ANNEX A: METHODOLOGY OF THE ECIPE TECHNOLOGY READINESS INDEX (TRI)

The Technology Readiness Index (TRI) measures the adoption of six key technologies, as shown in Table A1 below. The data for each technology comes from Eurostat surveys, with each indicator measuring the share of firms using the respective technology in their business operations. For each year, sector (at the two-digit level), and country, the TRI score is calculated as the average of the six technology indicators, as shown in the equation below.

$$TRI_{c,s} = \frac{1}{T}\sum_t(\frac{1}{6}\sum(ads + cc + crm + erp + inv + sisc))_{c,s,t} \qquad \text{eq. (1)}$$

Where c, s, and t represent country, sector, and year, respectively. The technology abbreviations and their descriptions are provided in Table A1 below. To account for differences in Eurostat survey coverage over time, and to better reflect the overall state of firms' digital adoption, the final TRI is calculated as the average for the period 2014 to 2021. This approach avoids calculating the TRI in years where, for instance, only two sub-technologies are available, compared to six in another year. Such variation would make intertemporal comparisons invalid.

TABLE A1: TRI INDICATORS AND SURVEY QUESTIONS

Variable abbreviation	Variable name	Variable description	Eurostat online data code
ads	Digital advertising	Use of pay-to-advertise process on the internet	isoc_cismt
cc	Cloud computing	Buy cloud computing services over the internet	isoc_cicce_use
crm	CRM	Use of software solutions like Customer Relationship Management (CRM)	isoc_eb_iip
erp	ERP	Use of software solutions like Enterprise Resource Planning (ERP)	isoc_eb_iip
inv	E-invoicing	Sending or receiving e-invoices for automated processes	isoc_eb_ics
sisc	Automated supply chain integration	Use of processes to automatically link with those of suppliers and/or customers	isoc_eb_ics

Table A2 presents the data coverage rate of each technology included in the TRI, by year, expressed as a percentage. Higher percentages indicate broader data availability across countries and sectors. As they are the only technologies with data available in both 2014 and 2021, the TRI time series analysis in Chapter 2 focuses solely on cloud computing (e_cc), Customer Relationship Management (e_crm), and Enterprise Resource Planning (e_erp).

TABLE A2: EUROSTAT INDICATORS DATA COVERAGE (PERCENTAGE)

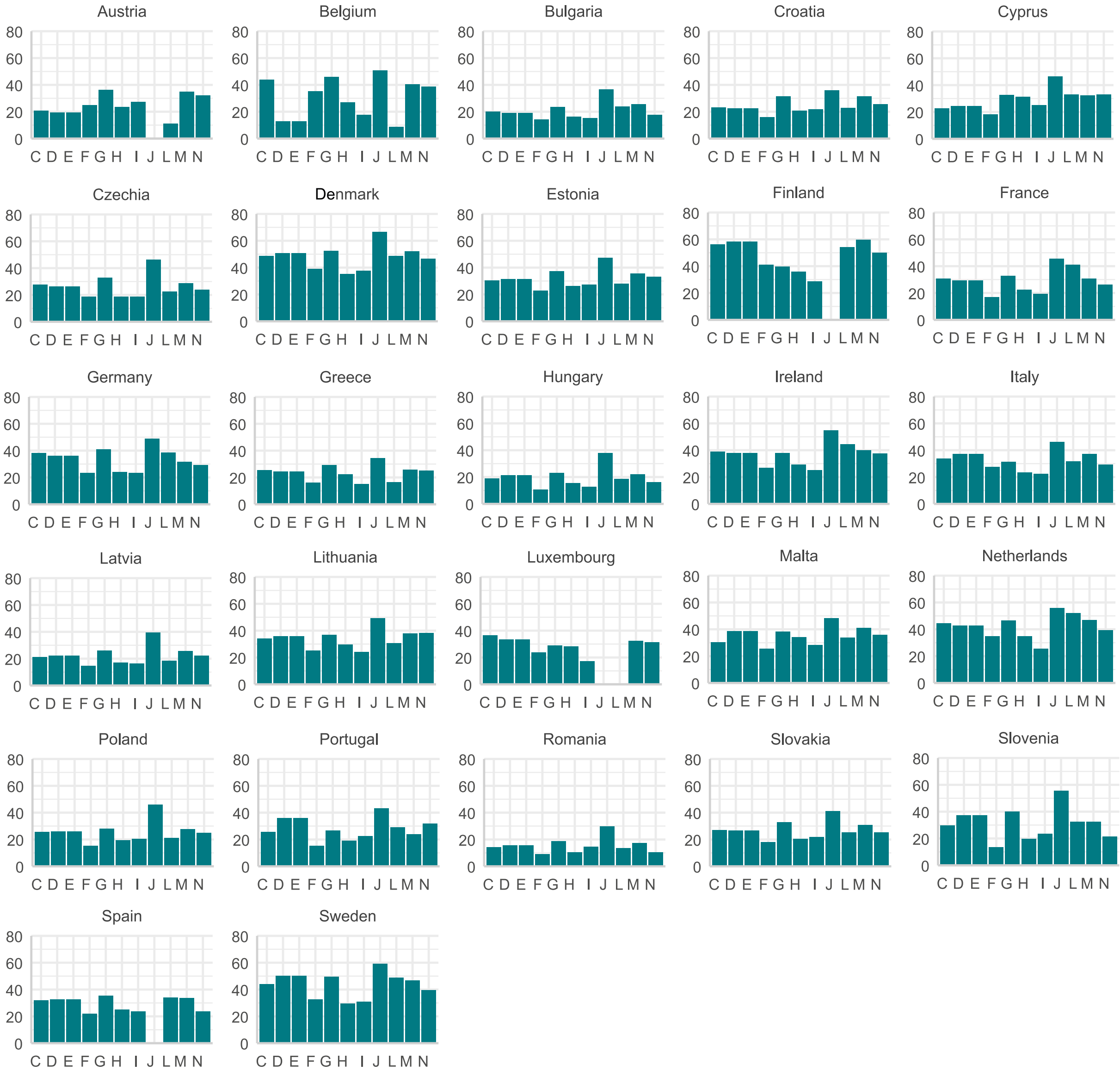
year	e_ads	e_cc	e_crm	e_erp	e_inv	e_sisc
2014	74.4	86.7	85.7	83.8	69.0	87.3
2015	56.8	54.8	88.9	84.6	58.6	91.1
2016	88.7	89.1	--	--	86.5	--
2017	--	57.1	89.4	87.5	41.5	90.9
2018	85.3	86.6	--	--	--	--
2019	--	--	87.7	85.7	--	--
2020	--	79.4	--	--	--	--
2021	--	72.9	77.1	76.2	--	--

Figure A1 presents the distribution of the overall TRI indicator by country and sector. Sectors K64 (financial service activities, except insurance and pension funding), K65 (insurance and pension funding), and K66 (activities auxiliary to financial services) are excluded due to insufficient data coverage (less than 3 percent across sectors, countries, and years).

Figure A1 illustrates that differences in average TRI performance over 2014-2021 are influenced not only by country-level dynamics, but also by sectoral structures. In most countries, sectors such as ICT and professional, scientific and technical services stand out with consistently higher TRI scores, reflecting their relatively advanced levels of digital adoption. In contrast, sectors such as accommodation and food services, and construction, generally lag behind, suggesting structural limitations to digital uptake.

Finland and the Netherlands record high TRI scores across nearly all sectors, whereas countries such as Romania and Bulgaria display more uneven performance, with many sectors scoring below 20 percent. In Romania, Hungary and Slovenia, the gap between leading and lagging sectors remains wide. By contrast, frontrunner countries tend to benefit from a more uniform diffusion of digital technologies across the business landscape.

FIGURE A1: TRI ACROSS COUNTRIES AND SECTORS, AVERAGE 2014-2021



Source: Eurostat; authors' calculations. Note: Sector codes refer to NACE Rev. 2 sections as follows: C – Manufacturing; D – Electricity, gas, steam and air conditioning supply; E – Water supply, sewerage, waste management and remediation activities; F – Construction; G – Wholesale and retail trade, repair of motor vehicles and motorcycles; H – Transportation and storage; I – Accommodation and food service activities; J – Information and communication; L – Real estate activities; M – Professional, scientific and technical activities; and N – Administrative and support service activities.

Figure A2 shows the distribution of digital technologies that contribute to the overall TRI score across countries during the 2014-2021 period. While the overall index offers a composite picture, this breakdown illustrates where specific technologies are more or less widely adopted.

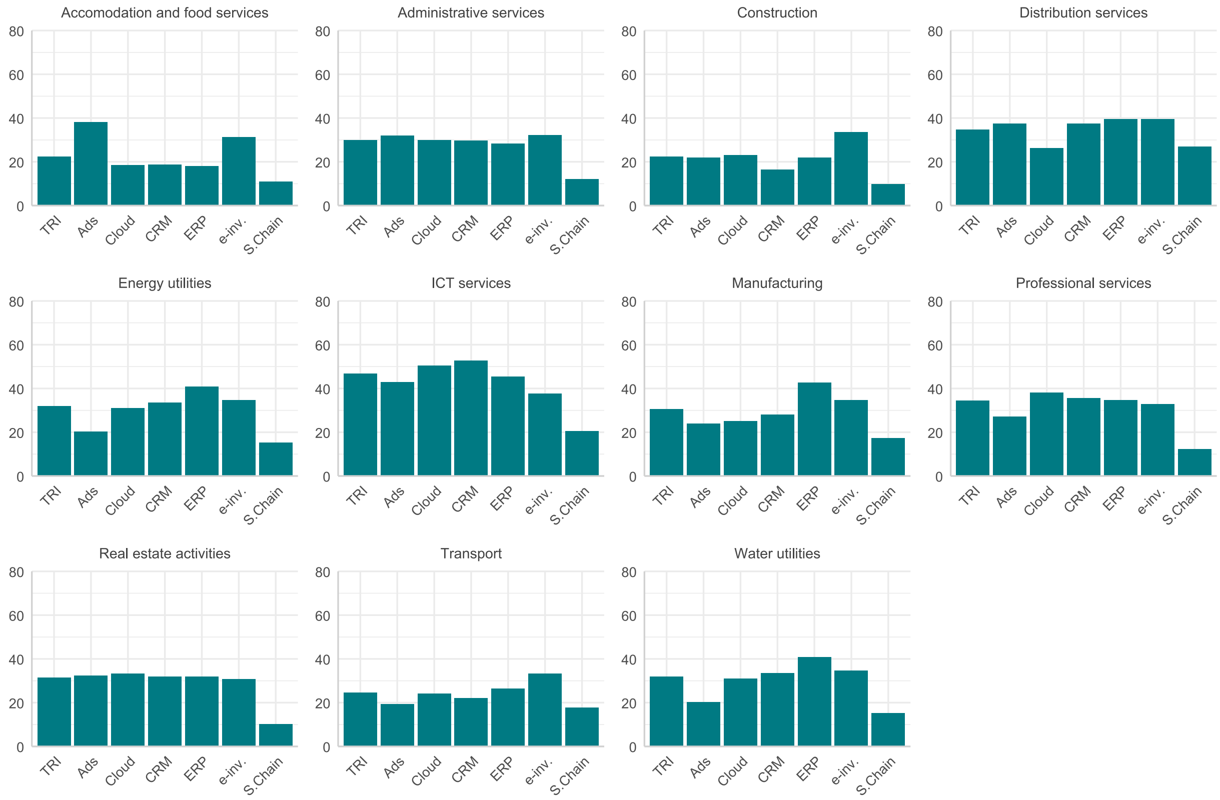
Cloud computing technologies and ERP systems are key drivers of higher TRI scores in several countries – notably Finland and the Netherlands – where adoption rates exceed 40 percent. E-invoicing software shows high adoption rates in both frontier and laggard countries. By contrast, adoption of CRM systems and supply chain technologies remains limited across most countries, with Romania, Greece and Bulgaria showing particularly low uptake in all categories. The use of online digital advertising (Ads) is more evenly distributed, with moderate adoption levels across most countries, and particularly widespread use in countries such as Ireland and Sweden. Supply chain technology adoption remains low across nearly all countries – perhaps reflecting the complexity of the technology or its limited applicability across sectors.

FIGURE A2: DIGITAL TECHNOLOGY DISTRIBUTION ACROSS COUNTRIES, AVERAGE 2014-2021

Source: Eurostat; authors' calculations.

Figure A3 shows average TRI scores by sector, disaggregated by digital technology for the period 2014-2021. ICT services, which record the highest TRI score, show particularly high adoption rates of cloud and CRM systems, with over 50 percent of firms in the sector using these technologies on average. Distribution and professional services also demonstrate strong digital uptake, particularly in CRM and ERP tools. By contrast, sectors such as construction and transport lag behind, with average adoption of several technologies remaining below 30 percent. Their low TRI scores are partly explained by limited adoption of software for automated supply chain integration.

FIGURE A3: DIGITAL TECHNOLOGY DISTRIBUTION ACROSS SECTORS, AVERAGE 2014-2021



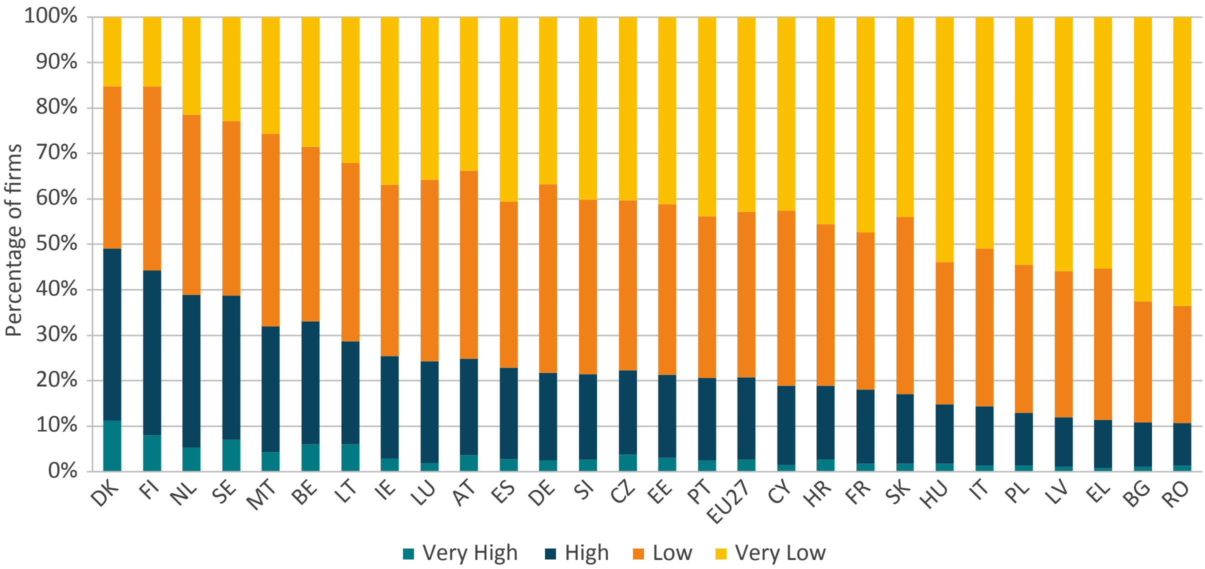
Source: Eurostat; authors' calculations.

ANNEX B: COMPARISON BETWEEN THE TRI AND OTHER INDICATORS

TRI and Eurostat's Digital Intensity Index (DII)

It is important to assess how accurately the TRI used in this study reflects the degree of technology adoption among EU firms. To this end, this section compares the TRI with the Digital Intensity Index (DII), developed by Eurostat and summarised in Figure B1. The DII measures digital uptake by counting the number of distinct technologies adopted by firms and classifies them into four categories of digital intensity: very low, low, high, and very high. The results, covering the period from 2015 to 2020, show that country rankings in the DII closely align with those in the TRI. Nordic countries such as Denmark, Finland, and Sweden, for example, consistently rank among the top performers.

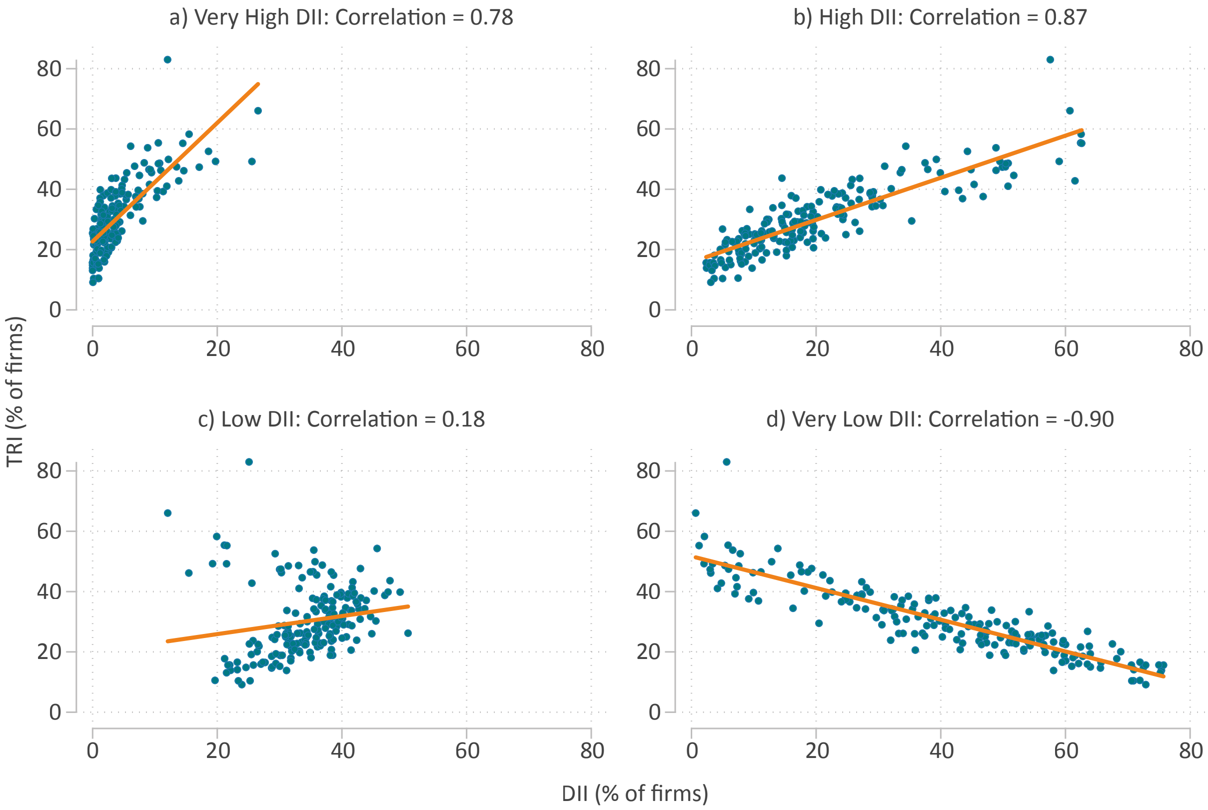
FIGURE B1: DIGITAL INTENSITY INDEX (DII) ACROSS COUNTRIES, 2015-2020



Source: Eurostat; authors' calculations. Note: For a similar data coverage as the TRI indicator, this figure uses Version 1 of the DII.

Figure B2 shows the correlation between the TRI and the four levels of digital intensity defined by Eurostat's DII, measured at the country-sector level. This comparison helps to assess the relevance of the TRI relative to established indicators such as the DII. A strong and positive relationship between two variables is indicated by a correlation coefficient close to one. The results show that the TRI is strongly correlated with the 'high' and 'very high' digital intensity categories, as shown in panels (a) and (b).

FIGURE B2: CORRELATION BETWEEN THE TRI INDICATOR AND THE LEVELS OF DII



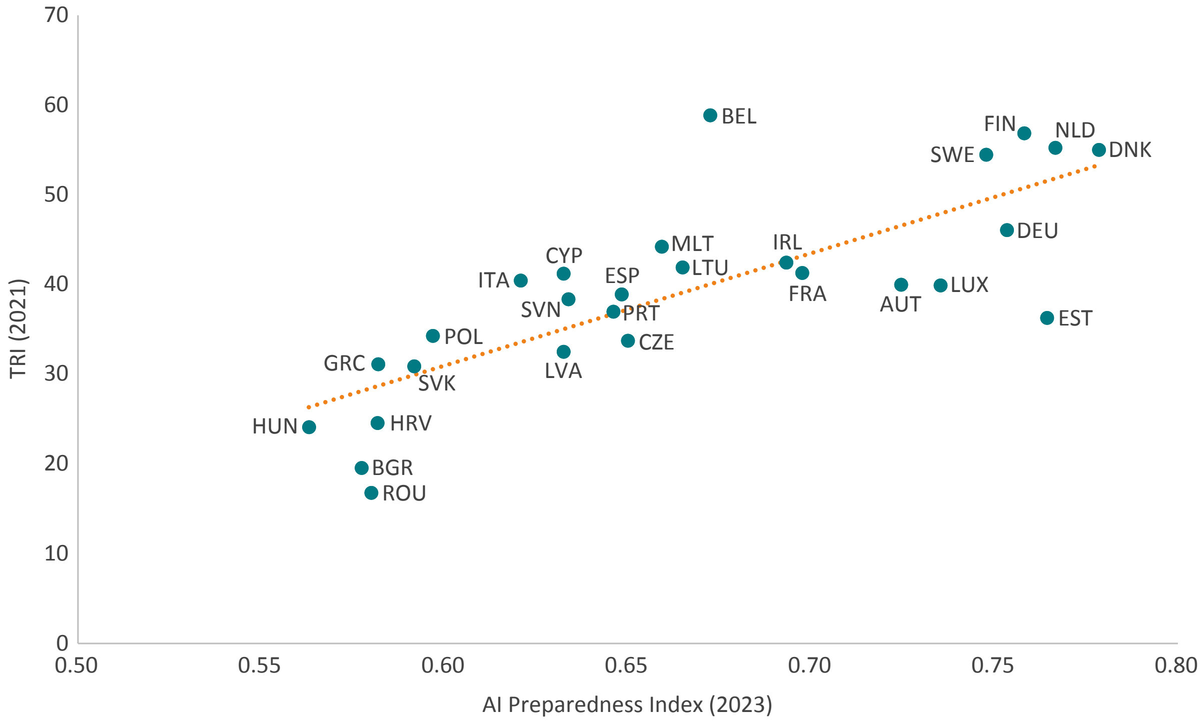
Source: Eurostat; authors' calculations.

TRI and the IMF AI Preparedness Index (AIPI)

In addition to the DII from Eurostat, the TRI is also strongly correlated with the IMF's AI Preparedness Index (AIPI). This index assesses how prepared countries are to adopt and benefit from artificial intelligence, particularly generative AI. It covers 174 economies and evaluates four equally weighted dimensions: digital infrastructure, human capital and labour policies, innovation and economic integration, and regulatory frameworks. As shown in Figure B3, the TRI and the AIPI display a strong correlation, with a coefficient of 0.78. Countries with a high TRI tend to also perform well on the AI preparedness scale. This suggests a strong relationship between firm-level use of business-related technologies – such as CRM and ERP, as captured by the TRI – and a country's readiness to develop and deploy advanced technologies like AI.[45]

[45] IMF's AI Preparedness Index (AIPI) can be accessed at: https://www.imf.org/external/datamapper/datasets/AIPI

FIGURE B3: CORRELATION BETWEEN THE TRI (2021) AND THE IMF AI PREPAREDNESS INDEX (AIPI) (2023)



Source: Eurostat; IMF AIPI; authors' calculations. Note: The figure uses the latest available data for each index: 2021 for the TRI and 2023 for the AIPI.

ANNEX C: DISTANCE TO TECHNOLOGY FRONTIER AT SECTOR LEVEL

In Chapter 2, the analysis examined how countries positioned themselves relative to the technology frontier, and found that between 2014 and 2021 laggard countries did not catch up with frontier countries in a subset of technologies – namely cloud computing, ERP, and CRM systems. This section shifts the focus from a country-based definition of the technology frontier to an EU-wide, sector-level perspective. In other words, it assesses whether sectors are converging towards the technological frontier within their broader sectoral category.

Figure C1 shows the gap between laggard and top-performing sectors. Unlike the analysis in Chapter 2, the frontier here is defined as the sectors in the top 5 percent of the distribution (95th percentile), while laggards are those in the bottom 40 percent within each sector group. The distance to the frontier is measured as the difference between the two groups. If the curve slopes upward, this indicates technology divergence over time within that sector. If the curve trends downward, the gap between frontier and laggard sectors across Europe is narrowing. It is important to note that short-term fluctuations in the curve are mostly due to data availability issues, rather than rapid catch-up or divergence. The key insight lies in observing the overall trend.

The picture is mixed. In sectors such as manufacturing, ICT services, and distribution, the distance to the frontier remains relatively stable or increases only modestly over time. This suggests that the diffusion of digital technologies is limited, and convergence towards the frontier is slow. In contrast, sectors such as energy utilities, real estate, and professional services show a clear upward trend, indicating a widening gap between frontier and laggard sectors. This signals increasing technological divergence, which implies that some firms are gradually falling further behind in digital adoption.

The distance to the digital frontier varies markedly across sectors. Food and accommodation services, along with transportation services, consistently show smaller gaps, reflecting more uniform adoption of cloud computing, ERP, and CRM systems across sectors. Conversely, ICT services, manufacturing, and distribution services maintain larger gaps, with distances consistently exceeding 40 percentage points. This indicates that laggard sectors in these industries remain significantly further from the frontier.

This pattern is consistent with findings from academic research. For example, while global frontier firms continue to record strong productivity gains, laggard firms are falling further behind, mainly due to limited diffusion of innovation.[46] Likewise, structural and institutional barriers have been shown to hinder lagging firms and sectors from effectively adopting and integrating new technologies.[47]

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[46] Andrews, D., C. Criscuolo and P. Gal (2016), "The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy", OECD Productivity Working Papers, No. 5, OECD Publishing, Paris, https://doi.org/10.1787/63629cc9-en.

[47] Andrews, D., G. Nicoletti and C. Timiliotis (2018), "Digital technology diffusion: A matter of capabilities, incentives or both?", OECD Economics Department Working Papers, No. 1476, OECD Publishing, Paris, https://doi.org/10.1787/7c542c16-en.

FIGURE C1: TRI DISTANCE TO TECHNOLOGY FRONTIER (CLOUD COMPUTING, ERP, AND CRM)

Source: Eurostat; authors' calculations.

ANNEX D: ECONOMETRIC METHODOLOGY: REGRESSIONS AS CORRELATIONS

To assess the impact of digital and non-digital services trade regulations on sector performance, the analysis uses two models based on a "regressions-as-correlations" approach. The panel regression covers the same time period as the TRI indicator – 2014 to 2021 – across both sectors and countries.

$$Competitiveness_{cst} = restriction_{ct} \times DI_{cs} + TRI_{cst} + \delta_{ct} + \theta_{st} + \gamma_{cs} + \varepsilon_{cst} \quad \text{eq. (2)}$$

$$Competitiveness_{cst} = restriction_{ct} \times TRI_{cst} + TRI_{cst} + \delta_{ct} + \theta_{st} + \gamma_{cs} + \varepsilon_{cst} \quad \text{eq. (3)}$$

Where c, s, and t stand for country, sector, and year.

Sector competitiveness is measured using three indicators: turnover, value added, and apparent labour productivity (calculated as value added at factor costs divided by the number of persons employed). TRI refers to the Technology Readiness Index introduced in Chapter 2. Each model includes a combination of fixed effects, namely country-year (δ_{ct}), sector-year (θ_{st}), and country-sector (γ_{cs}). These fixed effects control for differences across countries, years, and sectors that are not directly observed, helping to ensure that the results reflect the impact of the variables of interest rather than unmeasured factors.[48]

The key variables of interest are the OECD Services Trade Restrictiveness Index (STRI) and the Digital Services Trade Restrictiveness Index (DSTRI), each analysed in separate regression models. Both indices measure the extent to which countries impose restrictions on services trade. The STRI is a composite indicator that captures the restrictiveness of trade policies across 22 service sectors, including financial services, telecommunications, transport, and professional services. It accounts for a wide range of policy and regulatory barriers, such as restrictions on market access, discriminatory measures, and constraints on establishment or cross-border movement of service providers.

In contrast, the DSTRI focuses specifically on digital services, capturing barriers affecting areas such as e-commerce, cloud computing, and cross-border data flows. It identifies regulations that restrict digital market access, including data localisation requirements that mandate storing data within national borders. Both indices range from 0 (no trade restrictions) to 1 (most restrictive).

[48] For instance suppose 2020 was a year in which the retail sector grew rapidly across the EU. If there are no fixed effects, we might wrongly conclude that digital technology causes the retail sector to grow, while in fact it is the result of a global retail boom. But by include sector-year fixed effects, the retail boom across countries is "held constant" by the model.

Lastly, digital intensity (DI) refers to the extent to which sectors use digital services as inputs in their production processes. In the econometric model (see Equation 2), it is interacted with the trade restriction variable. The DI coefficient, derived from OECD Input-Output tables, captures the share of total output accounted for by digital services embedded in a sector's inputs. For example, in 2018, France's chemical manufacturing sector had a coefficient of 0.02 – indicating that 2 percent of each unit of output consisted of digital services inputs. In essence, this coefficient enables an assessment of how different sectors are integrated into the digital economy. This variable is included because the STRI and DSTRI indices apply only to services sectors. However, goods-producing sectors also rely on digital inputs. The DI coefficient therefore enables the model to capture the effect of restrictions on these sectors as well.

Results

The estimation results from Equations (2) and (3) are presented in Tables D1 and D2, respectively. In Table D1, the results show that the interaction between services trade restrictions and the digital intensity coefficient is negatively – and statistically significantly – associated with value added and labour productivity (columns 2 and 3). More specifically, across sectors and years, a one standard deviation increase in the interaction between the STRI and DI is associated, on average, with a 22.59 percent reduction in value added and a 16.87 percent decline in labour productivity – holding TRI levels constant. These are economically significant effects. However, it is important to emphasise that the estimates reflect robust correlations rather than causal relationships. As expected, column 3 shows that TRI is positively and significantly associated with labour productivity: a one-unit increase in TRI corresponds to a 0.1 percent increase in labour productivity, after accounting for the interaction between STRI and DI.

By contrast, the interaction between digital services trade restrictions and input digital intensity is not statistically significant, as shown in columns 4 to 6. This suggests that, for sectoral competitiveness, lifting broader services trade restrictions is more important than addressing digital-specific regulatory barriers.

TABLE D1: REGRESSION RESULTS OF SERVICES RESTRICTIONS AND DIGITAL INTENSITY COEFFICIENT (EQUATION 2)

		(1)	(2)	(3)	(4)	(5)	(6)
		Turnover (log)	Value added (log)	Labour productivity (log)	Turnover (log)	Value added (log)	Labour productivity (log)
STRI x DI		-6.104	-14.044***	-10.281***			
		(0.107)	(0.001)	(0.001)			
DSTRI x DI					-0.962	-0.139	-0.402
					(0.359)	(0.914)	(0.676)
TRI		0.000	0.000	0.001**	0.000	0.000	0.001**
		(0.502)	(0.136)	(0.019)	(0.454)	(0.170)	(0.021)
FE C-Y	Yes						
FE S-Y	Yes						
FE C-S	Yes						
Observations		8829	8812	7948	8363	8348	7543
R2		0.996	0.993	0.977	0.996	0.993	0.976

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

Table D2 presents the results of Equation (3), discussed in Chapter 4, examining how the interaction between different restriction measures and the TRI relates to sector competitiveness. As in Table D1, it is the broader services trade restrictions (STRI) – rather than digital-specific measures (DSTRI) – that are associated with sector competitiveness when interacted with the TRI. For example, columns 1 and 2 show that, on average across sectors and years, a one-unit increase in STRI is associated with a 2.37 percent decline in sector turnover and a 2.27 percent decline in value added, holding TRI constant. In contrast, columns 4 to 6 reveal no statistically significant results when digital-specific restrictions (DSTRI) are interacted with technology adoption. The TRI variable itself also lacks statistical significance in these models.[49]

[49] Results presented in Figure 14 involve the following adaptation from the regression tables shown in the appendix. A 10 percent change in the interaction between STRI and TRI is more realistic than a one-unit change (as presented in the appendix, and is standard practice in econometrics). The effect of a 10 percent increase of STRI X TRI on value added, as in figure 14, is therefore , where 0.57 is 10 percent of the mean.

TABLE D2: REGRESSION RESULTS OF SERVICES RESTRICTIONS AND TRI (EQUATION 3)

		(1)	(2)	(3)	(4)	(5)	(6)
		Turnover (log)	Value added (log)	Labour productivity (log)	Turnover (log)	Value added (log)	Labour productivity (log)
STRI x TRI		-0.024**	-0.023*	-0.012			
		(0.024)	(0.076)	(0.176)			
DSTRI x TRI					-0.003	-0.003	-0.001
					(0.694)	(0.728)	(0.935)
TRI		0.005**	0.005*	0.003*	0.001	0.001	0.001
		(0.027)	(0.061)	(0.079)	(0.538)	(0.407)	(0.295)
FE C-Y	Yes						
FE S-Y	Yes						
FE C-S	Yes						
Observations		8829	8812	7948	8363	8348	7543
R2		0.996	0.993	0.977	0.996	0.993	0.976

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

Tables D3 to D10 present regression results examining how individual digital technologies – including digital advertising, cloud computing, CRM, ERP, e-invoicing, and supply chain automation – interact with services trade restrictions (STRI), digital-specific restrictions (DSTRI), and sectoral digital intensity (DI) to influence turnover, value added, and labour productivity. Across these models, digital advertising consistently shows no statistically significant association with sector-level performance indicators. In contrast, cloud computing and CRM adoption display more robust and statistically significant associations, particularly when interacted with STRI. Specifically, CRM (Tables D3 and D5) is linked to higher value added and labour productivity. The significance of cloud computing on competitiveness has also been supported by other evidence. As shown by Grous (2019),[50] Jin and McElheran (2017),[51] and Berggren and Karpaty (2024),[52] cloud services in particular have been found to enhance firms' productivity, innovation capacity, and export performance.

[50] Grous, A. (2019). The Transformative Effect of Cloud on Firm Productivity and Performance: Defining the benefits and impact of cloud as a 21st Century digital enabler.

[51] Jin, W., & McElheran, K. (2017). Economies before scale: learning, survival and performance of young plants in the age of cloud computing. Rotman School of Management Working Paper, (3112901).

[52] Berggren, H., & Karpaty, P. (2024). Cloud Services and Export Performance – Evidence and implications for EU policy. National Board of Trade Sweden. Retrieved from https://www.kommerskollegium.se/analyser-och-seminarier/publikationer/rapporter/2024/cloud-services-and-export-performance/

The results also suggest that the impact of services trade restrictions on performance is more pronounced for general (STRI) measures than for digital-specific (DSTRI) barriers. For instance, the STRI × DI interaction is negative and statistically significant in table D3 for the CRM technology. This suggests that sectors more dependent on this technology are disproportionately affected by restrictive services trade policies. By contrast, interactions involving DSTRI largely fail to reach statistical significance – even when combined with technologies such as ERP, e-invoicing, and CRM (Tables D5, D6, D9, and D10). Overall, the findings point to heterogeneous effects across digital tools.

TABLE D3: REGRESSION RESULTS OF DIGITAL ADVERTISING, CLOUD COMPUTING, AND CRM, STRI, AND DIGITAL INTENSITY

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Turnover (log)	Value added (log)	Labour productivity (log)	Turnover (log)	Value added (log)	Labour productivity (log)	Turnover (log)	Value added (log)	Labour productivity (log)
STRI x DI	3.732	1.008	1.754	-6.998	-17.032***	-11.281***	-7.330	-15.446***	-11.945**
	(0.647)	(0.891)	(0.638)	(0.102)	(0.000)	(0.003)	(0.137)	(0.000)	(0.012)
e_ads	0.104	0.092	-0.023						
	(0.159)	(0.372)	(0.834)						
e_cc				0.069	0.052	-0.002			
				(0.203)	(0.436)	(0.973)			
e_crm							-0.026	0.184***	0.257***
							(0.585)	(0.008)	(0.000)
FE C-Y Yes									
FE S-Y Yes									
FE C-S Yes									
Obs	3874	3867	3173	6512	6495	5679	5344	5338	4524
R2	0.998	0.997	0.988	0.997	0.994	0.978	0.995	0.993	0.975

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

TABLE D4: REGRESSION RESULTS OF ERP, E-INVOICING, AND AUTOMATIC SUPPLIERS AND CUSTOMERS LINKING, STRI, AND DIGITAL INTENSITY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
STRI x DI		-6.442	-14.351***	-10.143**	23.269**	20.667**	-1.766	4.491	12.018	11.401*
		(0.186)	(0.001)	(0.020)	(0.034)	(0.039)	(0.843)	(0.550)	(0.161)	(0.092)
e_erp		-0.024	-0.058	0.028						
		(0.645)	(0.270)	(0.563)						
e_inv					-0.003	0.036	0.041			
					(0.968)	(0.739)	(0.650)			
e_sisc								-0.107	-0.019	0.086
								(0.158)	(0.785)	(0.395)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		5208	5202	4386	2932	2926	2217	3360	3355	2511
R2		0.996	0.993	0.977	0.999	0.997	0.989	0.998	0.997	0.988

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

TABLE D5: REGRESSION RESULTS OF DIGITAL ADVERTISING, CLOUD COMPUTING, AND CRM, DSTRI, AND DIGITAL INTENSITY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
DSTRI x DI		-0.610	0.561	0.487	-0.804	0.077	-0.096	-0.950	0.086	0.297
		(0.487)	(0.584)	(0.584)	(0.404)	(0.953)	(0.934)	(0.531)	(0.959)	(0.809)
e_ads		0.096	0.080	-0.040						
		(0.199)	(0.445)	(0.723)						
e_cc					0.065	0.033	-0.017			
					(0.230)	(0.637)	(0.827)			
e_crm								-0.032	0.188**	0.262***
								(0.506)	(0.011)	(0.000)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		3694	3688	3053	6231	6216	5459	5051	5046	4291
R2		0.998	0.997	0.988	0.997	0.994	0.977	0.995	0.993	0.974

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

TABLE D6: REGRESSION RESULTS OF ERP, E-INVOICING, AND AUTOMATIC SUPPLIERS AND CUSTOMERS LINKING, STRI, AND DIGITAL INTENSITY

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
DSTRI x DI		-0.971	0.279	0.473	-0.534*	0.240	0.573*	0.298	1.083	0.583
		(0.520)	(0.874)	(0.718)	(0.090)	(0.439)	(0.054)	(0.698)	(0.263)	(0.459)
e_erp		-0.016	-0.063	0.018						
		(0.765)	(0.230)	(0.713)						
e_inv					0.013	0.058	0.045			
					(0.870)	(0.596)	(0.640)			
e_sisc								-0.102	-0.019	0.081
								(0.167)	(0.777)	(0.449)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		4915	4910	4153	2692	2687	2037	3180	3176	2391
R2		0.996	0.993	0.976	0.999	0.997	0.988	0.998	0.997	0.988

p-values in parentheses

* p<0.10 ** p<0.05 *** p<0.01

TABLE D7: REGRESSION RESULTS OF DIGITAL ADVERTISING, CLOUD COMPUTING, AND CRM, AND STRI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
STRI x e_ads	0.237	0.401	1.727						
	(0.883)	(0.884)	(0.612)						
e_ads	0.063	0.022	-0.331						
	(0.840)	(0.968)	(0.546)						
STRI x e_cc				-2.744**	-2.355	0.049			
				(0.041)	(0.241)	(0.978)			
e_cc				0.559**	0.461	-0.025			
				(0.036)	(0.233)	(0.939)			
STRI x e_crm							-1.433	1.016	-0.125
							(0.485)	(0.616)	(0.944)
e_crm							0.222	-0.000	0.275
							(0.564)	(1.000)	(0.335)
FE C-Y	Yes								
FE S-Y	Yes								
FE C-S	Yes								
Obs	3874	3867	3173	6512	6495	5679	5344	5338	4524
R2	0.998	0.997	0.988	0.997	0.994	0.978	0.995	0.993	0.975

p-values in parentheses

="* p<0.10 ** p<0.05 *** p<0.01"

TABLE D8: REGRESSION RESULTS OF ERP, E-INVOICING, AND AUTOMATIC SUPPLIERS AND CUSTOMERS LINKING AND STRI

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
STRI x e_erp		-1.646	0.168	0.868						
		(0.280)	(0.894)	(0.354)						
e_erp		0.269	-0.088	-0.127						
		(0.343)	(0.711)	(0.480)						
STRI x e_inv					-0.715	1.245	-0.361			
					(0.586)	(0.676)	(0.844)			
e_inv					0.129	-0.180	0.101			
					(0.631)	(0.767)	(0.794)			
STRI x e_sisc								0.506	1.359	-2.427
								(0.839)	(0.629)	(0.475)
e_sisc								-0.195	-0.255	0.469
								(0.648)	(0.578)	(0.413)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		5208	5202	4386	2932	2926	2217	3360	3355	2511
R2		0.996	0.993	0.977	0.998	0.997	0.989	0.998	0.997	0.988

p-values in parentheses

="* p<0.10 ** p<0.05 *** p<0.01"

TABLE D9: REGRESSION RESULTS OF DIGITAL ADVERTISING, CLOUD COMPUTING, AND CRM, AND DSTRI

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
DSTRI x e_ads		-0.524	1.069	0.758						
		(0.300)	(0.283)	(0.341)						
e_ads		0.133	0.001	-0.097						
		(0.128)	(0.990)	(0.241)						
DSTRI x e_cc					-0.100	0.139	0.330			
					(0.914)	(0.889)	(0.594)			
e_cc					0.065	0.020	-0.049			
					(0.562)	(0.857)	(0.541)			
DSTRI x e_crm								-0.160	0.336	0.148
								(0.870)	(0.761)	(0.880)
e_crm								-0.021	0.162*	0.250***
								(0.812)	(0.088)	(0.003)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		3694	3688	3053	6231	6216	5459	5051	5046	4291
R2		0.998	0.997	0.988	0.997	0.994	0.977	0.995	0.993	0.974

p-values in parentheses

="* p<0.10 ** p<0.05 *** p<0.01"

TABLE D10: REGRESSION RESULTS OF ERP, E-INVOICING, AND AUTOMATIC SUPPLIERS AND CUSTOMERS LINKING AND DSTRI

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)	Turnover (log)	Value added (log)	Labour produc-tivity (log)
DSTRI x e_erp		0.222	-0.323	-0.506						
		(0.787)	(0.637)	(0.405)						
e_erp		-0.038	-0.033	0.065						
		(0.676)	(0.656)	(0.331)						
DSTRI x e_inv					0.568	1.992	1.356			
					(0.494)	(0.176)	(0.106)			
e_inv					-0.020	-0.058	-0.042			
					(0.842)	(0.609)	(0.636)			
DSTRI x e_sisc								0.032	-0.146	-1.156
								(0.977)	(0.907)	(0.195)
e_sisc								-0.103	-0.008	0.150
								(0.284)	(0.942)	(0.240)
FE C-Y	Yes									
FE S-Y	Yes									
FE C-S	Yes									
Obs		4915	4910	4153	2692	2687	2037	3180	3176	2391
R2		0.996	0.993	0.976	0.999	0.997	0.988	0.998	0.997	0.988

p-values in parentheses

="* p<0.10 ** p<0.05 *** p<0.01"