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Successful PISA Stories in the EU: How some Member States have been able to improve their performance over time

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PISA Success Stories – Exploring Equity and
High Performance through PISA Brussels

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Outline

1. Objectives of the study
2. Methodological approach
3. Selection of countries
4. Key findings
5. Limitations and challenges



1. Objectives of the study

The study had two main goals:

- investigate to what extent individual, school and system factors can explain differences in educational outcomes;
- analyse how national reforms have contributed to PISA success stories in specific countries overtime and identify patterns and conditions for success factors.



2. Methodological approach

A mixed method approach has been used:

1. statistical approach to analyse the effects of selected reforms (*ULiège*)
2. iterative stakeholder consultations conducted during the study (*PPMI*).



3. Selection of countries

Defining a PISA ‘success story’ is challenging

Criteria for inclusion: a combination of effectiveness and equity

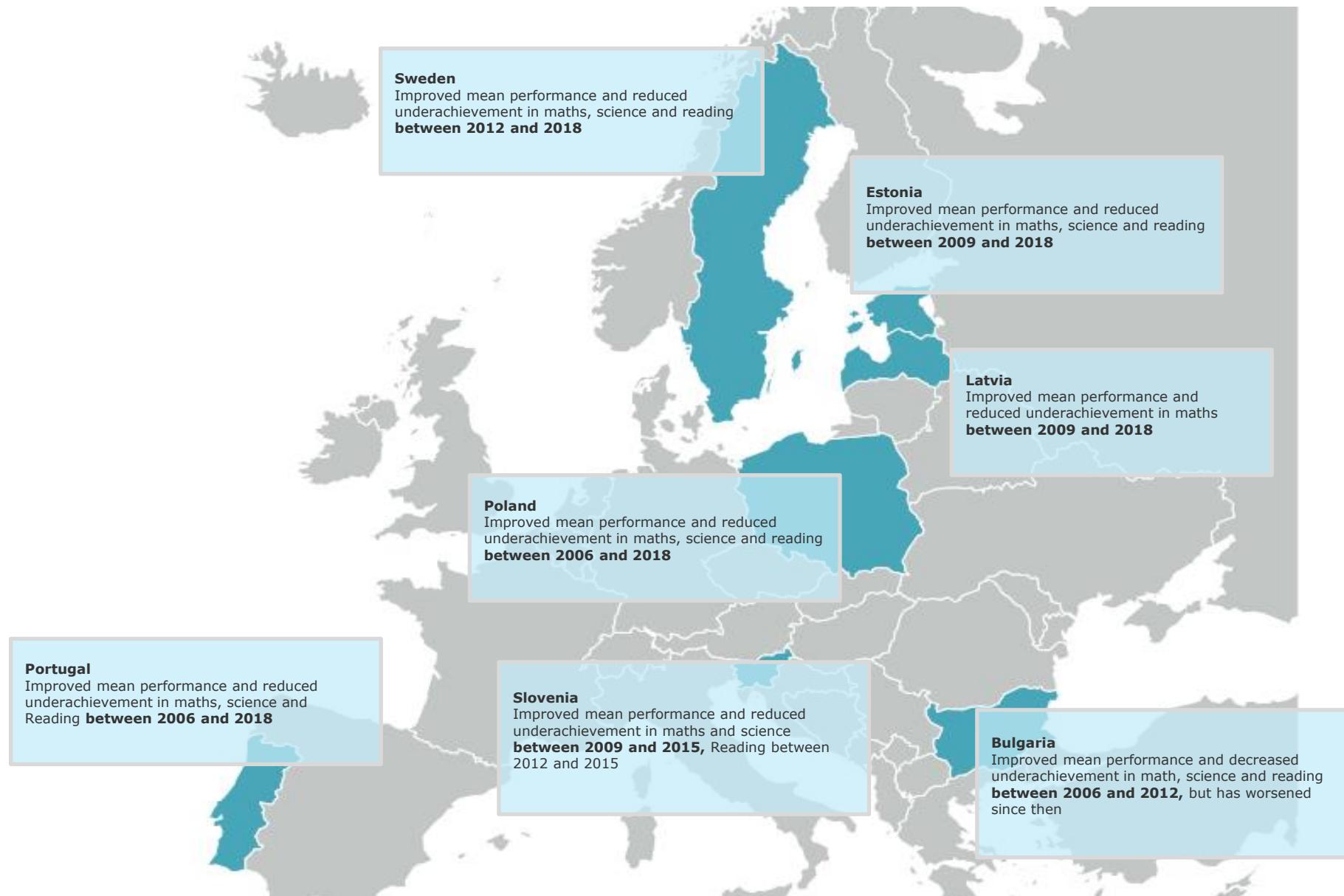
1. increased performance in at least one of the domains over time (from 2009 to 2018)
2. equity improved or at least remained stable.

3. Selection of countries

Challenges

- From 2009 to 2018, **several EU Member States have improved their results in at least one domain**. However in **most cases the observed improvements were minimal** (statistically not significant).

In this light, **explaining a ‘PISA success story’ is by definition challenging when the success** (i.e. observed improvement) **is rather limited.**



4. Key findings: Which factors are associated with PISA performance?

The preliminary statistical analyses (descriptive statistics and multivariate regression modelling using PISA 2018 in maths) carried out confirmed the findings from the literature on the key determinants of students' academic success (as measured by PISA).

Which factors are associated with PISA performance?

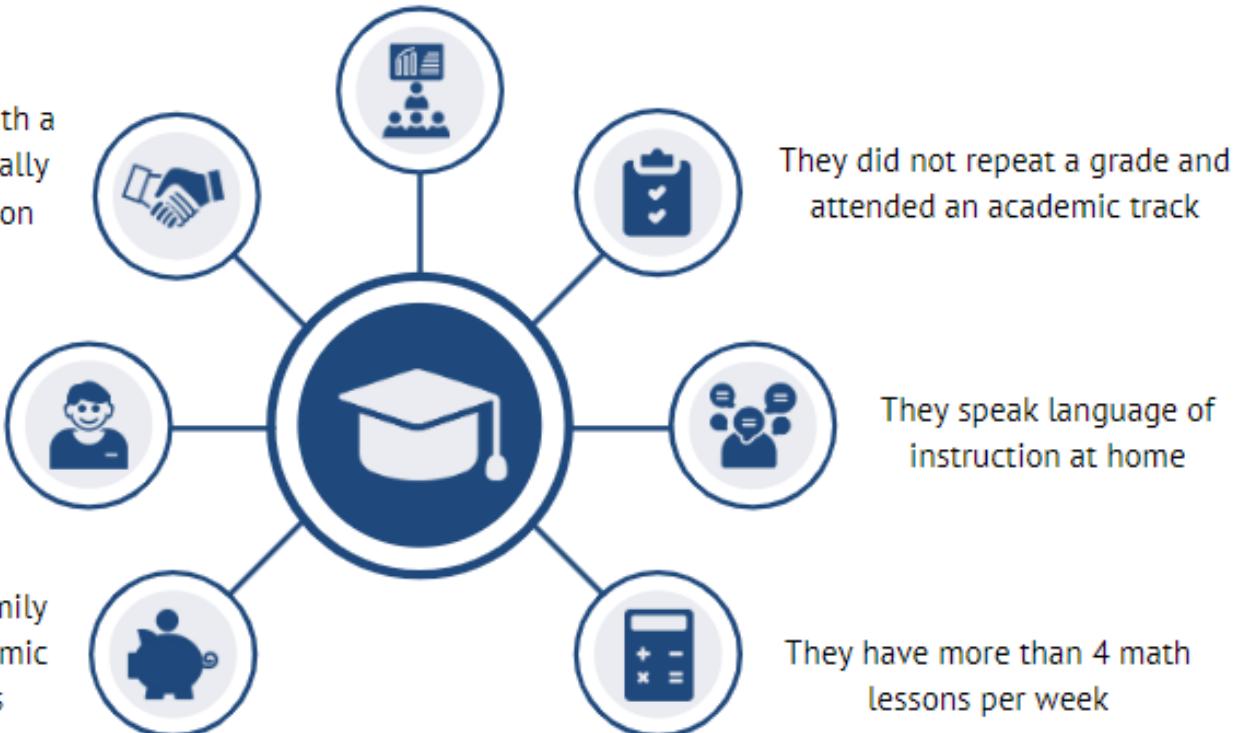
Students in Europe perform better in PISA (math) if:

They attend a school with a positive climate (disciplinary climate,
high sense of belonging, close cooperation among students)

They attend school with a
more socio-economically
privileged composition

They are boys

They come from a family
with high socioeconomic
and cultural status



Which factors are associated with PISA performance?

- Most of the ‘explanatory’ variables are not amenable to change
- But their effect can be alleviated by educational policies (such as policies targeting ‘vulnerable students’)
- These analyses cannot **explain** why the PISA performance increased.

Which factors can explain the improvement in PISA performance?

Second step of the quantitative approach was applied in a limited number of countries (3) where the conditions to apply statistical models allowing for causal inferences (PSM and DiD) were met.

The basic assumption of these models is to match students with a similar profile from two PISA cycles (f.i. 2009 and 2018) and to compare the performance of these two similar groups before and after a reform was implemented.

Did the students who benefitted from the reform perform better than the ones who did not?

Using this approach, evidence of a positive effect was found for:

- **introduction of a compulsory year of pre-school education** in [Bulgaria](#).
- **delaying vocational education by one year** in [Poland](#) (Jakubowski, Patrinos, Porta and Wiśniewski, 2016).
- **reduction of grade repetition** (PNPSE programme) in [Portugal](#).

What are the promising and possibly influential reforms?

Findings from the quantitative and/or the qualitative approach:

- **Structural changes to education system:** early childhood education, length of compulsory education, reorganisation of school networks.
- **Measures to improve equity:** delaying age of tracking, reducing grade repetition, enhancing access to particular levels of education, offering support for vulnerable students.
- **Curricular reforms:** competency-based curricula, emphasis on well-being and problem solving
- **Data-based decision making:** reinforcement of monitoring and alignment of national assessment frameworks

Strong evidence is lacking.

The only two EU countries in which a consistent improvement was observed (Poland and Portugal) have undertaken a broad and systemic reform including the four aspects (structure, equity, curricula and assessment).

What makes the reforms promising and potentially influential?

- They are implemented in a comprehensive well-sequenced set of measures, including building capacity of relevant stakeholders to implement the change.
 - They leave enough preparation time.
 - They depend on the existence of appropriate institutions capable of supporting the reforms from decision to implementation.
 - They are focusing on both equity and quality, rather than prioritising one at the expense of the other.
 - They build on the reached consensus and active involvement of a range of stakeholders including students, parents, teachers, employers, and trade unions.
 - They are carefully monitored, decisions are based on data, and adjusted to address the evolving needs of students and schools.
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5. Limitations and challenges

Strengthening evidence-based education (EBE) in the EU countries is necessary

- Many evaluations of reforms are still based on perceptions (satisfaction, opinions), not evidence-based.
- Reform implementation should be planned in several steps: piloting and assessment of the outcomes, adjusting, scaling up, monitoring.

5. Limitations and challenges

Investing in longitudinal studies covering a broad span of education

Most of the national datasets and ILSA are cross-sectional and not designed to study the impact of reforms.

There is a crucial need for longitudinal data (e.g. Germany/PISA shock)

- Some countries increased the capacity of PISA to inform educational policies:
 - By adding a longitudinal component to PISA (e.g. Germany);
 - PISA follow-up studies (Australia, Canada and Denmark).

Much more information by country is
available in the report

Thank you for your attention

