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Introducing Justice Systems Performance Index (JUSPER):

An evidence-based method to rank the judicial performance of the EU27 Member States

Abstract

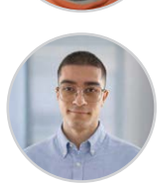
How well do Europe's courts actually work? This paper introduces the Justice Systems Performance Index (JUSPER), a new tool that ranks the justice systems of all 27 EU Member States on a single scale from 0 to 100. Instead of relying on opinion surveys or expert judgements, JUSPER uses only official data from the European Commission's 2026 EU Justice Scoreboard. It looks at three things: how quickly and efficiently courts resolve cases, how well governments fund them, and how easy it is for citizens and businesses to access them, including through digital services. For 2024, Latvia comes first with 74 points, followed by Bulgaria and Estonia, while Cyprus, Greece and Portugal come last. Countries that do reasonably well across the board finish ahead of those that shine in just one area, and some long-established democracies, such as France, Belgium, Finland and Ireland, rank surprisingly low. The ranking also tells us something about the economy, since countries with faster, more efficient courts tend to attract more foreign investment and have more competitive tax systems. Overall, the findings show that Europe's courts do not lack judges or money. The real problems are slow handling of complex business disputes, growing piles of unresolved cases and digital tools that have not yet reached every Member State. These are problems that policy can fix.



Constantinos Saravakos
Head of Research, Center for Liberal Studies (KEFIM)



Christos Loukas
Economist, Research Associate Center for Liberal Studies (KEFIM)



Ioannis Navrozidis
Economist, Research Associate Center for Liberal Studies (KEFIM)

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Executive Summary

This publication presents the Justice Systems Performance Index (JUSPER), a composite indicator of judicial performance for the 27 Member States of the European Union. JUSPER seeks to answer how good the judicial systems of the EU27 are, by empirically examining how quickly courts resolve cases, how adequately Member States resource them, and how readily citizens and businesses can access them. JUSPER aggregates 31 indicators, grouped into 9 sub-components and three pillars (Efficiency, Resources, Institutional), built exclusively on hard data drawn from the European Commission's 2026 EU Justice Scoreboard. By condensing judicial performance into a single comparable and comprehensive indicator, JUSPER gives policymakers, civil society and the public an evidence base for restoring trust in the courts and for the reforms that underpin both the rule of law and economic prosperity.

For 2024, Latvia leads the ranking with 74.0 points out of 100, followed by Bulgaria (68.3) and Estonia (66.3), while Cyprus (24.2), Greece (34.8) and Portugal (39.6) close the table. The clearest pattern is that consistency pays, as Member States that perform solidly across all three pillars finish ahead of those that are strong in only one. The gap between top and bottom is also striking: Latvia scores roughly three times as high as Cyprus, which means that how quickly and reliably people and businesses get their cases resolved still depends heavily on which Member State they live in. Perhaps most surprising, several long-established and institutionally developed liberal democracies, such as France, Belgium, Finland, and Ireland, rank below the EU27 median, a reminder that neither wealth nor a long democratic tradition by itself guarantees courts that deliver on time.

Rank	ISO	Country	Efficiency	Resources	Institutional	JUSPER	95 % CI
1	LV	Latvia	71.7	68.7	79.9	**74.0**	[73.1, 75.0]
2	BG	Bulgaria	75.7	89.3	47.0	**68.3**	[65.0, 71.7]
3	EE	Estonia	81.6	49.3	62.3	**66.3**	[63.8, 68.8]
4	NL	Netherlands	73.5	46.6	64.6	**63.5**	[61.4, 65.5]
5	LT	Lithuania	71.4	42.2	68.2	**62.9**	[60.4, 65.0]
6	SE	Sweden	80.8	41.0	52.0	**60.1**	[56.8, 63.4]
7	DK	Denmark	76.0	44.2	54.6	**60.1**	[57.5, 62.6]
8	HU	Hungary	80.2	33.5	53.8	**58.6**	[54.9, 62.2]
9	AT	Austria	74.6	46.0	49.4	**58.0**	[55.5, 60.5]
10	SI	Slovenia	62.9	57.4	49.2	**56.4**	[55.2, 57.5]
11	MT	Malta	40.4	89.2	48.3	**55.6**	[52.0, 59.6]
12	SK	Slovakia	54.9	52.4	56.0	**54.7**	[54.4, 55.0]
13	PL	Poland	62.7	74.6	32.9	**54.5**	[51.1, 57.8]
14	HR	Croatia	53.1	61.9	48.2	**53.5**	[52.5, 54.6]
15	DE	Germany	59.3	53.9	46.7	**53.2**	[52.1, 54.3]
16	IT	Italy	41.1	51.0	66.1	**52.9**	[50.9, 55.1]
17	RO	Romania	56.0	53.4	48.6	**52.6**	[51.9, 53.2]
18	CZ	Czech Republic	68.2	45.1	38.7	**51.4**	[48.9, 53.9]
19	ES	Spain	32.9	52.5	63.5	**49.2**	[46.7, 51.8]
20	LU	Luxembourg	45.7	52.2	40.7	**45.4**	[44.6, 46.3]
21	BE	Belgium	58.9	35.5	34.6	**43.9**	[41.7, 46.1]
22	FR	France	48.0	37.8	41.4	**43.0**	[42.2, 43.8]
23	IE	Ireland	31.7	40.1	51.3	**41.1**	[39.5, 42.8]
24	FI	Finland	47.4	32.4	38.0	**40.1**	[38.9, 41.3]
25	PT	Portugal	35.9	41.0	42.5	**39.6**	[39.1, 40.2]
26	EL	Greece	26.1	41.7	39.0	**34.8**	[33.5, 36.2]
27	CY	Cyprus	12.1	30.7	32.0	**24.2**	[22.4, 26.0]

JUSPER 2024 ranking with pillar scores

Our analysis shows that, overall, in 2024, the EU27 has enough judges and enough money, but the pace at which cases are processed is uneven across case categories, litigious commercial backlogs are accumulating faster than they clear, and the digital infrastructure of modern justice has not yet been built out across the Mediterranean and parts of the Eastern periphery. High judicial spending in sev-

eral Member States may reflect a legacy bureaucratic process rather than productive capacity.

JUSPER's significance is not only internal, as a benchmark of performance between the EU countries, but our results show that it also appears to be positively correlated with foreign direct investment (FDI) inflows (+0.41), consistent with the Bosio (2025) hypothesis that effective courts lower transaction costs and enable investment. The paper's most surprising finding is that JUSPER is positively correlated with the Tax Foundation's International Tax Competitiveness Index (ρ = +0.60) – an unexpected link between the performance of a country's courts and the competitiveness of its tax regime. This association is driven primarily by the Efficiency pillar – the speed and throughput of the courts rather than the level of judicial spending – and should be read as associative rather than causal: because JUSPER and the Tax Competitiveness Index are built from entirely separate data, the relationship most plausibly reflects a shared foundation of institutional quality rather than a direct causal channel.

1. Introduction

European citizens have grown markedly less trustful of liberal and democratic institutions, and the judicial system has not been spared. The Eurobarometer surveys regularly find that fewer than half of respondents in several Member States rate the independence of their national courts as 'good', and surveys of small and medium-sized enterprises consistently identify the cost and length of judicial proceedings as a major obstacle to investment. Ongoing rule-of-law disputes between the European Commission and Member States such as Poland, Hungary and Romania have made the comparative assessment of national judicial systems a politically salient task in its own right (Jakab and Kirchmair, 2021).

Beyond the rule-of-law debate, court efficiency has direct economic consequences. As Bosio (2025) shows in a recent World Bank analysis, a country moving from the 75th to the 50th percentile in global court efficiency raises its annual GDP per capita growth by 0.28 percentage points, holding income, human capital and culture constant. This mechanism, as described by North (1990), Williamson (1985) and most recently by Aghion, Algan, Cahuc and Shleifer (2010), is hypothesised to run through transaction costs: well-functioning courts ease the establishment of new commercial relations, lower barriers to entry, enable third-party enforcement of contracts and increase the availability of trade credit. Becker and Ivashina (2021) document that the speed with which courts resolve cases involving financially distressed firms is associated with the speed with which economies recover from financial crises. Acemoglu, Johnson and Robinson (2005) describe the more general institutional channel: variation in growth rates and per capita income across countries is partly explained by differences in the efficiency of judicial and contractual institutions.

The European Commission's EU Justice Scoreboard, in its fourteenth edition in 2026, provides a rich set of comparative indicators across efficiency, quality and independence dimensions. It does not, however, aggregate them into a single comprehensive measure that would help summarise the performance of the Member States. As Jakab and Kirchmair (2021) argued, this leaves the Scoreboard a 'half-hearted effort, and thus, merely a pretended action in the rule-of-law crisis'. A single-number summary, properly defended, would let policymakers, civil society and the public engage with judicial performance the way they already engage with macroeconomic performance through GDP, with educational performance through PISA, or with corruption through the Transparency International Corruption Perceptions Index.

Such an index matters precisely because the loss of trust documented above cannot be reversed by diagnosis-free debate. A composite measure makes legal-system shortcomings legible, comparable across countries and trackable over time, converting an otherwise diffuse sense of institutional decline into something policymakers, civil society and the public can scrutinise and act upon. It also sharpens accountability: a Member State that slips in the ranking, or that

lags its peers on a particular pillar, can no longer attribute the gap to the inherent incomparability of national systems. And it reconnects the two threads above: a more effective and transparent justice system empowers individuals, constrains state overreach and reinforces the institutional legitimacy on which civic trust depends, while also supplying the contract-enforcement and transaction-cost conditions under which investment and growth occur. JUSPER seeks to offer this framework, not as a verdict on any one judiciary, but as an evidence base for liberal, reform-minded debate about how Europe's courts actually perform.

This approach introduces JUSPER, the Justice Systems Performance Index, to answer a single guiding question: how good, in terms of their capacity, are the judicial systems of the EU27? We approach this empirically, by examining how far the courts of each Member State resolve cases in less time, are adequately resourced, and are genuinely accessible to citizens and businesses. These elements of the judicial systems are the three dimensions that the index captures as its Efficiency, Resources and Institutional pillars. JUSPER is built exclusively on the EU Justice Scoreboard hard data, and does not rely on expert opinion or perception surveys, both of which have been criticised in the relevant literature for politicisation and difficulties of cross-country comparability.

1.1 What JUSPER measures, what it does not

JUSPER measures three things: first, the speed, balance and labour productivity with which first-instance courts process civil, commercial and administrative cases, with extended attention to specialised business-relevant case categories and to criminal cases of money laundering and bribery (the Efficiency pillar); second, the level of fiscal commitment Member States allocate to the court system (the Resources pillar, treated as input rather than as an output proxy); and third, the institutional features that shape citizens' and businesses' interaction with the system – accessibility, legal aid generosity for both civil and criminal proceedings, court fees, transparency and digitalisation (the Institutional pillar).

JUSPER does not measure judicial independence, the rule of law, or whether the judiciary is politically captured. These dimensions are observable only through expert assessment or perception data. The composite is built only from administrative-record and structurally coded data, while some data on perception and expert series are retained as external validators, presented in the appendix to ensure JUSPER's methodological robustness. The implication of our approach is that a high JUSPER score is not equivalent to a strong rule of law, since a captured judiciary that processes cases quickly with adequate budget will score well on JUSPER. Therefore, we create an index that looks at the capacity of the judicial systems, not their fairness, and we treat this not as a defect but as the explicit boundary of what hard data alone can detect.

The novelty of the index is that it operationalises a strict-objectivity composite of judicial performance for the EU27, which aligns with the theoretical literature (Bosio, 2023; Coviello, Ichino and Persico, 2019).

2. Conceptualisation: How JUSPER is built

JUSPER is constructed as a four-level composite indicator following the OECD (2008) handbook on composite indicators. Raw indicators are aggregated into sub-components, sub-components into pillars, and pillars into the overall index (see Figure 1).

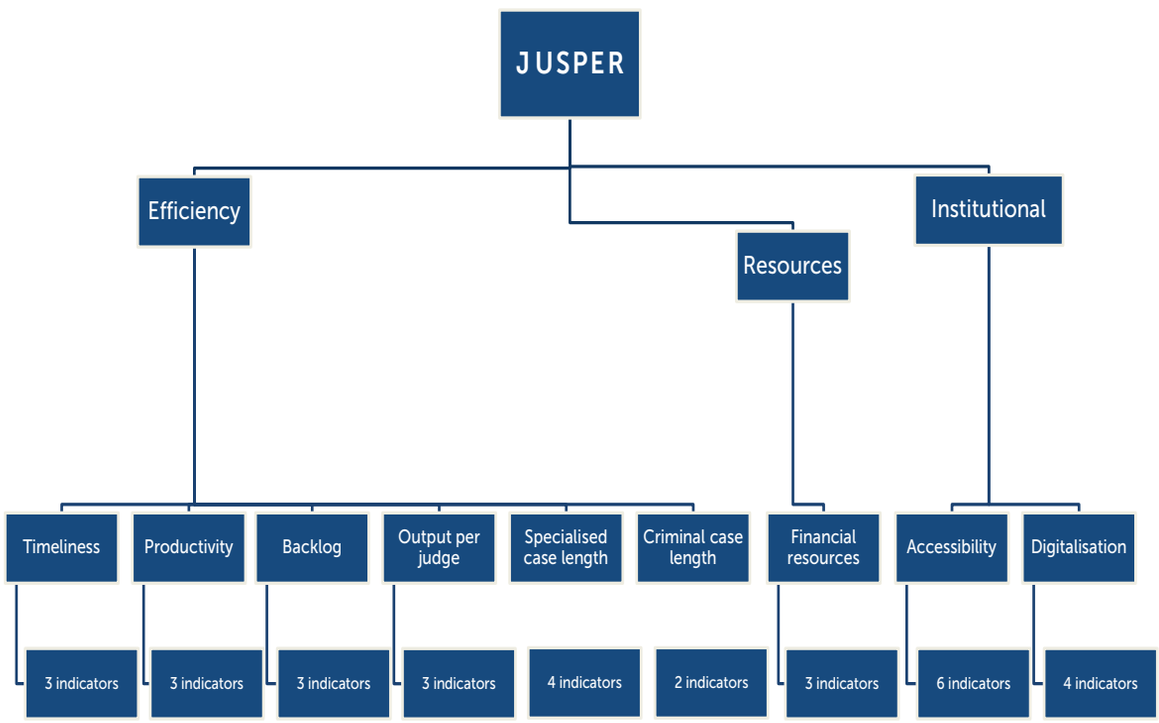


Figure 1. JUSPER concept tree. Three pillars (Efficiency, Resources, Institutional) decompose into nine sub-components and 31 observed indicators. Hierarchical aggregation with principal component analysis (PCA)-derived weights (fixed across panel years 2014, 2021-2024).

2.1 The construct: throughput, productivity, inputs and institutional features

Performance, in JUSPER, is a composite idea of outputs (the Efficiency pillar – including labour productivity and specialised case-throughput), input commitment (the Resources pillar – treated as fiscal capacity rather than as a clean output proxy) and institutional features (the Institutional pillar). The Efficiency pillar measures speed (Timeliness, in days at first or all-court instance for civil, commercial and administrative cases), input–output balance (Productivity, the clearance rate of resolved over incoming cases), unresolved-case stock (Backlog, pending cases per 100 inhabitants), labour productivity at the level of the individual judge (Output per judge, cases resolved per judge per year), and the throughput of two narrowly defined case categories that carry particular economic and rule-of-law relevance: specialised civil and commercial cases (judicial review in competition matters, electronic communications, EU trademark infringement, and consumer protection) and criminal cases (money laundering and bribery).

The output-per-judge sub-component is computed as cases resolved per judge per year for each major case category (non-criminal, civil and commercial litigious, administrative), following the operationalisation used by Coviello, Ichino and Persico (2019), Melcarne, Ramello and Spruk (2021) and Bosio (2023). It is the canonical productivity measure in the law-and-economics literature. JUSPER adopts a dashboard approach, combining outputs, inputs and institutional features rather than estimating a production frontier.

2.1.1 What each pillar captures

Each pillar is constructed so that it can be extracted and used independently of the composite, by researchers or policy analysts who want a hard-data measure of a single dimension of judicial performance.

- **Efficiency:** the throughput dimension of judicial performance: timeliness (3 indicators), input–output balance via clearance rate (3 indicators), unresolved-stock backlog (3 indicators), labour productivity (3 indicators), specialised case length (4 indicators), criminal-case length (2 indicators). Eighteen indicators in total. This pillar can be used as a stand-alone judicial-effectiveness measure for the EU27 and is the principal vehicle through which the index reflects business-environment and rule-of-law-relevant throughput.
- **Resources**: the level of state commitment and input capacity allocated to the court system, deflated to neutralise price-level differences: court budget per inhabitant (in purchasing power standards), court budget as a share of GDP, and the ratio of judicial starting salary to the national gross annual salary. Three indicators. The pillar is treated as input rather than as an unambiguous performance signal: higher values may reflect either stronger institutional commitment to the judiciary or higher structural costs unrelated to performance (legacy bureaucratic mass, salary-level differentials between transition and consolidated economies).
- **Institutional**: structural features that shape how citizens and businesses interact with the judicial system: accessibility (legal aid generosity in civil and consumer cases, legal aid generosity in criminal cases, income threshold for full legal aid, court fees for a typical €6,000 consumer claim, online citizen-facing information, gender diversity at the Supreme Court – 6 indicators) and digital readiness (procedural rules permitting digital court technology, actual information and communication technology (ICT) use, online proceedings, online publication of judgments – 4 indicators). Ten indicators in total.

Throughout the analysis we report pillar-level scores alongside the headline JUSPER, so that the contribution of each dimension can be inspected independently and any one pillar can be used as a stand-alone indicator if a reader wishes to focus on a specific aspect of judicial performance.

PCA weights reflect empirical co-variation rather than normative importance and may down-weight theoretically relevant but weakly correlated dimensions; this is a feature of the OECD-style aggregation approach we adopt and not a defect,

but it is one that the reader should keep in mind when interpreting the relative contribution of each sub-component.

2.2 Indicator selection rules

- Source. The composite is built only from the European Commission's 2026 EU Justice Scoreboard, supplemented by Eurostat purchasing-power-parity statistics (used solely to PPS-deflate monetary indicators).
- Relevance. Each indicator is theoretically and empirically associated with first-instance or all-instance court performance – either as an output (cases resolved, length to disposition), an input (budget, salary) or an institutional feature (digital readiness, transparency, accessibility).

EU-wide coverage. Indicators are reported, in principle, for all 27 Member States. Indicators with structural missingness affecting more than five Member States are excluded from the baseline; for the 2024 cross-section we observe at least 22 of 27 Member States for 22 of the 31 indicators and at least 14 of 27 for all others. The full architecture – all 31 indicators, their sub-components, pillars and direction – is set out in *Table A.1*.

- Comparability. Indicators are reported on a per-population, per-GDP, per-PPS or share basis to neutralise country size; absolute counts are excluded. Monetary amounts are deflated by Eurostat AIC Price-Level Index to neutralise price-level differences.
- Direction. Each indicator is re-orientable so that higher values unambiguously indicate better performance. The clearance rate is handled with an asymmetric transformation that penalises under-clearance more steeply than over-clearance.[1]

1 The full list of the indicators included, their rationale, direction and scoring method is given in the Appendix.

3. Methodology: how we measure the judicial performance of the EU27 Member States

The empirical estimation of such an index requires a robust conceptual and statistical model, which ensures that ideas and data are measured in the best possible way. In this section we explain in brief how we construct this composite indicator, while in the Appendix we offer a full methodological note on statistics and robustness checks that show that our index is solid.

- **Putting everything on a common scale:** We put all 31 indicators selected in the same unit, when 'higher' always means 'better'. For example, a longer disposition time or larger backlog is bad. A country with shorter disposition times scores higher than a country with longer ones. All data are expressed onto a 0-to-100 scale, where the worst observed value across all panel years becomes 0 and the best becomes 100.[2]
- **A common measurement:** We aggregate in three steps, building from the most detailed level up to the headline number.[3] We go from each sub-component to each pillar, and then from the three pillar scores into the headline JUSPER. In all cases, we don't choose the weights, that is how important is each indicator, component, and pillar, but this importance is derived statistically.[4]
- **How confident we are that we measure it right:** Every measurement carries some uncertainty.[5] so we also report confidence intervals. These answer

2 Technically: (i) direction harmonisation – multiplying disposition time, backlog and court fees by minus one, and applying an asymmetric transformation to the clearance rate that fully penalises under-clearance and half-penalises over-clearance (because clearing above 1.0 is good, just less so than achieving exactly 1.0); (ii) winsorisation at [Q1 − 1.5·IQR, Q3 + 1.5·IQR] across pooled panel years to cap extreme outliers; (iii) min–max rescaling to [0, 100] using pooled-year bounds. Three monetary indicators (court budget per inhabitant, judicial salary, civil legal aid fee) are PPS-deflated using Eurostat's Actual Individual Consumption price-level index before normalisation. Full formulas in Appendix A.2.2 and A.2.3.

3 Hierarchical aggregation following the OECD (2008) Handbook on Constructing Composite Indicators. The choice of within-level aggregation rules is described in Appendix A.2.4. Sub-component scores use the simple arithmetic mean of available normalised indicators; pillar scores use PCA-derived weights across sub-components; the headline JUSPER uses PCA-derived weights across the three pillars

4 We use Principal Component Analysis (PCA) on the correlation matrix of sub-component (or pillar) scores. The first principal component captures the largest single dimension of variation across the EU27. We use the absolute loadings on this first component, normalised to sum to one, as weights. This is the standard OECD-Handbook approach. The within-Efficiency PCA uses pooled 2014, 2021–2024 sub-component scores ($n \approx 130$ country-year observations). The within-Institutional PCA and the top-level pillar PCA use the 2024 cross-section, because most Institutional indicators are reported only for 2024 and only 2024 has all three pillars fully populated. Once fitted, the weights are fixed across all robustness specifications, including drop-one analysis. Full estimation details in Appendix A.2.4.

5 We distinguish two sources of uncertainty: (a) aggregation uncertainty – how would the score change if we had used slightly different but equally defensible weights – and (b) indicator-existence sensitivity – how would the score change if a particular indicator had not been available. We quantify (a) via a weight-perturbation Dirichlet bootstrap (B = 1,500 replications, concentration $\kappa = 100$) and (b) via drop-

a simple question: if we had chosen slightly different but equally reasonable weights, how much would each country's score have moved? In practice, a score of 74 out of 100 could just as easily fall anywhere between 73.1 and 75. These ranges are narrow, which means our scores are reliable.

one Spearman analysis. The second uncertainty check is a 'drop-one' test. We recompute JUSPER 31 times, each time removing one of the 31 indicators and recomputing only the affected sub-component while keeping the PCA weights fixed at their baseline values. We then report the Spearman rank correlation between the recomputed ranking and the baseline ranking. The minimum Spearman ρ across all 31 single-indicator removals is 0.94 and the median is 0.99; the indicator with the largest individual influence is the ratio of judicial salary to the national average wage. Full description in Appendix A.2.7 and A.3.

4. The Justice Systems Performance Index 2024

4.1 The 2024 ranking

Table 1 reports the JUSPER 2024 ranking with pillar scores. Latvia tops the index at 74.0, followed by Bulgaria (68.3) and Estonia (66.3), while Cyprus (24.2), Greece (34.8) and Portugal (39.6) sit at the bottom of the table. Member States with a balanced profile across all three pillars (Latvia, Estonia, the Netherlands) outperform those with strength in a single dimension. Bulgaria's second-place ranking, in particular, is driven by an unusually high Resources score (89.3) combined with above-EU-average Efficiency (75.7), partly offset by a moderate Institutional score (47.0).

Rank	ISO	Country	Efficiency	Resources	Institutional	JUSPER	95 % CI
1	LV	Latvia	71.7	68.7	79.9	**74.0**	[73.1, 75.0]
2	BG	Bulgaria	75.7	89.3	47.0	**68.3**	[65.0, 71.7]
3	EE	Estonia	81.6	49.3	62.3	**66.3**	[63.8, 68.8]
4	NL	Netherlands	73.5	46.6	64.6	**63.5**	[61.4, 65.5]
5	LT	Lithuania	71.4	42.2	68.2	**62.9**	[60.4, 65.0]
6	SE	Sweden	80.8	41.0	52.0	**60.1**	[56.8, 63.4]
7	DK	Denmark	76.0	44.2	54.6	**60.1**	[57.5, 62.6]
8	HU	Hungary	80.2	33.5	53.8	**58.6**	[54.9, 62.2]
9	AT	Austria	74.6	46.0	49.4	**58.0**	[55.5, 60.5]
10	SI	Slovenia	62.9	57.4	49.2	**56.4**	[55.2, 57.5]
11	MT	Malta	40.4	89.2	48.3	**55.6**	[52.0, 59.6]
12	SK	Slovakia	54.9	52.4	56.0	**54.7**	[54.4, 55.0]
13	PL	Poland	62.7	74.6	32.9	**54.5**	[51.1, 57.8]
14	HR	Croatia	53.1	61.9	48.2	**53.5**	[52.5, 54.6]
15	DE	Germany	59.3	53.9	46.7	**53.2**	[52.1, 54.3]
16	IT	Italy	41.1	51.0	66.1	**52.9**	[50.9, 55.1]
17	RO	Romania	56.0	53.4	48.6	**52.6**	[51.9, 53.2]
18	CZ	Czech Republic	68.2	45.1	38.7	**51.4**	[48.9, 53.9]
19	ES	Spain	32.9	52.5	63.5	**49.2**	[46.7, 51.8]
20	LU	Luxembourg	45.7	52.2	40.7	**45.4**	[44.6, 46.3]
21	BE	Belgium	58.9	35.5	34.6	**43.9**	[41.7, 46.1]

22	FR	France	48.0	37.8	41.4	**43.0**	[42.2, 43.8]
23	IE	Ireland	31.7	40.1	51.3	**41.1**	[39.5, 42.8]
24	FI	Finland	47.4	32.4	38.0	**40.1**	[38.9, 41.3]
25	PT	Portugal	35.9	41.0	42.5	**39.6**	[39.1, 40.2]
26	EL	Greece	26.1	41.7	39.0	**34.8**	[33.5, 36.2]
27	CY	Cyprus	12.1	30.7	32.0	**24.2**	[22.4, 26.0]

Table 1. JUSPER 2024 ranking with pillar scores and 95 per cent weight-perturbation bootstrap confidence intervals (B = 1,500 Dirichlet draws, κ = 100). All 27 Member States have full pillar coverage under the extended 31-indicator architecture; indicator-existence sensitivity is reported separately as the drop-one analysis in Appendix A.3. The median CI width is 4.1 score points. Countries whose CIs overlap substantially should be treated as statistically indistinguishable in their ranking position.

4.2 Reading the ranking: what JUSPER reveals for EU's judicial systems

The ranking surfaces three observations in particular. At the very top, it is dominated by Member States that combine high Efficiency with strong Institutional scores: Latvia (Efficiency 71.7, Institutional 79.9), the Netherlands (73.5 / 64.6), Lithuania (71.4 / 68.2), Estonia (81.6 / 62.3). These are the Member States where throughput and institutional features reinforce one another. By contrast, Bulgaria appears at second place despite a moderate Institutional score, propelled by its high Resources score (89.3); the legal-origins literature and the validation results suggest that this Resources reading reflects Eastern (former Soviet) legacy bureaucratic mass rather than a strong institutional outcome – a pattern we discuss in detail below. Finally, several mature liberal democracies (Belgium 43.9, France 43.0, Finland 40.1, Ireland 41.1) score below the EU27 average in 2024 on the headline JUSPER, despite high external benchmarks of judicial independence. The divergence is the focus of the external-validation analysis.

Hungary remains highly ranked at #8 on JUSPER. JUSPER measures throughput, resourcing and institutional features, not judicial independence; the construct is by design separate from rule-of-law concerns, and the validation section reports correlations with rule-of-law and perception benchmarks transparently. As we note in Section 1.1, a captured judiciary that processes cases quickly with adequate budget will score well on JUSPER, and we treat this not as a defect but as the natural boundary of what hard administrative data alone can detect.

4.3 Year-on-year changes: 2023 to 2024

Country	JUSPER 2023	JUSPER 2024	Δ JUSPER	Δ Efficiency	Δ Resources	Δ Institutional
IE Ireland	20.2	41.1	▲ +20.9	+24.0	+21.9	+17.1
DK Denmark	41.8	60.1	▲ +18.3	+0.1	+27.1	+30.7
MT Malta	43.5	55.6	▲ +12.0	-0.6	+17.0	+21.4
IT Italy	45.9	52.9	▲ +7.0	-10.4	+12.3	+21.0
SE Sweden	53.6	60.1	▲ +6.5	-1.4	+12.1	+10.7
PL Poland	48.6	54.5	▲ +6.0	-9.9	+25.3	+9.1
CZ Czech Republic	45.7	51.4	▲ +5.7	-6.4	+16.3	+10.9
ES Spain	43.5	49.2	▲ +5.7	-9.3	+8.5	+18.9
LU Luxembourg	57.7	45.4	▼ -12.3	-30.8	+3.6	-4.2
RO Romania	61.0	52.6	▼ -8.4	+9.5	-12.9	-23.3
HU Hungary	66.1	58.6	▼ -7.5	-3.3	+0.1	-16.8
EL Greece	42.2	34.8	▼ -7.4	-18.4	+12.6	-9.7
PT Portugal	44.9	39.6	▼ -5.3	-22.9	+5.2	+5.3
EU average	50.3	52.5	▲ +2.2	-6.4	+11.7	+4.5

Table 2. Largest year-on-year movers in the JUSPER ranking, 2023 → 2024. Ireland, Denmark and Malta record the largest improvements; Luxembourg, Romania, Hungary and Greece register the largest declines. The largest pillar-level shifts are concentrated in Efficiency and Institutional rather than Resources; this is consistent with the extended Efficiency architecture in the present version absorbing additional throughput signal that the earlier 24-indicator version under-weighted.

Across the EU27 as a whole, the average JUSPER score for 2024 stands at 52.5 out of 100, leaving considerable room for improvement even among mid-table performers. The corresponding average for 2023 is 50.3, meaning that the EU judicial system as a bloc improved by about 2 points year-on-year. That aggregate improvement, however, masks striking pillar-level divergence, since Efficiency fell (from 62.8 to 56.4, a drop of 6.4 points) because the extended architecture now captures previously invisible delays in specialised commercial and criminal cases, while Resources rose sharply (from 38.8 to 50.5, +11.7 points) as 2024 budget and salary data came in and Institutional gained modestly (from 45.5 to 50.0, +4.5 points). In other words, the EU is spending more but processing certain case categories more slowly, a pattern consistent with the 'Resources paradox' discussed in Section 5.

At Member State level, the year-on-year picture is mixed rather than uniformly positive or negative: 18 of the 27 Member States improved between 2023 and 2024, and 9 declined. Among the thirteen largest movers shown in Table 2, eight improved and five declined, while the remaining Member States recorded smaller changes. Part of the movement, most visibly for Ireland, which gains 20.9 points, reflects the extended indicator set exposing coverage gaps that were previously

reported as NA, rather than genuine improvements in throughput. Denmark's +18.3 gain, by contrast, and Luxembourg's –12.3 decline, are grounded in the underlying 2024 CEPEJ data and reflect substantive year-on-year changes in disposition times, budgetary allocations and specialised case throughput.

Ireland's particularly large gain (+20.9 points) is the most striking pattern in the year-on-year comparison (*Table* 2). This result is driven primarily by improved data coverage within the Efficiency pillar. The expanded Efficiency architecture incorporates all-instance disposition time for 2024 and additional specialised indicators of case length and criminal-case throughput, allowing a more complete assessment of judicial efficiency. These additions generate a much higher Efficiency score and move Ireland out of the bottom three positions in the ranking. However, the increase should be interpreted with caution. It largely reflects the resolution of previous data-coverage limitations and the inclusion of additional efficiency indicators, rather than clear evidence of a structural year-on-year improvement in the performance of the Irish justice system.

Denmark's improvement (+18.3) reflects a genuine and consistent strengthening across all three pillars in 2024 reference data: faster disposition times for non-criminal cases (19,3 days for civil/commercial/administrative cases, down from 22.7 in 2023), higher clearance rates, and a relatively healthy Resources score (51.0). Malta's improvement (+12.0) reflects strong Resources data combined with a modest improvement in Institutional indicators. By contrast, Luxembourg's drop (–12.3) and the declines in Hungary (–7.5), Romania (–8.4) and Greece (–7.4) reflect a combination of slowing throughput in the specialised case-length data added to this version and modest deterioration in Resources scores.

4.4 The diagnosis: what the EU's judicial systems suffer from

The JUSPER 2024 results reveal four cross-cutting weaknesses that, read together, amount to a structural diagnosis of the EU's judicial landscape. The first and most visible problem is slow specialised commercial litigation. The Specialised case-lengths sub-component – which tracks how long competition, electronic communications, EU trademark and consumer-protection cases take at first instance – shows the widest cross-country dispersion of any sub-component in the index. Member States such as Cyprus, Greece, Italy, Spain and Portugal post specialised case lengths several times longer than those of the Nordic and Baltic frontrunners. Because these specialised categories carry disproportionate weight for cross-border investment and EU internal-market enforcement, this is the throughput dimension with the largest economic cost.

The second problem is chronic backlog accumulation in litigious civil and commercial cases. The Backlog sub-component shows that the EU27 average Member State carries roughly 1.4 pending litigious cases per 100 inhabitants, but the dispersion is wide – with the worst performers running stocks of 3 to 5 per 100

inhabitants. Combined with clearance rates persistently below 1.0 in several Member States, this means that the backlog is not just high but actively growing year-on-year. The Efficiency pillar scores at the bottom of the ranking (Cyprus 12, Greece 26, Ireland 32, Spain 33, Portugal 36) are driven primarily by this single problem.

The third problem is the digital divide. The four ICT indicators – digital-ready procedural rules, actual ICT use, online proceedings, online publication of judgments – reveal a sharp split between Member States with comprehensive digital court infrastructure (Estonia, the Netherlands, Sweden, Finland, Denmark) and those whose digital coverage remains partial. The gap is not narrowing fast enough: Member States that began the 2020s without strong digital court infrastructure (Greece, Cyprus, Bulgaria, Croatia, parts of the Mediterranean) remain at the lower end of the Digitalisation sub-component in 2024.

The fourth problem is the cost-efficiency paradox. Several Member States with the highest Resources pillar do not produce proportionate throughput. The Resources × WGI Rule of Law correlation of −0.35 confirms what the legal-origins literature has long argued: high judicial spending in the EU is partly an Eastern (former Soviet) legacy effect, heavy bureaucratic infrastructure inherited from earlier institutional regimes, not necessarily a sign of judicial quality. This result shows that the constraint is not the volume of resources committed *per se*, but rather the productivity of those resources.

What the EU judicial system does not suffer from, on the evidence of JUSPER 2024, is a shortage of judges relative to population (judge density per 100,000 is broadly adequate across the EU27), nor a generalised collapse of clearance rates (the EU27 average sits very close to 1.0). The diagnosis is more specific: the EU27 has enough judges and spends enough money, but the throughput is not distributed evenly across case categories, the backlog of litigious commercial cases is not being cleared at the pace they accumulate, and the digital infrastructure required to make modern justice systems work has not yet been built out across the Mediterranean and parts of the Eastern (former Soviet) periphery. These are tractable policy problems, not structural inevitabilities, which is why JUSPER is offered to policymakers as a diagnostic instrument rather than a static league table.

5. What JUSPER means for institutions overall: economic outcomes and rule-of-law benchmarks

JUSPER is built only from the EU Justice Scoreboard hard data to assess justice systems, but it can be also useful to examine other institutional factors, conceptually related, which are rule of law and economic performance. Theory suggests that well-functioning courts are associated with lower transaction costs (Bosio, 2025; North, 1990; Williamson, 1985), more accessible third-party enforcement and trade credit (Johnson, McMillan and Woodruff, 2002), and ultimately stronger investment and growth (Acemoglu, Johnson and Robinson, 2005). Also, perception and rule-of-law indices, checks whether JUSPER overlaps with constructs that the literature commonly conflates with judicial performance.

In table 3 we present correlations which show that three economic-outcome benchmarks and five rule of law aspects are correlated with JUSPER and/or its components. The pillar-level analysis reveals that Efficiency, rather than judicial resources alone, is the component of JUSPER most closely associated with stronger governance, the rule of law, and economic competitiveness. Countries with more efficient judicial systems tend to exhibit better institutional quality and stronger economic performance, supporting the central proposition of the law-and-economics literature (e.g., Richard Posner; Simeon Djankov et al., 2003; Erik Voigt, 2019; Bosio, 2025) that the economic value of the judiciary lies primarily in its ability to reduce transaction costs, enforce contracts efficiently, strengthen legal certainty, and create a more attractive environment for investment.

External benchmark	JUSPER	Efficiency	Resources	Institutional
EFW Overall	-0.14	-0.15	-0.27	+0.08
FDI inflows (% GDP)	+0.41	+0.23	+0.58	+0.16
Tax Comp Index 2024	+0.60	+0.59	+0.11	+0.33
V-Dem Judicial Constraints	+0.15	+0.24	-0.32	+0.33
V-Dem Liberal Component	+0.20	+0.34	-0.28	+0.26
WGI Control of Corruption	+0.00	+0.22	-0.37	+0.02
WGI Government Effectiveness	-0.08	+0.11	-0.37	-0.01
WGI Rule of Law	+0.03	+0.19	-0.35	+0.11

Table 3. Spearman rank correlations between JUSPER 2024 (and each pillar) and held-out external benchmarks. Positive coefficients shaded in conventional green-to-grey are economically expected; the Resources pillar exhibits a persistent negative correlation with the WGI and V-Dem rule-of-law dimensions that we discuss in detail in Section 5.4 below.

These associations should be interpreted as a correlational rather than causal mechanism; we can identify them but not attribute certain variations to each factor. However, our results can carry three implications. The first is that the Bosio (2025) hypothesis is consistent with the EU27 cross-section: JUSPER and especially its Efficiency pillar are positively associated with FDI and tax competitiveness. The Efficiency-pillar association of +0.59 with tax competitiveness, in particular, suggests a relationship that the law-and-economics literature has long argued theoretically. The second is that JUSPER is not a rule-of-law index; high JUSPER scores in Member States with documented rule-of-law concerns should be expected, not interpreted as a methodological failure. The third is that the Resources pillar carries an empirically real signal that may reflect Eastern (former Soviet) legacy bureaucratic mass; the PCA weighting addresses this by assigning Resources only 0.25 of the JUSPER weight in 2024, but readers concerned about input bias should consult the pillar-level decomposition.

Judicial performance involves inherent trade-offs; no single metric fully captures system quality. Three trade-offs in particular are visible in the EU27 data.

- **Efficiency versus fairness:** a system that disposes of cases quickly may do so by limiting deliberation, restricting hearings, or lowering the procedural threshold for summary judgments.
- **Speed versus consistency of jurisprudence:** jurisdictions in which first-instance courts decide rapidly may exhibit higher reversal rates on appeal.
- **Cost-efficiency versus underfunding:** a system with very low cost per resolved case may be highly efficient, or it may be chronically under-resourced.

Reading JUSPER alongside its three pillars makes these trade-offs explicit.

6. Conclusion: Effective Courts, Stronger Economies

JUSPER is the first EU-wide composite indicator of judicial performance built exclusively from the EU Justice Scoreboard and from Eurostat purchasing-power statistics. The 2024 headline ranking places Latvia, Bulgaria and Estonia at the top and Cyprus, Greece and Portugal at the bottom. Two robustness tests confirm that the ranking is trustworthy. First, we tested what would happen if we removed each of the 31 indicators one at a time – even in the worst case, the resulting ranking was 94 per cent identical to the original, meaning no single indicator drives the outcome. Second, the uncertainty around each country's score is small: about four points on the 0-to-100 scale. In practical terms, when two countries are more than four points apart on JUSPER, the difference is real rather than statistical noise.

JUSPER is positively associated with better economic outcomes, as it shows positively correlation with both the Tax Foundation's International Tax Competitiveness Index (+0.60) and FDI inflows (+0.41). These relationships are mainly driven by the Efficiency pillar, suggesting that more efficient courts are linked to a stronger business environment and greater investment, in line with the law-and-economics literature. JUSPER also performs better against governance benchmarks, showing a positive correlation with the V-Dem Liberal Component (+0.20) and an almost neutral correlation with the WGI Rule of Law (+0.03).

Three policy implications follow. The first is that an EU-wide composite of judicial performance can be built on hard data alone and produces a stable, defensible ranking that reflects both economic-mechanism and institutional-quality dimensions. The pillar-level correlations should also inform interpretation: strong JUSPER scores driven by Efficiency are positively associated with tax competitiveness and FDI; strong JUSPER scores driven by Resources alone may warrant external scrutiny, as the Resources pillar carries a documented Eastern (former Soviet) legacy effect that is at variance with the rule-of-law benchmarks. Finally, the Bosio (2025) hypothesis is consistent with the EU27 evidence, suggesting that judicial-efficiency reforms could plausibly figure on the policy agenda not only as rule-of-law instruments but as economic-development instruments. Future iterations of JUSPER should work toward EU-wide reporting of appellate reversal rates and decision-quality indicators – which are not currently available on a comparable basis across the EU27 – and should extend the panel forward as new EU Justice Scoreboard editions are released.

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Appendix

A.1 Full indicators list

Pillar	Sub-component	Indicator	What it captures	Direction
I. Efficiency	*1.1 Timeliness*	Disposition time, civil/commercial/administrative & other (days, 1st instance)	Estimated time courts need to resolve a non-criminal case at first instance.	Lower = better
		Disposition time, litigious civil and commercial (days; all court instances where reported, 1st instance otherwise)	Estimated time to resolve litigious civil and commercial cases through the full court process. Where the all-instances series is published (2024 only), it is used in preference to the 1st-instance proxy.	Lower = better
		Disposition time, administrative (days; all court instances where reported, 1st instance otherwise)	Estimated time to resolve administrative cases through the full court process. Where the all-instances series is published (2024 only), it is used in preference to the 1st-instance proxy.	Lower = better
	1.2 Productivity (clearance)	Clearance rate, civil/commercial/administrative & other (resolved/incoming)	Whether the system clears cases at the same pace they come in (≈ 1.0 = balanced).	Closer to 1.0 = better; under-clearance penalised more than over-clearance
		Clearance rate, litigious civil and commercial	Same balance test for the litigious civil and commercial caseload.	Closer to 1.0 = better; under-clearance penalised more than over-clearance
		Clearance rate, administrative	Same balance test for the administrative caseload.	Closer to 1.0 = better; under-clearance penalised more than over-clearance

	1.3 Backlog	Pending civil/commercial/administrative & other (per 100 inhabitants)	Stock of unresolved non-criminal cases at first instance.	Lower = better
		Pending litigious civil and commercial (per 100 inhabitants)	Stock of unresolved litigious civil and commercial cases.	Lower = better
		Pending administrative (per 100 inhabitants)	Stock of unresolved administrative cases.	Lower = better
	1.4 Output per judge	Cases resolved per judge per year, civil/commercial/administrative & other	Labour productivity proxy: how many non-criminal cases an average judge resolves in a year (derived: incoming × clearance × scaling / judges per 100k).	Higher = better
		Cases resolved per judge per year, litigious civil and commercial	Labour productivity for the litigious civil and commercial caseload.	Higher = better
		Cases resolved per judge per year, administrative	Labour productivity for the administrative caseload.	Higher = better
	1.5 Specialised case lengths	Length of judicial review in competition matters (days, 1st instance)	Time taken by courts to dispose of appeals against decisions of national competition authorities; matters for business confidence and EU internal-market enforcement.	Lower = better
		Length of judicial review in electronic communications matters (days, 1st instance)	Time taken to dispose of appeals against decisions of national electronic-communications regulators; matters for telecoms and digital-market investment.	Lower = better
		Length of EU trademark infringement cases (days, 1st instance)	Time taken to dispose of EU trademark infringement litigation; matters for intellectual-property protection and FDI in IP-intensive sectors.	Lower = better

		Length of consumer-protection judicial review (days, 1st instance)	Time taken to dispose of judicial review of consumer-protection decisions; matters for citizen-facing rights enforcement.	Lower = better
	1.6 Criminal case lengths	Length of money laundering court cases (days, 1st instance)	Time taken to dispose of money laundering proceedings; matters for AML compliance signalling and EU institutional credibility.	Lower = better
		Length of corruption (bribery) court cases (days, 1st instance)	Time taken to dispose of bribery proceedings; matters for rule-of-law credibility and investor confidence.	Lower = better
II. Resources	*2.1 Financial resources*	Court budget per inhabitant (EUR, PPS-adjusted)	Public investment in the court system, in real terms.	Higher = better
		Court budget as a percentage of GDP	Relative public investment in the court system.	Higher = better
		Ratio of starting judicial salary to national average gross annual salary (2024)	Material attractiveness of a judicial career relative to the national labour market.	Higher = better
III. Institutional	*3.1 Accessibility*	Legal aid weighted fee for lawyers in a civil case (PPS-adjusted, 2025)	Generosity of the legal-aid scheme as paid to participating lawyers in a standard civil case.	Higher = better
		Legal aid weighted fee for lawyers in a criminal case (PPS-adjusted, 2025)	Generosity of the legal-aid scheme for criminal defence lawyers; matters for access to qualified defence counsel.	Higher = better
		Income threshold for full legal aid (consumer case, 2024)	How permissive the income test is for full legal aid in a standard consumer case.	Higher = better
		Court fee for a €6,000 civil claim (% of claim value, 2024)	Cost barrier to bringing a moderate-value civil case to court.	Lower = better

		Online information about the justice system, score (2020)	Availability and quality of citizen-facing online information about the justice system.	Higher = better
		Female share of professional Supreme Court judges	Gender diversity at the apex of the judicial hierarchy.	Higher = better
	3.2 Digitalisation	Procedural rules allowing digital court technology, score (EUJS Fig 41, 2024)	Whether national procedural rules permit digital tools (videoconferencing, digital evidence).	Higher = better
		Use of digital technology by courts and prosecution services, score (Fig 42, 2024)	Actual deployment of ICT, case-management systems and remote-work infrastructure.	Higher = better
		Digital solutions for civil/admin proceedings, score (Fig 45, 2024)	Citizens' ability to file claims, pay fees and access case files online.	Higher = better
		Online access to published judgments, score (Fig 47, 2023)	Transparency of judicial decisions through online publication and machine-readability.	Higher = better

Table A.1. JUSPER architecture (v5), with full indicator names, plain-language description and direction. 31 indicators across 9 sub-components and 3 pillars. The Efficiency pillar has been extended in this version with two new sub-components – Specialised case lengths (4 indicators) and Criminal case lengths (2 indicators) – and disposition times for litigious civil/commercial and administrative cases now use the all-instances series where reported (2024 only). The Institutional pillar's Accessibility sub-component has been extended with the criminal legal-aid fee.

A.2 Methodological note

A.2.1 Data and panel

The master panel covers the EU27 × {2014, 2021, 2022, 2023, 2024}, with 2024 as the headline cross-section.[6] All 31 baseline indicators are sourced from the European Commission's 2026 EU Justice Scoreboard (drawing in turn on the Council of Europe's CEPEJ and on national contact persons). Eurostat is used only for the Actual Individual Consumption Price-Level Index applied to PPS-deflate monetary indicators (the Eurostat dataset code is prc_ppp_ind_1).

The output-per-judge productivity indicators are derived from existing variables: cases_per_judge_x = (incoming_per100 × clearance_rate × 1,000) / judges_

6 Two timeliness indicators in the present version – disposition time for litigious civil and commercial cases at all court instances, and disposition time for administrative cases at all court instances – are reported only for 2024. For earlier years we use the corresponding first-instance disposition time as a proxy and note this in the relevant tables.

per100k, computed for each of the three case categories. This makes the productivity sub-component multi-year by construction, since its inputs span 2014, 2021, 2022, 2023 and 2024. Four ICT/digitalisation indicators are taken from the 2025 EU Justice Scoreboard cross-section because the 2026 quantitative factsheet does not refresh them; we carry them forward to 2024 as the most recent available structural snapshot.

Coverage and edge cases

Despite the fact that we have taken all methodological measures to ensure robustness so far, real-world data are imperfect.[7] Some indicators are reported for only some Member States; specialised case categories such as money laundering case length are not collected by every national contact person of the European Commission for the Efficiency of Justice (CEPEJ), the Council of Europe body that compiles comparative statistics on Europe's judicial systems, and small Member States naturally have few EU trademark cases or competition cases. We adopt a transparent rule for these gaps which says that a pillar score is reported only if at least half of the pillar's indicators are populated for that Member State. With the extended architecture introduced in this version of the index, all 27 Member States meet this threshold in 2024 and we publish a complete ranking. Where a sub-component is partially populated, the available indicators are averaged and the missing ones simply do not enter the calculation – we do not impute values, because imputation in cross-country judicial data risks importing assumptions that the underlying data do not support.

A.2.2 Direction harmonisation

Disposition time, backlog and court fees are reversed by multiplying by −1. The clearance rate is handled with an asymmetric transformation: harmonise(x) = x for $x \leq 1$, and $\max(0, 1 - 0.5(x - 1))$ for $x > 1$. Under-clearance is fully penalised; over-clearance is penalised at half the rate. Output per judge has natural direction (higher = better).

A.2.3 Outlier treatment, normalisation and PPS deflation

Each indicator is winsorised to [Q1 − 1.5 × IQR, Q3 + 1.5 × IQR] across pooled panel years. Min–max rescaling to [0, 100] uses pooled-year (2014, 2021–2024) bounds. Three monetary indicators (court budget per inhabitant, judicial starting salary expressed as a ratio to the national average wage, legal aid weighted fee) are deflated by the Eurostat AIC Price-Level Index: value_PPS = value_EUR × 100

7 Coverage thresholds: a pillar score is reported as not available (NA) for a Member State if fewer than 50 per cent of the indicators in that pillar are populated. With the extended 31-indicator architecture, all 27 Member States have at least 50 per cent coverage in each pillar in 2024. Specialised case-length indicators carry the largest coverage gaps – 9, 12 and 13 of 27 Member States report consumer judicial review, EU trademark and money laundering case lengths respectively – reflecting the absence of relevant cases rather than measurement failures. FSee Appendix A.2.5.

/ PLI_AIC. We deflate them using Eurostat's price-level statistics,[8] which neutralise the fact that a euro buys more court services in Sofia than in Copenhagen. After this purchasing-power adjustment, two countries spending the same number of real-purchasing-power-equivalent euros per inhabitant score identically on this indicator, even if their nominal expenditure differs. In plain terms: after this stage, every indicator is a number between 0 and 100, where 100 is the EU's observed best and 0 is the EU's observed worst.

A.2.4 Aggregation: hierarchical PCA weighting with fixed multi-year weights

Aggregation proceeds in three stages. Within each sub-component, indicators are combined with equal weights (Saisana and Saltelli, 2011). Across sub-components within each pillar, weights are derived from the absolute first-principal-component (PC1) loadings of the correlation matrix of sub-component scores, normalised to sum to 1. Across pillars in the final JUSPER composite, weights are likewise PC1-derived (*Figure* 3; the full set of within-pillar and top-level weights is reported in *Table A.*2).

The within-Efficiency PCA uses pooled 2014–2024 sub-component scores; the within-Institutional and top-level pillar PCAs use the 2024 cross-section, since the bulk of Institutional indicators are reported only for the most recent year and only 2024 has all three pillars populated. Loadings are estimated once and held fixed across specifications to ensure comparability of counterfactual rankings, including drop-one analyses (where only the affected sub-component score recomputes).

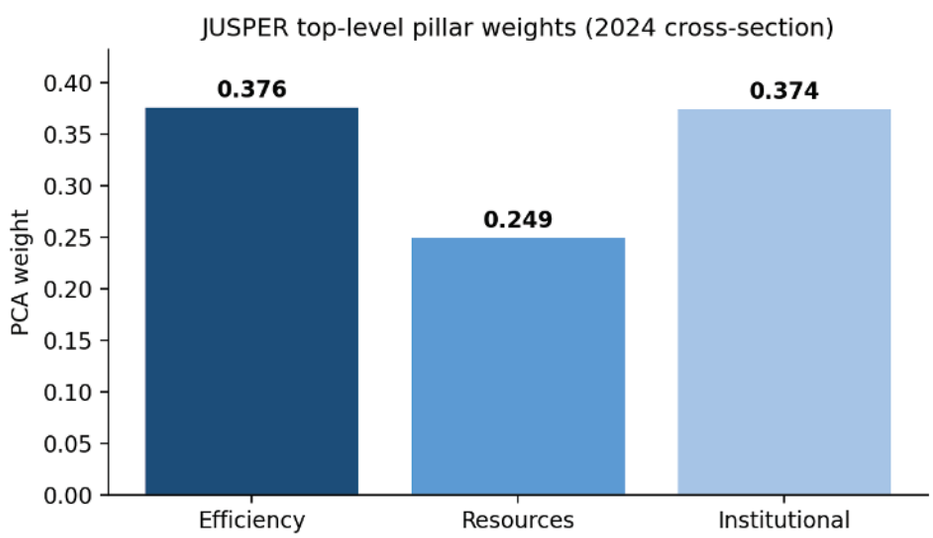


Figure 3. JUSPER top-level pillar weights from PCA on the 2024 cross-section. The Efficiency pillar carries the largest weight (0.376), reflecting the broader 18-indicator structure introduced in the present version. The Institutional pillar follows at 0.375 and Resources at 0.250.

8 Specifically, the Actual Individual Consumption price-level index (PLI_AIC) for each Member State and year, sourced from Eurostat dataset prc_ppp_ind_1. We compute value_in_PPS = value_in_EUR × 100 / PLI_AIC. This converts nominal euros into purchasing-power-adjusted euros, so that €100 in Bulgaria is treated as buying the same volume of court services as €100 in Denmark.

Level	Pillar	Component	Weight
sub-comp	Efficiency	Backlog	0.2206
sub-comp	Efficiency	CriminalTimeliness	0.1038
sub-comp	Efficiency	OutputPerJudge	0.0357
sub-comp	Efficiency	Productivity	0.2181
sub-comp	Efficiency	SpecialisedTimeliness	0.1910
sub-comp	Efficiency	Timeliness	0.2308
sub-comp	Resources	FinancialRes	1.0000
sub-comp	Institutional	Accessibility	0.5000
sub-comp	Institutional	Digitalisation	0.5000
top	JUSPER	Efficiency	0.3760
top	JUSPER	Resources	0.2495
top	JUSPER	Institutional	0.3745

Table A.2. JUSPER fixed PCA weights (within-pillar and top-level). Within Efficiency, the OutputPerJudge sub-component receives a relatively small weight (0.036) because labour productivity per judge constitutes a distinct dimension from system throughput in the EU27, and PCA correctly identifies it as a separate signal. Two new sub-components – SpecialisedTimeliness (4 indicators) and CriminalTimeliness (2 indicators) – enter the architecture for the first time and receive weights of 0.191 and 0.104 respectively.

We also test the aggregation method itself against three alternative approaches.[9] Equal weights at every level (rather than PCA-derived weights) give a ranking that is 99 per cent correlated with our baseline. The geometric mean (which penalises Member States that are very strong on one pillar and very weak on another) gives a ranking 96 per cent correlated with our baseline. A single-stage PCA on all 31 indicators directly, which deliberately ignores the conceptual hierarchy – produces a less correlated ranking (51 per cent), but this is by design, because the comparison shows that the hierarchical structure adds real information. The bottom line is that JUSPER's ranking is stable across reasonable alternative specifications; it is not the product of a single arbitrary choice.

A.2.5 Coverage threshold

A pillar score is reported as not available (NA) for a country if fewer than 50 per cent of the indicators in that pillar are present. With the extended 31-indicator architecture, all 27 Member States have at least 50 per cent coverage in each of the three pillars in 2024. Specialised case-length indicators carry the largest coverage gaps, with 9, 12 and 13 of 27 Member States reporting consumer judicial

9 Robustness specifications: R0 – equal weights at all levels; R1' – single-stage PCA on all 31 indicators directly (no hierarchy); R2 – geometric mean across pillars (substitutability-penalising); R3 – drop-one Spearman analysis (already covered). Spearman correlations versus baseline: R0 = 0.99, R1' = 0.51, R2 = 0.96. See Appendix A.2.6.

review length, EU trademark infringement length and money laundering case length, respectively; the gaps reflect the absence of relevant cases in some small Member States rather than measurement failures.

A.2.6 Robustness specifications

- R0 – Equal weights at all levels.
- R1' – Single-stage PCA on all 31 indicators directly (no hierarchy).
- R2 – Geometric mean across pillars (penalises imbalance).
- R3 – Drop-one Spearman analysis: indicator-by-indicator influence on the ranking, computed with fixed weights (only the affected sub-component score recomputes).

Rank stability is summarised by the Spearman ρ between each robustness specification and the baseline. Convention: $\rho \geq 0.90$ indicates a stable specification. The drop-one analysis yields a minimum ρ of 0.94 and a median of 0.99, indicating that no single indicator dominates the ranking; details are reported in Appendix A.3.

A.2.7 Confidence intervals: weight-perturbation bootstrap

To quantify the uncertainty around individual country scores arising from the choice of aggregation weights, we use a weight-perturbation bootstrap. For B = 1,500 replications, the top-level PCA weights are perturbed via Dirichlet draws around the fixed multi-year baseline (concentration parameter $\kappa = 100$, which keeps the perturbations modest while still spanning a meaningful credible region). All 31 indicators are retained in every replication; only the aggregation weights vary. The 2.5 and 97.5 percentiles of the resulting score distribution are reported as the 95 per cent bootstrap confidence interval (See Appendix A.2.6. above). Indicator-existence sensitivity – the question of how the ranking moves when an indicator is removed – is reported separately as the drop-one Spearman analysis in the appendix. With the extended 31-indicator architecture, the median 95 per cent CI width is 4.1 score points, down from 5.1 in the earlier 24-indicator version – a direct consequence of the broader Efficiency pillar.

A.3 Drop-one sensitivity analysis

Table A.3 reports the full drop-one Spearman ρ between the JUSPER 2024 baseline ranking and the index recomputed with each indicator removed in turn. Because PCA weights are fixed across the analysis, drop-one no longer destabilises the ranking the way it does under re-estimated weights. The minimum ρ across all 31 single-indicator removals is 0.94.

Indicator	Pillar	Sub-component	Spearman ρ vs baseline
salary_judicial_ratio	Resources	FinancialRes	0.936
ict_digital_tech_use_2024	Institutional	Digitalisation	0.977
budget_courts_pps_pcap	Resources	FinancialRes	0.979
online_info_score_2020	Institutional	Accessibility	0.980
ict_digital_ready_rules_2024	Institutional	Digitalisation	0.980
court_fee_6000eur_pct_2024	Institutional	Accessibility	0.982
ecomm_jrev_length_days	Efficiency	SpecialisedTimeliness	0.985
pending_admin_per100	Efficiency	Backlog	0.985
budget_courts_pct_gdp	Resources	FinancialRes	0.986
ict_online_proceedings_2024	Institutional	Digitalisation	0.987
ict_online_judgments_2023	Institutional	Digitalisation	0.987
female_judges_supreme_share	Institutional	Accessibility	0.988
legal_aid_criminal_weighted_fee_pps_2025	Institutional	Accessibility	0.988
trademark_length_days	Efficiency	SpecialisedTimeliness	0.989
pending_lit_civcomm_per100	Efficiency	Backlog	0.992
dt_noncrim_days	Efficiency	Timeliness	0.992
dt_admin_eff	Efficiency	Timeliness	0.992
cr_admin	Efficiency	Productivity	0.994
dt_lit_civcomm_eff	Efficiency	Timeliness	0.994
consumer_jrev_length_days	Efficiency	SpecialisedTimeliness	0.994
aml_court_length_days	Efficiency	CriminalTimeliness	0.995
legal_aid_threshold_full_2024	Institutional	Accessibility	0.995
cr_lit_civcomm	Efficiency	Productivity	0.995
pending_noncrim_per100	Efficiency	Backlog	0.996
cr_noncrim	Efficiency	Productivity	0.996
legal_aid_weighted_fee_pps_2024	Institutional	Accessibility	0.996
bribery_court_length_days	Efficiency	CriminalTimeliness	0.997
comp_jrev_length_days	Efficiency	SpecialisedTimeliness	0.998
cases_per_judge_lit_civcomm	Efficiency	OutputPerJudge	0.999
cases_per_judge_admin	Efficiency	OutputPerJudge	0.999
cases_per_judge_noncrim	Efficiency	OutputPerJudge	1.000

Table A.3. Drop-one Spearman ρ for each of the 31 indicators in the JUSPER architecture. Bolded indicators are those with the highest individual influence (ρ < 0.99).

About ELF

The European Liberal Forum (ELF) is the official political foundation of the European Liberal Party, the ALDE Party. Together with more than 50 member organisations, we work all over Europe to bring new ideas into the political debate, to provide a platform for discussion, and to empower citizens to make their voices heard. ELF was founded in 2007 to strengthen the liberal and democrat movement in Europe. Our work is guided by liberal ideals and a belief in the principle of freedom. We stand for a future-oriented Europe that o°ers opportunities for every citizen. ELF is engaged on all political levels, from the local to the European. We bring together a diverse network of national foundations, think tanks and other experts. At the same time, we are also close to, but independent from, the ALDE Party and other Liberal actors in Europe. In this role, our forum serves as a space for an open and informed exchange of views between a wide range of di°erent actors.

About KEFIM

The Center for Liberal Studies - Markos Dragoumis (KEFIM) is Greece's foremost liberal, non-partisan, and independent think tank. It envisions Greece as a role model of economic and civil liberty that enables its citizens to pursue their dreams and aspirations. KEFIM's mission is to increase individual and economic freedoms of Greeks through the promotion of liberal ideas and policy proposals. To that end, KEFIM generates research, media content, organizes events, that aim to influence the climate of ideas in Greece. Finally, KEFIM partakes in the international policy and ideological dialogue through its participation into the Atlas Network (USA), the EPICENTER Network (Belgium) and the European Liberal Forum (Belgium). It also partners on various projects with mission-aligned organizations such as the Friedrich Naumann Foundation (Germany), Timbro (Sweden), the Cato Institute (USA), the Foundation for Economic Education (USA), and the Institute of Economic Affairs (UK).

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