 2017, it has been replaced by the WLTP (Worldwide Harmonised Light Vehicles Test Procedure).

making them on average half a centimetre wider each year since 2001, taking up more space and obviously emitting more harmful substances.[34]

Table 2: Growth in car size and performance between 2008 and 2018

Year range	Length increase (cm)	Width increase (cm)	Height increase (cm)	Automatic gearbox share (%)	All-wheel drive share (%)	Engine power increase (%)
2008–2018	9	4	2	13–36	9–14	15

Source: compiled by the author

Yet, because of the aforementioned regulation that makes it easier for heavier cars to comply with the regulation, on paper they have been more successful in reducing CO_2 emissions than lighter cars. The difference between the average CO_2 emissions of premium car brands (Mercedes, BMW, Audi, Volvo) and mainstream car brands (Renault, Peugeot, Citroen, Ford, Opel) has fallen from 40 g/km in 2001 to 16 g/km in 2018, with the average premium car gaining 192 kg and the average mainstream car only 100 kg.

The answer has several components as to how this was possible. Firstly, the mandatory targets set by the 2009 Regulation discussed above [and the current Regulation (EU) 2019/631] are weight-based, so as discussed earlier, car manufacturers selling heavier cars have an easier CO_2 target. For example, in practice, this meant that by 2021, the premium group would comply with the regulation if they achieved 102 CO_2 g/km and the generalist car manufacturers would comply if they achieved 92 CO_2 g/km. This means that carmakers who increase the weight of their cars will not be penalised as their target will be less stringent and, more importantly, carmakers who reduce the weight of their cars will not be rewarded as their target will be more stringent.

As a result, the regulation will push all car manufacturers, including generalist car manufacturers, up the market. This means that the heavier the car, the lighter the rules, which basically benefits four manufacturers: the big three German car makers, Volkswagen, BMW and Mercedes-Benz, and the Ford–Volvo duo. Under this calculation in 2021, these four companies have received a total of €1,670 million in rebates, while all other manufacturers paid €532 million more than if they were all treated the same.[35]

Despite this, by 2025, the Volkswagen group could still face a €1.5 billion penalty due to the aforementioned tightening CO_2 emission limits (but at the same time they have added the cost of having to sell more electric cars, with lower profits, rather than more profitable combustion-engined cars).[36]

Moreover, there is also the possibility of pooled fleet compliance, a mechanism in the EU's CO_2 emissions legislation that allows car manufacturers to meet their emission targets together.[37] This means that several car manufacturers can form a pool and are assessed on their combined emissions rather than individually. If the jointly calculated emissions level complies with the rules, they can avoid or reduce fines. In this way,

34 Transport & Environment 2024a.
35 Bucsky 2021.
36 Automotive News Europe 2025.
37 European Commission s. a.

Stellantis, Ford and Toyota plan to buy credits from Tesla and Mercedes-Benz from Volvo and Polestar, as the emissions rules benefit the U.S. carmaker, which will be compensated for the consolidation of its EV fleet sold this year.

Therefore, exact calculations for 2025 are therefore difficult to establish yet with the new CO_2 standards, as the expected penalties discussed earlier will depend essentially on the percentage of electric cars that car manufacturers can sell. If sales figures are high in terms of electric vehicles, the €13–15 billion penalty mentioned above could be much lower.[38]

The other answer is that since weight reduction is not a solution to meet CO_2 targets due to regulations that "reward" heavier cars, car manufacturers can only rely on greener technologies. However, greener technologies are expensive and easier to introduce in less price-sensitive premium cars. The two main technologies for reducing CO_2 emissions in 2001–2018 were diesel engines and direct gasoline injection (GDI), which are premium technologies. In the European market, the average premium for buying a diesel vehicle over a comparable petrol vehicle is between 9% and 21%.[39] The premium group was particularly successful in selling diesel cars, which accounted for almost 80% of its sales before Dieselgate, compared to only 50% for the generalist group.

The third possible answer is that new technologies already available in a generalist car, such as start–stop systems and cylinder deactivation, help to reduce CO_2 emissions and offer new possibilities for optimising laboratory tests. For example, in 2017, the difference in CO_2 emissions between laboratory tests and real-world conditions averaged 35% for petrol cars, 41% for diesel cars, 47% for hybrid electric cars and 221–225% for plug-in hybrid electric cars, 33% for manual gearbox cars and 40% for automatic gearbox cars, and 46% on average for the premium group and 37% for the generalist group.[40]

Table 3: The difference in CO_2 emissions between laboratory tests and real-world conditions (2017)

Vehicle Type	Difference in CO_2 emissions (lab tests vs. real-world conditions)
Petrol cars	35%
Diesel cars	41%
Hybrid electric cars	47%
Plug-in hybrid electric cars	221–225%
Manual gearbox cars	33%
Automatic gearbox cars	40%
Premium group	46%
Generalist group	37%

Source: compiled by the author

The electric car remains a premium technology: the purchase price is around €10,000–15,000 higher[41] than for a car with an internal combustion engine, which makes it much easier to electrify premium models.[42] An electric vehicle has large and powerful

38 Transport & Environment 2024c.
39 International Council on Clean Transportation 2019: 46.
40 TIETGE et al. 2019: 8–13.
41 Deloitte 2024: 6.
42 Transport & Environment 2024b.

batteries, fantastic acceleration and top speed and very low noise levels. Unsurprisingly, although premium brands were initially hesitant to electrify their models, they swiftly shifted towards electrification once they realised that diesel technology was insufficient to meet the previous 2021 CO_2 targets and the 93.6 g/km target already in place as mentioned earlier.[43]

Electric cars have the potential to become an affordable technological solution, provided they adopt smaller, lighter batteries designed primarily for specific mobility needs, such as urban transport, rather than serving as all-purpose vehicles. However, instead of pursuing this direction, the European automotive industry is increasingly favouring heavier models. This trend, coupled with electrification, is expected to exacerbate the upward trajectory in vehicle weight rather than counteracting it.[44]

The environmental, economic and political costs of electrification

Over a decade ago, when the automotive industry began considering mass production of electric cars and several brands released their first electric models, it was widely accepted that electric vehicles could not compete with conventional cars due to their limited range and long charging times. Rather, it was expected that they would shift the focus from car use to shared mobility, and from multi-purpose vehicles to dedicated service-based vehicles supported by a dense charging network.[45]

One of the first cars of this type was the Bolloré Bluecar, used by the Paris-based car-sharing service Autolib. Unlike the premium models, the Bluecar was extremely small and compact, measuring just 3.3 metres, compared to the average EU car length of 4.2 metres in 2009.[46] It was also only 1.7 metres wide, which is not even comparable to the almost 2 metres width of the new SUVs in the recent T&E survey mentioned earlier. The vehicle's total weight was only 1,070 kg, including the 30 kWh battery, which weighed 300 kg on its own.[47]

By comparison, the Tesla Model Y, Europe's best-selling electric vehicle in 2023,[48] weighs an average of 890 kg more than the Bluecar, depending on battery size and engine power. It is also 1 m longer and has 57 kWh battery capacity, with a range of 455 km.

The Volkswagen E-Up, launched in 2013 as a relatively affordable electric car, illustrates the upward evolution of electric cars in Europe. Between 2013 and 2020, its battery capacity doubled from 18.7 kWh to 36.8 kWh and its range increased from 130–150 km to 250–300 km. Engine power did not increase significantly (from 60 kW to 61 kW). The vehicle's weight has increased by 90 kg thanks to the larger battery, while its price has risen by 11.5%.

Here again, the problem comes to the fore that Volkswagen, instead of using the technological advances in batteries and electric powertrains to make the E-Up lighter

43 Pardi 2022: 174.
44 Transport & Environment 2023.
45 Villareal 2011: 326–339.
46 Vervaeke–Calabrese 2015: 245–264.
47 Pardi 2022: 177.
48 De Prez 2024.

and more affordable, has followed an upward trend to improve, presumably for greater profit (and this small city car is no longer available in the range). Thanks to this general trend, it is already clear that the average European electric car will be much heavier and more powerful than the equivalent internal combustion car. According to the International Energy Agency (IEA), the average pure electric vehicle (BEV) and plug-in hybrid (PHEV[49]) sold in Europe in 2017 was 200 kg and 420 kg heavier than the average internal combustion engine car, respectively. Newer models, such as the Volkswagen E-Golf, added an average of 400 kg to the equivalent combustion version.[50] An even larger electric Volkswagen ID.3 model with a 58 kW/h battery pack weighs almost 600 kg more than a Volkswagen Golf VII with an internal combustion engine.[51]

By contrast, the same data for an average Chinese pure electric vehicle, which is 210 kg lighter than a Chinese internal combustion car in the same category and 300 kg lighter than an average European electric vehicle, suggests that a different approach is possible. Electric vehicles are being treated differently from conventional internal combustion models, combining electrification, weight reduction and low prices to offer an affordable, environmentally friendly means of transport for the urban middle class.[52]

In 2023, the best-selling Chinese models were the Wuling Bingo and the BYD Seagull. The Wuling Bingo is a compact city car with a 17 kW/h battery and a range of around 203 km, starting at a price of around $8,200. The car has a maximum speed of around 100 km/h and a length of 3.5 metres, making it ideal for use in urban environments. One of the key figures is that Wuling Bingo weighs around only 830 kg. This light weight contributes to the car's efficiency and relatively low energy consumption, which is particularly important in urban traffic. The BYD Seagull also showed strong sales (with its weight of 990 kg), especially thanks to its affordable pricing and competitive range (300 km with the smaller battery), which starts at around $10,500.

It is a good counter-example to passenger cars from Volkswagen and other European manufacturers. It is also telling that in 2023, the cheapest new electric car available in Europe was 92% more expensive than the cheapest combustion engine car, while in China the affordability problem was solved, with the cheapest electric car available costing 8% less than the cheapest combustion engine car.[53]

Environmental impacts of heavier electric cars

Weight is a decisive factor for electric vehicles, even more so than for internal combustion cars, as heavier electric vehicles either require larger batteries (which are the most expensive component of electric cars, as they can account for 35–40% of the total cost)

[49] A PHEV (Plug-in Hybrid Electric Vehicle) is a hybrid vehicle that combines an internal combustion engine with battery-powered electric drive. Its battery can be charged from an external power source, enabling pure electric operation over shorter distances, while the internal combustion engine provides flexibility for longer journeys.

[50] International Council on Clean Transportation 2019: 53–54.

[51] INGRAM 2023.

[52] PARDI 2022: 177.

[53] DRAGHI 2024: 150.

or have a shorter range, which is the biggest disadvantage of electric vehicles. Furthermore, weight also affects performance, as it reduces acceleration and top speed – and weakens breaking capacity.[54] The upward market trend also means that not only is the weight of these cars increasing, but also their performance, with better acceleration, higher top speed and greater range, which means that cars require ever larger batteries, which in turn create even more weight (for example, a Tesla Model Y with a 75 kW/h battery weighted 770 kg in 2020, a Volkswagen E-Up with a 36.8 kW/h battery weighted 248 kg).[55]

Doubling the average size of electric vehicle batteries negatively affects the whole life cycle. Firstly, some of the materials needed to make batteries, particularly cobalt and lithium, are rare, and their extraction is polluting. By doubling the size of the average electric vehicle battery, the upward trend is likely to increase the price of these materials and undermine the economic viability of batteries in car manufacturing.[56]

Furthermore, the production of batteries requires a lot of energy, and is mainly done in countries where energy production is highly CO_2-intensive (such as China) and highly polluting. Therefore, electric vehicles have a CO_2 "debt" when they are put into use and it takes several years before they have less CO_2 emissions than equivalent internal combustion engine cars (of course, this may still reduce CO_2 emissions and noise locally, especially in cities, but it is likely to shift emissions globally to other industries and other geographic locations). For another example, a Tesla Model S produced in the United States had a CO_2 footprint of 10 tonnes, so it would need to travel an average of 64,200 km to catch up with its CO_2 footprint. For a Tesla Model S manufactured and used in China, this debt to be recovered increases to 15 tonnes of CO_2 and 139,400 km are required to repay. For a Renault Zoe manufactured and used in France, the debt is 2,100 kg CO_2 compared to an equivalent Renault Clio and only 16,800 km are required to repay.[57] Again, on the one hand, this shows that the cars with the lowest weight and size would be the most viable, and would ultimately have a smaller ecological footprint, on the other hand the ecological footprint can depend to a large extent on where the vehicle is manufactured. Not to mention that the capacity of the batteries will decrease over the years, thus reducing the range that can be covered.[58]

Table 4: CO_2 debts and distance to offset CO_2 (km)

Car model	Manufacturing country	CO_2 footprint (tonnes)	Distance to offset CO_2 (km)
Tesla Model S	USA	10	64,200
Tesla Model S	China	15	139,400
Renault Zoe	France	2.1	16,800

Source: compiled by the author

54 Világgazdaság 2024.
55 Onyango 2024.
56 Jetin 2020: 156–177.
57 Arval Mobility Observatory 2019.
58 Pardi 2022: 178.

Finally, although electric vehicles do not locally emit CO_2, they use energy produced with CO_2 emissions. In 2018, the EU energy sector emitted 3.3 billion tonnes of greenhouse gases, well below the 4.3 billion tonnes in 1990, but still more than the 0.9 billion tonnes emitted by the transport sector in 2018.[59] Doubling the size of the battery can double the amount of energy used by EVs and thus their associated CO_2 emissions.[60]

Passenger cars produce harmful fine particles (PM 2.5 and PM 10) mainly through brake, tyre and pavement wear, which account for 60% of total emissions, and this will not change with the use of electric vehicles.[61] The extra weight increases wear and tear, which adds to the impact of air pollution. Larger cars also take up more space, increasing urban congestion, transport emissions through congestion (which means that internal combustion cars emit even more pollutants), and increasing parking difficulties. In my opinion, France is setting an example to be followed by taking a firm stand against heavy and polluting vehicles and by reducing the weight limit for heavy vehicles from 1.8 tonnes to 1.6 tonnes with the introduction of restrictions on 1 January 2024, which will entail additional taxes on the purchase of a new car.[62]

As a result, most SUVs will also be subject to this extra charge. The additional charge for vehicles up to 2.1 tonnes is €10 per kilogram, while for vehicles heavier than 2.1 tonnes, the amount is €30 per kilogram. This move will encourage people to choose greener vehicles and promote sustainable transport in the country. It is hoped that the higher taxes will discourage people from buying heavy off-road vehicles, which cause more pollution and pose a greater danger to pedestrians or cyclists in the event of a collision.[63]

The potential impact of electric vehicles on the economy and society

The general upward trend in the car market, both in power and weight, is making the average European electric vehicle more expensive, slowing down its uptake. Electric cars are primarily purchased in high-income countries, mainly in Northern and Western Europe, and only if substantial public subsidies are available (between €5,000 and €10,000 on average). At the same time, various tax breaks and discounts on the purchase price are being phased out in many countries (Norway, Germany, France). As we have seen, the upward drift favours premium brands, mainly produced in Germany, and we have seen how this has been to the detriment of generic brands in France and Italy. Electrification is likely to further reinforce this trend by making it more difficult for generic brands to be profitable, leading to further structural transformation and relocation of production to low-wage countries, and raising further problems from a social and political perspective about the sustainability of such a transition. Moreover, as the production of electric vehicles requires fewer workers in production (20–25%), there are, for example, in Germany, a series of mass general restructurings or even factory closures

59 European Environment Agency 2020.
60 BERJOZA–JURGENA 2017: 1391.
61 Aiq Quality Expert Group 2019: 72.
62 FROST 2024.
63 FROST 2024.

due to falling demand.[64] The Volkswagen group could reduce the number of workers in Germany by up to 30,000 in the medium term, which would mean a 10% reduction.[65]

Because of their high price, new electric vehicles are currently only available to wealthier households, who (to a lesser extent) usually benefit from government subsidies, tax breaks, free parking and lower running costs. In contrast, poorer households must contend with the economic and social costs of maintaining outdated internal combustion cars.[66]

Governments are being forced to compensate for the rising costs of electrification and falling revenues from fuel taxes with car user charges, including higher fuel taxes. The case of France has shown how contradictory such policies can be. The 2018 fuel tax hike, justified on environmental grounds, triggered the biggest social movement since 1968, the Yellow Vest Movement.[67] Another good example is the 2024 farmers' demonstration in Brussels, which drew attention to the rising costs of farming, when a crowd of thousands of protesters marched through the centre of Brussels, blocking the streets and drawing attention to the problems.[68] This is another sign of a society very sensitive to costs.

In a European context of increasing political instability and the rise of populist parties, it would not be surprising if the growing social disparities in access to sustainable mobility led to further social tensions and even 'class warfare'. It is also worth noting that from 2027 road transport will also be included in the EU Emissions Trading Scheme (ETS2), affecting emissions from transport fuels. Consequently, the running costs of combustion engine vehicles are expected to increase.[69]

One might think that in the long run, expensive electric vehicles will become as affordable as used cars. Still, even in a high-income country like France, this is not the case, where the average used car bought by the average French household is 9 years old and costs less than €4,000. This means it will take well over a decade before the average electric vehicle model available on the European market will be affordable for the average European household, even in high-income countries.[70] It will, therefore, take even longer for poorer families to access these vehicles, leading to an ageing fleet.[71] Not to mention that the uptake of electric vehicles is hindered by their inherently high purchase price, low residual values and typically higher insurance premiums. Electric cars are generally more expensive to insure than internal combustion engines because the average cost of damage is higher, as well as the cost of repair and battery replacement.[72]

Central and Eastern European countries contributed most to increased CO_2 emissions from road transport. Their greenhouse gas emissions from cars increased by 130% between 1990 and 2018.[73] This is partly due to the rapid growth of their car fleets and partly to the fact that this growth was mainly achieved by importing second-hand cars

64 Automotive News Europe 2023.
65 Automotive News Europe 2024b.
66 Ryan 2023.
67 Amiel 2019.
68 Chiappa et al. 2024.
69 Draghi 2024: 146.
70 European Court of Auditors 2024: 46.
71 Demoli 2015: 311–328.
72 Dai–Lechner 2024.
73 National Assembly Office 2021.

from the 17 'Western' EU countries. Given that electrification makes new cars more expensive, it is clear that the 120 million citizens living in these countries under the current regulatory framework question how much they will be included in the new EU green deal. The gap between rich and poor European countries and between rich and poor households will widen and the economic, social and environmental costs of electrification may prove too high to be politically sustainable.

Conclusion

Overall, the EU regulatory framework for reducing CO_2 emissions in the transport sector has played a central role over the past twenty years in driving the industry away from what it should have been doing, namely reducing the weight, mass and size of cars sold to make them less polluting. EU legislation offering more favourable treatment to heavier vehicles pushes car manufacturers towards 'premiumisation'. The continent's car fleet will thus be made up of increasingly heavy and powerful cars, which will harm society in terms of the increase in car prices and the adverse effect on the environment. As it is almost impossible to meet CO_2 standards with ever heavier and heavier cars (mainly internal combustion), emissions will not fall as much as expected, and as shown above, electrification is not the solution to eliminate all emissions. Fortunately, more and more car manufacturers are recognising this negative trend. They are introducing a range of models that better embody the needs of urban transport, with smaller and more affordable electric cars.

Footprint-based targets should replace weight-based targets, as these would not penalise weight reduction but would take into account the utility of cars. In addition, size reduction is a desirable objective to reduce urban congestion and improve environmental protection. Regulation should encourage car manufacturers to reduce the weight and size of vehicles, not the other way around. Adaptation at the national level could also help, as the current legislation is more suited to the needs of Northern and Western European countries but not the fleet structure of Southern and Central and Eastern European countries.

Finally, I think that the increasingly popular strategy of postponing the EU ban on internal combustion passenger cars (or the restriction on synthetic fuels under the latest EU decision[74]) beyond 2035 should also be considered. Many carmakers report that demand for electric cars is falling, or at least not growing at a rate that would satisfy their sales, leaving the European car industry in a difficult situation that is unlikely to be helped by EU safeguard tariffs on Chinese cars.[75] The Commission's new draft strategy paper ("Competitive Compass") – which proposes a technology-neutral approach to achieving climate neutrality targets in the automotive sector under the new Clean Industrial Deal (replacing the former Green Deal) – could be a step forward.[76] This may

74 POSANER 2023.
75 LIBOREIRO 2024.
76 European Commission 2025.

also include allowing the sale of plug-in hybrids after 2035, the use of range-extending technologies after 2035 and relaxing penalties from emission limit values.[77]

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[77] Randall 2025.

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Bettina Tóth[1]

Rightward Shift vs. EU Climate Policy

Will the 2024 EU Elections Serve the Future of Climate Policy?

The summer of 2024 brought a number of twists and turns for the future of green policy; finally, there was no change in the President of the European Commission, which partly guarantees the continuity of the European Green Deal. But a paradigm shift from the previous political priorities has been done so far, such as putting economic growth and European competitiveness at the top of the agenda. At the same time, there was a major reshuffle in the European Parliament with the emergence of the Patriots for Europe; this group has a rather different approach to the policy.

This analysis examines the likely direction of EU climate policy over the next five years, in relation with the emergence of the Patriots for Europe as the third largest political force and the significant loss of the Greens, moreover, with the re-prioritisation of the new Commission after the 2024 European Parliament elections.

Keywords: European Parliament, European Commission, climate change, climate policy, Patriots for Europe

Introduction

The European Parliament elections held on 6–9 June 2024 saw the highest turnout since 2004 (when the current Member State structure was created, except for the United Kingdom). 50.74% of eligible voters went to the polls to determine the composition of the European institutions for the next five years.[2] However, the turnout for the 2024 elections, which just surpassed the 2019 turnout (50.66%), was lower in more than a third of Member States, including Italy and Spain. The higher turnout may have been partly because citizens in Germany and Belgium could vote from the age of 16, in Greece from 17 and in Hungary local elections were held.[3] For the latter, holding two elections on the same day resulted in an increase in turnout of more than 15% compared to 2019.

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[2] European Parliament 2024a.

[3] MTI–AB–HF 2024.

In most Member States, right-wing parties won overwhelmingly, mirroring the recent shift to the right in national parliamentary elections and, where applicable, in regional elections. Regarding the future of EU climate policy, the rise of right-wing parties that are climate sceptical on a number of platforms and advocate a major reform of the current green policy (which includes the transition to non-fossil energy sources and climate protection), as well as the new family of parties, Patriots for Europe, will limit the efforts of the last five years. Unless the new Commission also moves away from the previous cycle and will be dealing with building a competitive economy (with less emphasis on sustainability standards). However, climate policy activity will not cease, it is just likely to be more difficult to push new ambitions through the decision-making process, even for populist reasons.

Results of the 2024 European Parliament elections

In the period 2024–2029, 720 MEPs (compared to the body of the previous term, where the number of MEPs was reduced by the end of the term due to Brexit) will hold co-legislative office. The largest moderate right-wing European People's Party (EPP) increased its number of MEPs from 179 to 188 and the European Conservatives and Reformists (ECR) from 69 to 78 compared to the 2019 elections. The Left party (The Left) and Liberal Renew have seen a significant weakening. The Socialists and Democrats (S&D) have stagnated and Identity and Democracy (ID) has been forced to fold by the emergence of Patriots for Europe (PfE) and the German Alternative für Deutschland party's search for a new path, replaced by the Europe of Sovereign Nations (ESN) with 25 MEPs.[4]

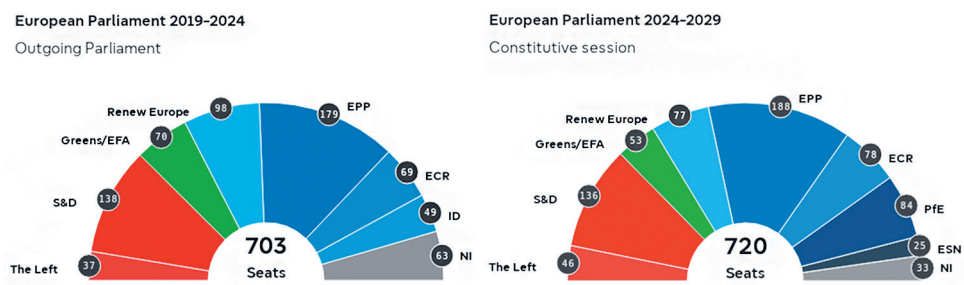

Figure 1: Fractions in the European Parliament between 2019–2024 and 2024–2029
Source: compiled by the author

In addition, the 2024 European Parliament elections are far from being a breakthrough for the Greens compared to five years ago, as there will be only twenty fewer Green MEPs in the European Parliament by 2029 than in the previous period. The projections for Greens were 55 seats, but in the end only 53 MEPs joined the fraction, dropping them to

[4] European Parliament 2024b.

sixth place in the EP in terms of the number of MEPs. In 2019, experts were still talking about a sweeping "green wave": in 2014 only 12.1 million Europeans voted for all Green MEPs, while five years later 23.3 million voted for all Green MEPs. This was partly due to a certain disillusionment with the left–right battles, with the Greens showing a kind of golden mean in many countries.[5] In that time, the Commission's strategic guidelines reflected to the needs of people, with the announcement of the European Green Deal, the goal of net climate neutrality for the European continent by 2050.[6]

According to the figures, the 2024 result shows not only a shift in European citizens' preferences but also that many MEPs, even if they somewhat agree with the climate policy guidelines, have imagined their work for the next five years in preference to other policies and in a different political direction. Although there is indeed a decline in the Greens in terms of results, an EU opinion poll conducted before the 2024 elections does not support this finding.

In spring 2024, Europeans expressed high levels of concern about the environment and climate protection, with more than three quarters (78%) saying that environmental issues have a direct impact on their daily lives and health.[7] On this issue, voters in Spain, Greece, Malta, Cyprus, Portugal and Italy agreed between 88% and 98%. The survey also showed that 92% of respondents in the 27 countries believe that companies should pay the costs of their pollution and 84% agreed that EU environmental legislation is necessary to protect the environment. These results are almost identical to those of the last survey at the end of 2019, highlighting the continued importance of EU policy in the public's mind.[8]

This right-wing shift is not only reflected in European elections: in recent national elections, right-wing parties have similarly gained more support, such as the Austrian Freedom Party (Freiheitliches Partei Österreich) in Austria[9] and the Partij voor de Vrijheid (Freedom Party) in the Netherlands.[10] They are joined by the French National Rally, which, after a first-round victory, did not win the 2024 parliamentary elections, but is one of the parties with the largest citizen support in one of Europe's leading countries.[11] The German Alternative für Deutschland, which has been steadily gaining strength in the state elections before, is also a not insignificant result for the 2025 federal elections.[12] The first three parties have also particular importance in the Patriots. Interestingly, the Eurobarometer survey found, for example, that the recognition of the direct impact of climate change on everyday life was prominent in countries where, following the Patriots' stance, the right-wing parties mostly refused to talk about it.

5 Schminke 2019.
6 European Commission 2019.
7 European Union 2024.
8 European Union 2020.
9 Ionta 2024.
10 Verhelst–Hartog 2024.
11 Fella 2024: 37–38.
12 Fix–Winograd 2024.

But who are the Patriots for Europe?

The new political group was launched in Vienna in the weeks after the 2024 European Parliament elections, with the adoption of the so-called Patriots' Manifesto by Viktor Orbán, Prime Minister of Hungary, Herbert Kickl, President of the Austrian Freedom Party and Andrej Babiš, former Czech Prime Minister and President of the ANO party. According to the manifesto, the members of the group reaffirm the Nations of Europe which stresses the need to focus on national sovereignty rather than the federal nature of the European Union.[13] In the days following the signing, other memberships were announced. The new group was officially announced on 8 July 2024.[14] This required a minimum of 23 members from at least 7 countries to join the Patriots, a target that was significantly exceeded.[15] The list summarises the number of delegates per country and how many of them joined the PfE:

Table 1: Members of the Patriots for Europe

National party	Acronym	Number of national delegates to the EP/PfE
FIDESZ-KDNP – Hungary	FIDESZ-KDNP	21/10
ANO 2011 – The Czech Republic	ANO	21/7
Coalition Přísaha a Motoristé – The Czech Republic	Oath and Motorists	21/2
Freiheitliche Partei Österreichs – Austria	FPÖ	20/6
Chega – Portugal	Chega	21/2
Vox – Spain	Vox	61/6
Partij voor de Vrijheid – The Netherlands	PVV	31/6
Vlaams Belang – Belgium	Vlaams Belang	22/3
Dansk Folkeparti – Denmark	Danish People's Party	15/1
Lega per Salvini Premier – Italy	Lega	76/8
Foni Logikis – Greece	Voice of Reason	21/2
Latvija pirmajā vietā – Latvia	Latvia First	9/1
Rassemblement National – France	National Rally	81/30

Source: compiled by the author

The Patriots for Europe, led by Jordan Bardella (National Rally), brings together 12 countries and 13 parties with 84 seats, making it the third largest political group in the European Parliament behind the European People's Party (188) and the Progressive Alliance of Socialists and Democrats (136).[16] At the same time, the parties belonging to the Patriots do not yet have a significant influence in the EU institutions. The number of delegable MEPs who have joined the PfE group is relatively small, and their presence in other EU institutions is not strong either, as they are not parties that give heads of state

13 Hungarian Conservative 2024.
14 WAX 2024.
15 European Parliament 2024c: 27.
16 European Parliament 2024d.

or government (except for FIDESZ-KDNP and PVV). For the time being, only the FPÖ could have improved this ratio if it had succeeded in forming a government in Austria after the elections in early autumn 2024 and thus could have provided the Chancellor.[17]

As the Patriots' manifesto puts it, the group was essentially built around core values and policies key to preserving national sovereignty, such as illegal migration or European competitiveness, with climate and energy policy views less shaping the grouping criteria. However, it is also worth examining the attitudes of the individual parties, as the European Green Deal remains a priority on the agenda of the new Commission, although in a slightly less prominent and different way.

Energy and climate policy issues

FIDESZ-KDNP

In case of the Hungarian party coalition, the Hungarian Presidency's programme clearly shows the lines of the two policies: in the field of energy policy, great emphasis is placed on supporting the use of geothermal energy and on network construction, which is essential for further improving energy supply security.[18] Furthermore, in terms of energy production, there is a strong reliance on nuclear energy. On climate policy, a reality-based approach is taken, with a focus on real results (e.g. in the circular economy or water policy) rather than on lofty targets, and a greater role for public opinion.[19]

ANO

The Czech ANO 2011 party's position on energy and climate policy is clear: protecting the economy is the priority.[20] Therefore, they reject a mandatory target for the share of renewable energy and support the use of conventional energy sources until sufficient energy production capacity is built (mostly relying on nuclear energy). They also support the EU's concept of energy independence. In terms of climate policy, they believe that the European Green Deal needs to be revised; they see the solution – alongside emissions reductions, of course – as more climate action.

Oath and Motorists

In the EP elections, the Přísaha (Oath) and Motoristé (Motorists) parties ran in coalition and achieved a landslide victory, even though they did not have a written political

17 Tagesschau 2024.
18 Hungarian Presidency 2024: 37.
19 Hungarian Presidency 2024: 28–29.
20 ANO s. a.: 6–7.

programme. Their views can be deduced mostly from their statements and the party agenda on their joint website.[21] One of their basic positions is that the European Green Deal is a destructive policy for many key sectors, such as industry, finance, education or agriculture, and therefore they ignore environmental standards and deeply condemn green activists. They also oppose the ban on internal combustion engine vehicles.

FPÖ

The Austrian Freedom Party (FPÖ) has a much different vision of the policy: nuclear energy has never been dubbed green energy (this view has now changed; they see it as a 'greener' alternative than PV)[22] and biodiversity protection is a priority. However, the Green Deal is viewed in a similar way to ANO: it cannot be continued in its current form, as it is a major burden on European industry.[23]

Chega

The Portuguese party supports the concept of energy independence (specifically reducing dependence on Eastern energy sources), promoting offshore wind energy, green hydrogen and lithium research, and making buildings more energy efficient.[24] They also advocated the development of energy storage infrastructure, the use of forest biomass in public buildings, decentralised energy production (one of the instruments could be the small modular reactor – SMR), the promotion of biofuels and LNG.

With regard to climate policy, for example, they expressed support for the election of a climate-denying agriculture minister during the formation of the government; they believe that extreme weather events have always occurred.[25] At the same time, waste management, water conservation and animal welfare have high priorities in their programme.[26]

Vox

The Spanish party is renowned for its climate denialist stance, mainly due to the subordination of many other policies to climate action; however, over time they have sometimes become more nuanced on the issue.[27] Their programme also includes a complete reversal of the 2030 targets and a shift away from a green policy approach to agricultural subsidies.

21 Přísaha a Motoristé 2024.
22 MAURER 2024.
23 Freiheitliche Partei Österreichs 2024.
24 Chega 2024a.
25 MOUTINHO 2024.
26 Chega 2024b.
27 LEE 2022.

It also criticises the 'green' attitudes of energy policy to date (e.g. green tax), while arguing for energy independence and the continued use of hydrocarbons (specifically natural gas).

PVV

The Dutch party advocates a concrete and not EU mainstream green policy: it wants to rely on coal and gas power plants and also nuclear energy for energy production, while striving for energy sovereignty (e.g. supports the introduction of a ban on gas exports). They support a complete phase-out of emission reduction measures, the climate fund, wind power generation and solar parks, and would withdraw from the Paris Agreement and repeal the domestic climate law.[28]

Vlaams Belang

The Belgian party offers the creation of a Belgian energy company based on nuclear energy, including SMRs, as a solution to the problem of energy dependency, including the repeal of the law abolishing nuclear power plants. In addition, blue and green hydrogen are also high on their agenda. According to the party, the European Green Deal would be abolished completely.[29]

Danish People's Party

The Danish People's Party focuses on the social justice of the green transition. They focus on breaking high energy prices, abolishing the carbon tax and strict regulations on wind energy (wind turbines must not harm the environment and the daily life of the population).[30] The party also considers international climate agreements to be unfair, as they impose interventions that upset the balance of nature through human activity. However, they reject an ideological approach to environmental protection.[31]

Lega

The Italian party sees the energy transition and energy independence as a feasible parallel to diversification: nuclear energy (fusion, SMR), geothermal and hydroelectric energy, and biomass are all elements of this expansion. Like other members of the fraction, they propose a complete revision of the Green Deal.[32]

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28 PVV 2023: 22–23.
29 Vlaams Belang 2024.
30 Dansk Folkeparti 2024a.
31 Dansk Folkeparti 2024b.
32 Lega per Salvini Premier 2022: 43–44.

Voice of Reason

The Greek party sets its energy policy priorities in increasing the share of renewable energy sources (solar, wind, biomass and biogas) and improving the energy efficiency of buildings. In addition to this, they also emphasise the protection of the environment, although this is not discussed in detail in the political agenda.[33]

Latvia First

The party is satisfied with Latvia's energy, climate and environmental policy achievements so far (and they would like to maintain them); therefore, they do not support further action; instead, they believe that the focus should be on countries where action is lacking.[34]

National Rally

The French party focuses its energy policy on the following pillars: nuclear energy (SMR, fast neutron reactors, etc.), expansion of hydroelectric capacity, preference for hydrogen and geothermal energy, phasing out coal, conversion of power plants to biomass.[35] Climate protection aspects are barely mentioned in the party programme. According to their agenda, the ban on internal combustion engine vehicles and low emission urban zones should be abolished.

Overall attitude of the PfE

On energy policy, there is no major contradiction between members of the political group: almost without exception, they support the creation of energy sovereignty, whether European or domestic, with a particular focus on nuclear energy. The only outlier is the Austrian FPÖ, who had previously rejected nuclear energy but now see it as a better alternative than even solar energy. The Dutch party has more extreme views on renewables: they want to continue to rely on gas and coal power plants for the country's energy production, alongside nuclear power. Spain's Vox wants to keep hydrocarbons in a similar role. The Czech ANO does not consider it important to have a mandatory share of renewable energy until they can achieve the transition, mainly based on nuclear energy. On this basis, the Patriots will have a fairly united position on energy policy; however, there may be disagreements between members of the fraction, for example on the issue of renewable energy, not to mention other large parliamentary groups.

33 Foní Logikís 2024.
34 Latvija Pirmaja Vieta 2024.
35 Rassemblement National 2024.

On climate protection, the Patriots are not so united: while the Danes place great emphasis on balancing society and the environment, the Dutch, Belgians and Czech Oath and Motorists also reject the current international climate protection agreements and strategies. But so do the ANO, the FPÖ, the Danish People's Party and the Lega: they believe that the European Green Deal should be revised. The National Rally has almost no mention of climate protection targets in its programme, while Chega and Vox have a more climate-denying attitude. As a result, the Patriots are likely to take a hard line against climate and environmental legislation; in the next five years, a number of situations similar to the nature restoration law will arise; in a word, a strong counter-pole in the European Parliament in this area.[36]

What is the new Commission's position on "green" issues?

In the run-up to the 2019 elections, there was not only a greater receptivity from society to climate action, but it also determined the candidates. Ursula von der Leyen campaigned with ambitious climate pledges and immediately after taking office,[37] she announced the strategic pillar for the next five years, the European Green Deal, which she then dubbed "Europe's man on the moon moment".[38]

The Commission's pro-green policy attitude is likely to continue, as it continues to be headed by the previous President, Ursula von der Leyen. Nevertheless, the results and statements so far suggest that von der Leyen's green flagship will take on a different character than in the last five years.

A fundamental change in 2024 was that von der Leyen significantly reduced the number of green policy issues during the campaign period, focusing mostly on competitiveness, cutting bureaucracy, defence or agriculture.[39] In the latter context, for example, the proposal based on the European Citizens' Initiative "Save the Bees and the Farmers" was withdrawn at the beginning of 2024, following the farmers' protests.[40] This proposal originally aimed to reduce the use of chemical herbicides by 80%, and the Commission had already reduced it to 50% in its proposal. However, this is just one example of the "green deal fatigue" (a reference to the familiar phrase of enlargement fatigue)[41] that has pervaded the EU institutions over the last 1–2 years, due to growing climate scepticism.[42] In addition, the scepticism is no longer about whether climate change exists, but about the adequacy of the EU's response, which in many cases is very strict and, in some cases, even contradictory.

36 Tóth 2024.
37 Grüss 2024.
38 Hutchinson 2019.
39 Griera 2024.
40 Pesticide Action Network Europe 2024.
41 Staníček et al. 2023.
42 Moritz 2024.

The shift in emphasis was not only noticeable in the campaign, but also in her re-election speech.[43] After outlining the future of European competitiveness, she went on to describe what the Green Deal in action would look like. Billed as a strategy for growth, the agreement was accompanied well before the campaign period by the announcement of a plan for European industry, an approach that differs markedly from that of the last five years.[44] The new line, which converges to a lesser extent with the previous one, would not be reprehensible if the objectives of the previous cycle had been largely met: in 2019, 168 legislative packages were planned to be adopted by the end of the cycle, almost 90 of which concern the Green Agreement. These include the Border Adjustment Mechanism (CBAM), the directive on increasing the share of renewables in the energy mix, the review of the EU Emissions Trading Scheme (ETS), and even the long-stalled nature restoration law, which finally came into force on 18 August 2024. Of course, the fact that when the Commission took office on 1 December 2019, the European Green Deal was in the spotlight instead of the Covid–19 epidemic also contributed to the result. But the pandemic also had an impact on the Commission, followed two years later by Russia's war against Ukraine. And in the last months of the legislature, another conflict in the EU's neighbourhood, the Middle East, unfolded, adding to an already tense geopolitical environment. All these events have had a significant impact on the Commission's scope and focus.

All in all, however, the balance of the first priority is positive, with only five of the original initiatives withdrawn and four blocked by some Member States. The remaining 73 initiatives are expected to be adopted in the next cycle, but the change in strategic direction means that it is not clear that all the old draft legislation will be adopted. This is all the more the case as the announced Clean Industrial Deal and the European Competitiveness Fund will also support (less sustainable) economic competitiveness, green, digital and social transition, shifting the focus from the significant environmental aspect to the social and economic sphere.

This is the path outlined in the Letta report published in April 2024 and the Draghi report published in September, which could have a major impact on the direction Ursula von der Leyen is taking. The Letta report on the EU single market was commissioned by the European Council to Enrico Letta, while Ursula von der Leyen asked Mario Draghi to prepare a report on European competitiveness, accompanied by reform proposals. The two former Italian Prime Ministers highlighted similar points about the green future of the European economy and market, with the difference that Enrico Letta focused on socio-political aspects (e.g. a fair green transition, collective share of the transition costs), while Mario Draghi approached it from a more material (technology, energy, defence, etc.) perspective.[45] The Draghi report confirmed on several points that a paradigm shift and the breaking down of barriers (including regulatory relaxations, but not excluding possible contractual changes) may be necessary in the future to maintain competitiveness. A good example of this is the issue of clean energy, which the report argues will ultimately protect Europe from price shocks, while also offering

43 European Commission 2024a.
44 European Commission 2023.
45 RAGONNAUD 2024: 5–7.

new economic opportunities. However, the transition will be gradual and fossil fuels will continue to play a central role in determining energy prices for the rest of the decade. However, more flexibility in EU environmental legislation will be essential if renewables are to gain traction.[46]

The shift in focus cannot be criticised in itself, however, if it will result in a huge lobbying effort and the pursuit of economic interests, it will be equally far from the 2050 goals. Although the Green Deal has "significantly improved" the EU's performance in tackling climate change, according to the Climate Action Tracker, experts say the bloc should implement further policies to align with the Paris Agreement targets.[47]

Conclusions

The striking result of the 2024 European Parliament elections, with the strengthening of the right and the significant loss of the Liberal and Green parties, will make it difficult to make ambitious progress on EU climate policy, experts say. Examples of this were already evident in the previous term on important issues, such as the aforementioned nature restoration law, which was delayed due to vetoes from various member states, including Hungary. Although the majority of EU climate protection measures for the next five years will depend on the newly elected European Commission, because of its role as a legislative initiator, the European Parliament is also indispensable in this respect.

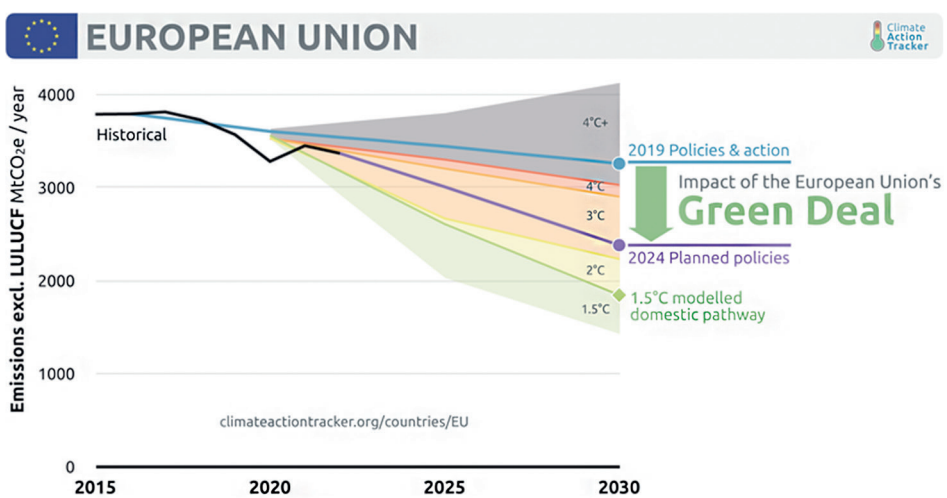

Figure 2: Impact of the European Green Deal on Europe's emission
Source: Climate Action Tracker 2024

46 European Commission 2024c: 14.
47 Climate Action Tracker 2024.

In the coming months, the new European Parliament, the new Commission and the Member States will have to agree, among other things, on an emissions target for 2040 as a stepping stone on the bloc's path to net climate neutrality by 2050.[48] The Commission's proposal would require Member States to achieve a 90% reduction in greenhouse gas emissions (compared to 1990 levels) by 10 years before the time the final goals must be achieved, including a significant increase in renewable energy capacity, a major reduction in the use of fossil fuels and the development of carbon capture and storage (CCS) technologies (including natural sinks, i.e. planting trees).[49]

The rightward shift in the European Parliament and the emergence of Patriots for Europe as the third largest political force could even delay or even scrap this framework legislation – as required by the European climate law[50] – given the fundamental scepticism of many MEPs about climate change and their rejection of current international climate policy, not to mention the pro-fossil fuel attitude. Moreover, if agreement on the regulatory framework is also difficult to reach, there will be no progress in defining possible constraints in specific sectors, such as agriculture or industry. However, it already seems that the new Commission will be more concerned with developing a competitive (and less sustainable) European industry in the next five years. In this case, it may not be necessary to compromise, but it may be easier to reconcile interests; if the sectoral discontent experienced in the second half of the previous cycle (e.g. farmers' protests) is to be avoided, EU decision-makers will certainly set policies that promote economic development rather than hamper it as their flagship. Nevertheless, this will do absolutely nothing to reduce the scale of climate change, adapt to its inevitable consequences, or to reach the EU's 2050 targets. Some projections suggest that even current policy measures will not take Europe towards net climate neutrality, with emissions reductions of around 64% by 2050.[51] Moreover, if regulations do not increase or are not implemented by Member States in the next few years, the success rate will be even lower. In this scenario, there will be no choice but to adapt to the impacts of climate change. Nevertheless, we must also be prepared for these situations.

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