The Democratic Immune System

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How Democratic Dispositions Shaped Divergent Political Trajectories in Estonia and Hungary?

Introduction:

In 1991, the Soviet Union collapsed, which ended half a century of authoritarianism in Eastern Europe and with many people living there looking hopefully forward to an age of prosperity under liberal democracies. However, 34 years later, this success story never transpired for all countries and only a handful maintained robust democracies. Plokhy (2021) reports that some Soviet republics are reverting to their authoritarian tendencies of the former Soviet Union like Belarus, Hungary, and Poland. Myre (2014) states that the only countries that successfully transitioned from a dictatorship to a liberal democracy were the Baltic states of Estonia, Latvia, and Lithuania. These were nations that lived through similar economies of socialism under the USSR, and they underwent the same political upheaval from an authoritarian regime to liberal democracies. This difference in fortunes presents a compelling question: why did some Eastern Bloc and former Soviet republics become more democratically resilient than others, although they had the same starting point? We argue that this disparity emanates from underlying differences in civic literacy and participation in these countries. Moreover, we hypothesise that higher levels of civic literacy and engagement, institutional trust, and political participation yield a strong democracy and create a shield of resilience against democratic backsliding. In this paper, we will conduct a comparative study of Estonia and Hungary from 2004 to 2020, using public data provided by the European Social Survey and the Varieties of Democracy Dataset, to help explain the paths of their divergent democracies. Our analysis may demonstrate whether pre-existing differences in civic principles can predict the success of Estonia's democracy and Hungary's illiberal turn.

Theoretical Framework:

Leveraging existing literature, this study aims to assess the democratic resilience—defined as a country's capacity to resist democratic backsliding when confronting a potential authoritarian regime—in Hungary and Estonia by developing a novel analytical framework. These two countries were selected due to their shared historical context within the Soviet sphere of influence; Estonia was a Soviet Republic, while Hungary was a satellite state. Both nations transitioned to independence around the same time, with Hungary in 1989 and Estonia in 1991, and subsequently joined the European Union in 2004 to foster peace, economic growth, and democratic consolidation.

However, their democratic trajectories have since diverged significantly. Since the election of Viktor Orbán in 2010, Hungary has experienced substantial democratic erosion. Scheppele (2022) notes that through actions such as rewriting the constitution with his two-thirds supermajority, removing independent judges, creating favourable election maps, and dismantling institutional checks and balances, Orbán's government has rendered Hungary more authoritarian than at any point since the Soviet era. In stark contrast, Estonia has emerged as a thriving democracy, distinguished by its innovative digital governance, including the e-Estonia platform that allows citizens to vote and

engage in other governmental functions such as healthcare and tax collection online, which Dhakal highlights makes Estonia's efficient and garner more trust from its people.

To test their democratic resilience, we developed three analytical pillars based on data from the European Social Survey (ESS, 2023): Civic Engagement, Institutional Trust, and Political Participation. Each pillar is grounded in established scholarly definitions.

The civic engagement index is informed by Milner's (2002) concept of civic literacy, which he defines as the ability of a society to use knowledge to make "effective political decisions" (p. 15). Our index operationalizes this using ESS (2023) questions concerning individuals' level of interest in politics and their daily consumption of political news, capturing both the intake of information and the propensity to use it.

The political participation index draws on Fox's (2014) synthesized definition, which characterizes participation as voluntary, active behaviour by individuals or groups aimed at influencing governmental institutions. Accordingly, we used an individual's voting history, as voting represents the most fundamental voluntary action to influence government.

Finally, the institutional trust index is based on the concept of political legitimacy. While Mayer et al. (1995) broadly define trust as a willingness to be vulnerable, Bornstein and Tomkins (2015) argue that trust in government is an assessment of its legitimacy, encompassing perceptions of fairness, competence, and confidence. Our index thus aggregates trust ratings for politicians, political parties, courts, and national parliaments to measure this perceived legitimacy.

These three indexes will be standardized to a 0–1 scale. Our primary hypothesis is that a country with high scores across all three indexes will demonstrate stronger democratic resilience, as it indicates an engaged, trusting, and active citizenry showcasing the existence of a strong democracy. Secondly, we posit that these scores can serve as predictive indicators for a nation's vulnerability to electing potential autocrats, a relationship we will test against V-Dem's democracy ratings (Coppedge et al., 2025).

Data and Methodology:

This study draws on two primary datasets to examine democratic resilience in Estonia and Hungary from 2004 to 2020. The European Social Survey (ESS): We utilized ESS Rounds 2–10 (2004–2020), focusing exclusively on respondents from Estonia (n=16,856) and Hungary (n=14,957), yielding a total sample of 31,813 observations. The ESS is a biennial cross-national survey measuring attitudes, beliefs, and behavioural patterns across European populations (ESS, 2023). Lastly, the Varieties of Democracy (V-Dem) Dataset: We employed the Electoral Democracy Index (v2x_polyarchy) from V-Dem version 15 as our dependent variable to measure democratic quality (Coppedge et al., 2025). This index ranges from 0 to 1, with higher values (0.8 - 1.0) indicating stronger electoral democracy.

To operationalize democratic resilience, we constructed three composite indices using ESS data, each normalized to a 0–1 scale:

Firstly, The Civic Engagement Index (CEI) was calculated as:

CEI = [(4 - PI) / 3 + TV / 7] ÷ 2, Where PI (Political Interest) is Measured on a 1–4 scale (1=Very interested, 4=Not at all interested). We reverse-coded this variable so that higher values indicate greater interest and TV (News Consumption): Daily hours spent watching political news on television with 0 being none and 7 being 3 hours or more.

Institutional Trust Index (ITI) was calculated as

ITI = [TL/10 + TP/10 + TPT/10 + TPR/10] ÷ 4 , Where each component is measured on a 0–10 scale (0=No trust at all, 10=Complete trust): and we took an average of each trust level from the respective countries for each of the four institutions named earlier.

Political Participation Index was calculated as

PPI = 2 - V, Where V was the voting rate (2-1, V=1 if voted, 2 if not).

Composite Democratic Resilience Index

We created an overall resilience measure by averaging the three component indices, where the Composite Index = (CEI + ITI + PPI) ÷ 3

Data Cleaning and Preparation

Following standard ESS protocols, we converted missing value codes (77=Refusal, 88=Don't know, 99=No answer) to missing data (NaN). These values were excluded from index calculations, with indices computed only when all component variables were present.

To enable longitudinal analysis, we calculated country-year averages for each index component and composite measure. This aggregation allowed us to track temporal trends while controlling for sampling variations across ESS rounds.

Analysis:

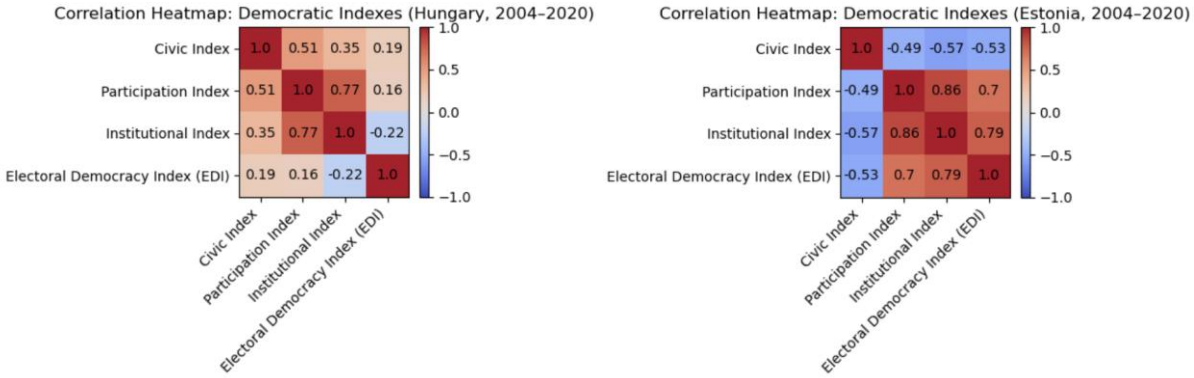


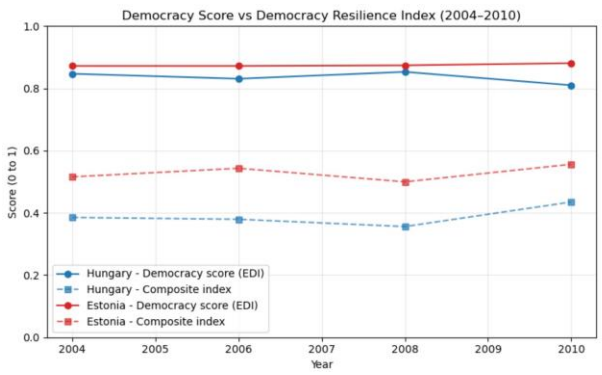
Figure 1 and 2

The correlation heatmaps above plot the individual indexes of Estonia and Hungary against their Electoral Democracy Index scores from the V-Dem dataset to test our claim that higher index values are associated with higher levels of democracy.

For Hungary, the off-diagonal cells are either light or dark orange, indicating that most indexes are positively correlated with the EDI. However, most of the correlation coefficients are below 0.5, indicating that these relationships are weak positive correlations. Moreover, the correlation coefficient between the institutional trust index and the EDI is shown to be –0.22, indicating a slight negative correlation. This is also reflected visually in the heatmap, where there are no dark red or dark blue off-diagonal cells, only light-to-mid shading. Taken together, the pattern suggests that none of the three indexes has a strong association with Hungary's EDI, and the institutional trust index appears to be negatively related. Therefore, these three indexes do not have a strong impact on Hungary's EDI, and changes in the EDI are likely influenced by other factors.

As for Estonia, many of the off-diagonal cells are darker in color (towards dark red or dark blue), indicating that the correlations between the EDI and the three indexes are stronger. For example, the correlation coefficient between Estonia's institutional trust index and the EDI is 0.7, indicating a moderate to strong positive correlation. Moreover, the heatmap also shows that there is a negative correlation between some indexes, including the civic index and the EDI. Instead of supporting the idea that "higher indexes lead to higher democracy," the Estonian results suggest that improvements in the civic index are moderately related to a decline in the EDI. This makes the civic index an outlier among the three indexes: while the others tend to show positive associations with the EDI, the civic index in Estonia is inversely related to the EDI.

Thus, the two heatmaps highlight that our main claim is false: higher values of the three indexes do not necessarily correlate with a higher democracy score. Other factors are likely at play.



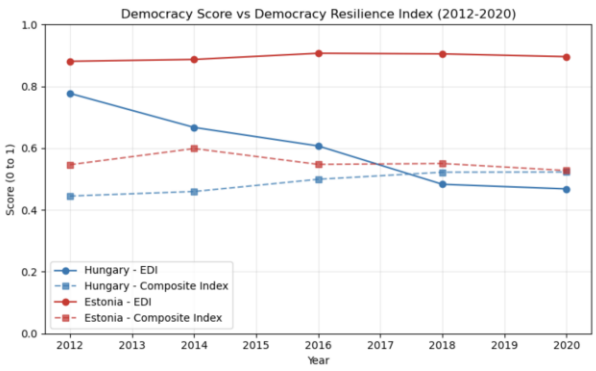


Figure 3 and 4

The graphs, Figures 3 and 4, are dual-axis time series illustrating the composite resilience index of Hungary and Estonia and their respective democracy scores against time to test whether underlying score values can help prevent the election of an autocrat.

Between 2004 and 2008, Estonia's and Hungary's democracy index from V-Dem is rather positive and stable, having similar scores varying around 0.8 to 0.9. This may reflect their recent admission to the EU and their practice of high democratic processes and protection of the rule of law under EU standards. However, Hungary's democracy score decreases between 2008 and 2010, demonstrating early signs of democratic erosion. Furthermore, the values of the composite democracy resilience index are very different between the two countries, with Estonia's score significantly higher than Hungary's, being consistently higher by about 10 – 15 percentage points between 2004 and 2010 while slightly fluctuating between 0.5 and 0.55, and Hungary's having low scores varying between 0.35 and 0.44. The two countries do have relatively low resilience scores, which may be a sign that they are emerging democracies adopting new democratic principles, which is a stark shift from their autocratic rule under the Soviets. Additionally, these scores disprove the claim that a high score of 0.8 - 1.0 equals a high level of democracy, since Estonia has a moderate score of 0.5 - 0.7 and Hungary has low scores of 0.0 – 0.4, but they both initially had a high democracy score.

Observing Figure 4, a predictable pattern appears. The democracy score of Estonia remains high, maintaining its early-2000s values. However, Hungary's scores show a clear decrease from 0.79 to 0.55 in response to Orbán's electoral victory and his authoritarian practices throughout the 2010s. This further illustrates that underlying resilience values may have been a factor in predicting the democratic health of the preceding decade, as higher values are associated with a country being less likely to elect autocrats and prevent democratic backsliding. In the 2000s, the resilience values of Estonia were moderate and Hungary's were weak, and these weak values correspond with the sharp decrease in Hungary's democracy score, hence proving our secondary hypothesis.

Moreover, during the 2010s, there was an increase in the resilience score of Hungary from 0.49 to around 0.55 at the end of the decade. Estonia's score decreased from 0.59 to 0.55, equalling Hungary's. However, it should be noted that in 2016, the measure of one of the components for the civic index changed when the number of hours that Estonians watch TV for their political news decreased, contrasted with a notable increase in Hungary's consumption, as shown

in Figure 5 below. This suggests that Estonians were finding their news via another medium that was not tracked by the ESS dataset. Overall, this further demonstrates that the resilience value has from minimal to no direct impact on the current state of democracy of a country.

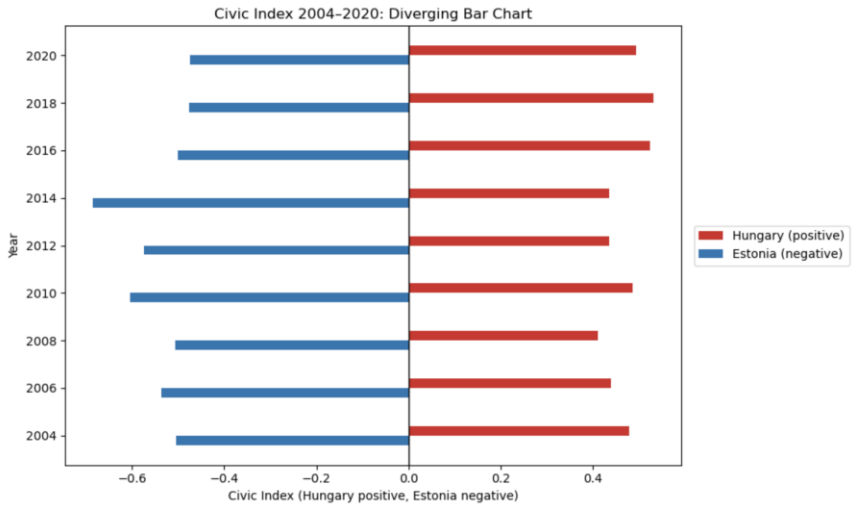


Fig 5.

Discussion:

The results from our comparative analysis of Estonia and Hungary reject our main hypothesis that posited that higher levels of civic engagement, institutional trust, and political participation will yield a high-performing democracy. This conclusion is most clearly demonstrated by the negative correlation between Estonia's civic engagement index and its Electoral Democracy Index from the heat maps, which demonstrated that even a notable democracy like Estonia does not exhibit a positive relationship between its civic index and its democratic quality. This suggests that there could be another factor that we may have overlooked, because according to Dhakal (2025), Estonia is considered one of the most democratically engaged countries in the world, a dimension we may not have fully captured in our civic index. We could have considered additional statistics such as the number of political petitions signed (physical or digital), attendance at town hall meetings, or the diversity of news sources consumed. These metrics would likely have raised the civic index of Estonia and could have resulted in a positive correlation with its Electoral Democracy Index. Furthermore, our study only considered two countries, which is a significant limitation. We recommend applying this same three-pillar framework to a larger set of post-communist countries to see if the relationship between civic literacy and democratic resilience holds more consistently with a larger sample.

In contrast with our main hypothesis, our second hypothesis, which proposed that these index scores could serve as a predictor of a country's vulnerability to electing an autocrat, is strongly supported. Between 2004 and 2010, Hungary's resilience scores were consistently and significantly weaker than Estonia's, which accurately forecast Hungary's vulnerability to democratic erosion after 2010. Estonia's consistently higher resilience index, conversely, predicted its sustained democratic stability. This demonstrates that the resilience index can effectively identify a democratic

immunity shield that may resist authoritarian pressures that successfully undermined democracy in Hungary. Therefore, we suggest that fostering greater public engagement in democracies—through active voting, staying informed via non-partisan news, and electing astute leaders—is crucial for building a prosperous and resilient nation.

Conclusion:

This study developed a framework of democratic dispositions—civic engagement, institutional trust, and political participation—to explain divergent democratic trajectories in Estonia and Hungary. We found that the relationship between these dispositions and democracy is complex and context dependent. In Estonia, high institutional trust and political participation were associated with strong democracy, but traditional civic engagement was not. In Hungary, the dispositions were weakly related to democracy, suggesting that once backsliding begins, other factors dominate.

These findings have implications for the study of democratic resilience. First, the measures of democratic dispositions must be adapted to the changing nature of citizen engagement, especially in digital democracies. Second, the protective effect of democratic dispositions may be limited when faced with determined authoritarian leaders who can change the rules of the game.

Future research should explore more nuanced measures of civic engagement, including digital participation, and examine a broader set of cases to determine the conditions under which democratic dispositions can indeed act as a bulwark against backsliding.

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