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REGIONAL DEVELOPMENT AND CROSS-BORDER COOPERATION
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National Competitiveness and Regional Development in the Context of EU Integration

Jelena J. Stanković

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Reserach description

- World Economic Forum data: The Global Competitiveness Reports from 2007-2008 to 2017–2018
- 33 countries included
- Methods of data visualization and statistical analysis (One-way ANOVA and Post Hoc Test) are conducted
- **Research question:** Can candidate countries become competitive as EU countries or is the accession process a booster of competitiveness?

EU countries, accession candidates and potential accession candidates included in sample

Group	N	Countries
EU 15	15	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
EU members since 2004	10	Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia
EU members since 2007	2	Bulgaria, Romania
EU member since 2013	1	Croatia
Candidates/ Potential Candidates	5	Albania, Bosnia and Herzegovina, FYR Macedonia, Montenegro, Serbia

Cumulative changes (in %) in pillars' scores for the period from Global Competitiveness Report 2007-2008 to Global Competitiveness Report 2017-2018

Group of countries	1st pillar	2nd pillar	3rd pillar	4th pillar	5th pillar	6th pillar	7th pillar	8th pillar	9th pillar	10th pillar	11th pillar	12th pillar
EU15	-4.43	3.43	-0.31	4.10	5.05	-1.60	3.98	-18.14	19.93	2.23	-1.00	5.61
EU members since 2004	-4.07	15.13	6.74	4.50	5.58	2.52	-1.45	-12.56	31.90	6.23	-1.78	3.99
EU members since 2007	7.87	43.84	11.91	0.86	11.06	6.75	-1.90	-3.16	54.93	8.21	-3.60	5.75
EU members since 2013	-10.59	17.74	1.08	6.01	5.42	-1.46	-14.09	-14.49	45.50	4.99	-7.72	-14.35
Candidates/ Potential candidates	7.10	48.46	-8.80	6.41	27.09	12.45	-4.72	-7.21	43.75	19.05	6.11	14.80
Total	-2.08	13.43	1.81	4.55	8.44	2.15	0.54	-13.98	29.05	6.28	-0.11	6.40

1st pillar: Institutions

2nd pillar: Infrastructure

3rd pillar: Macroeconomic environment

4th pillar: Health and primary education

5th pillar: Higher education and training

6th pillar: Goods market efficiency

7th pillar: Labour market efficiency

8th pillar: Financial market development

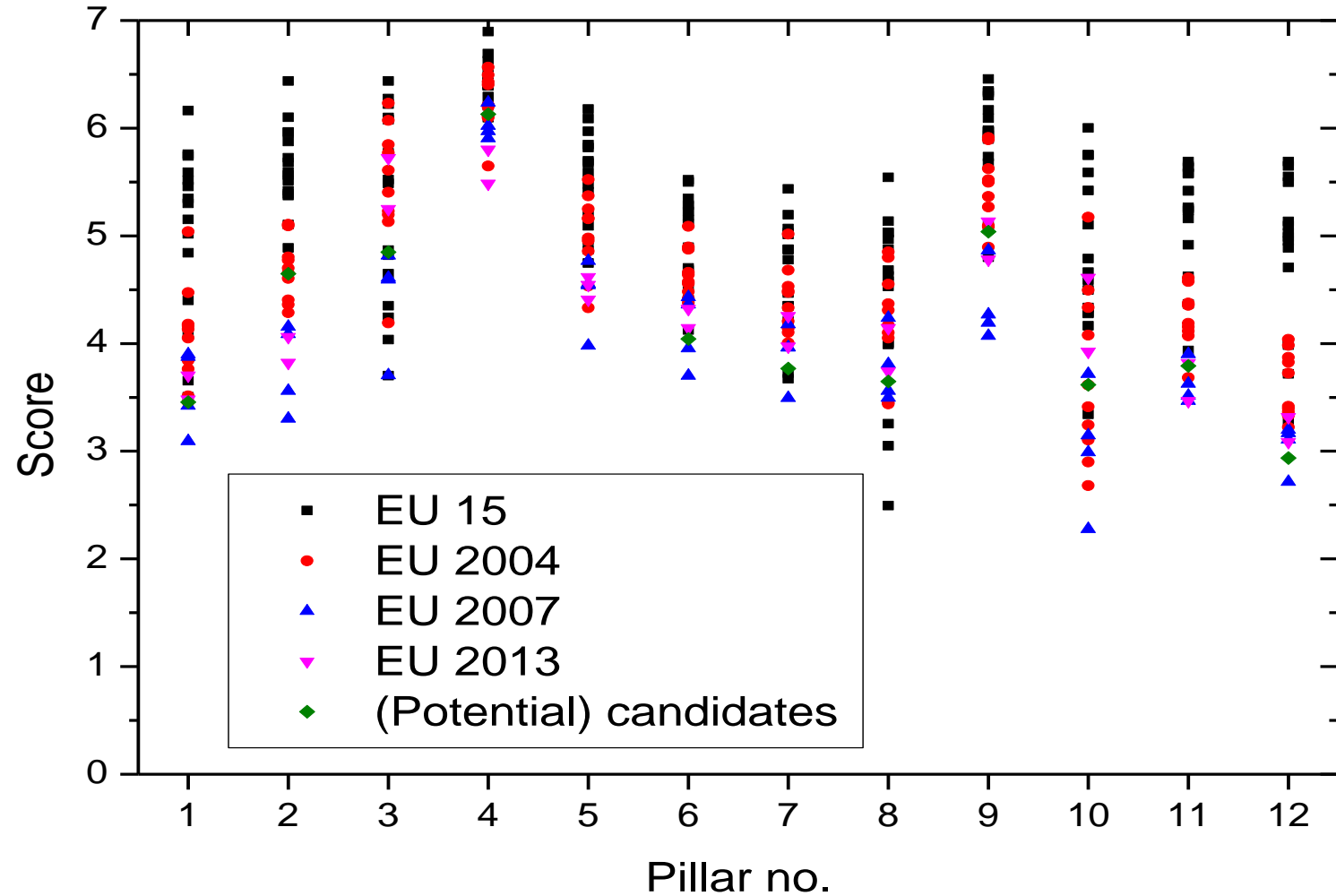
9th pillar: Technological readiness

10th pillar: Market size

11th pillar: Business sophistication

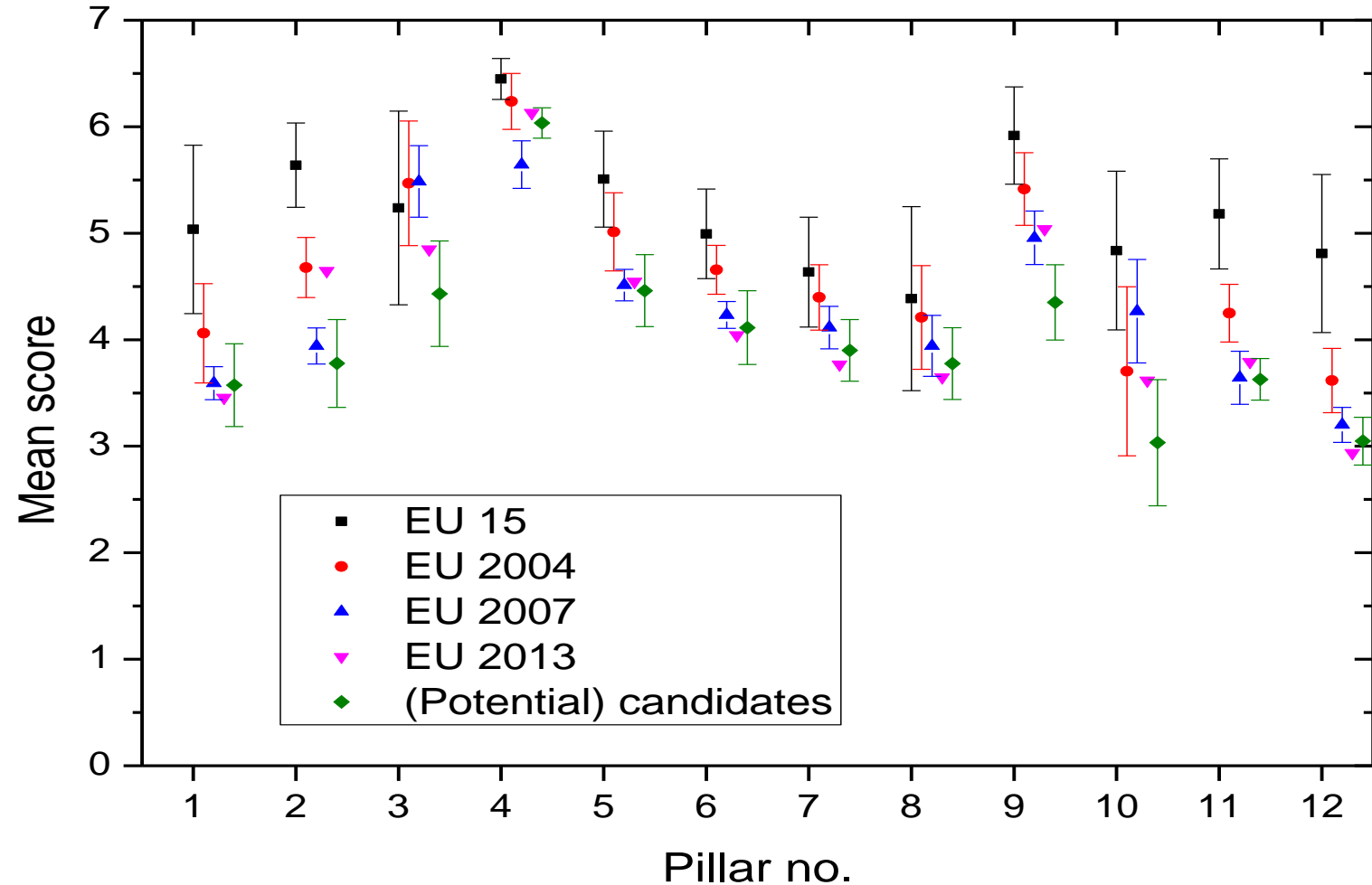
12th pillar: Innovation

Pillars of Competitiveness – Visualized Data



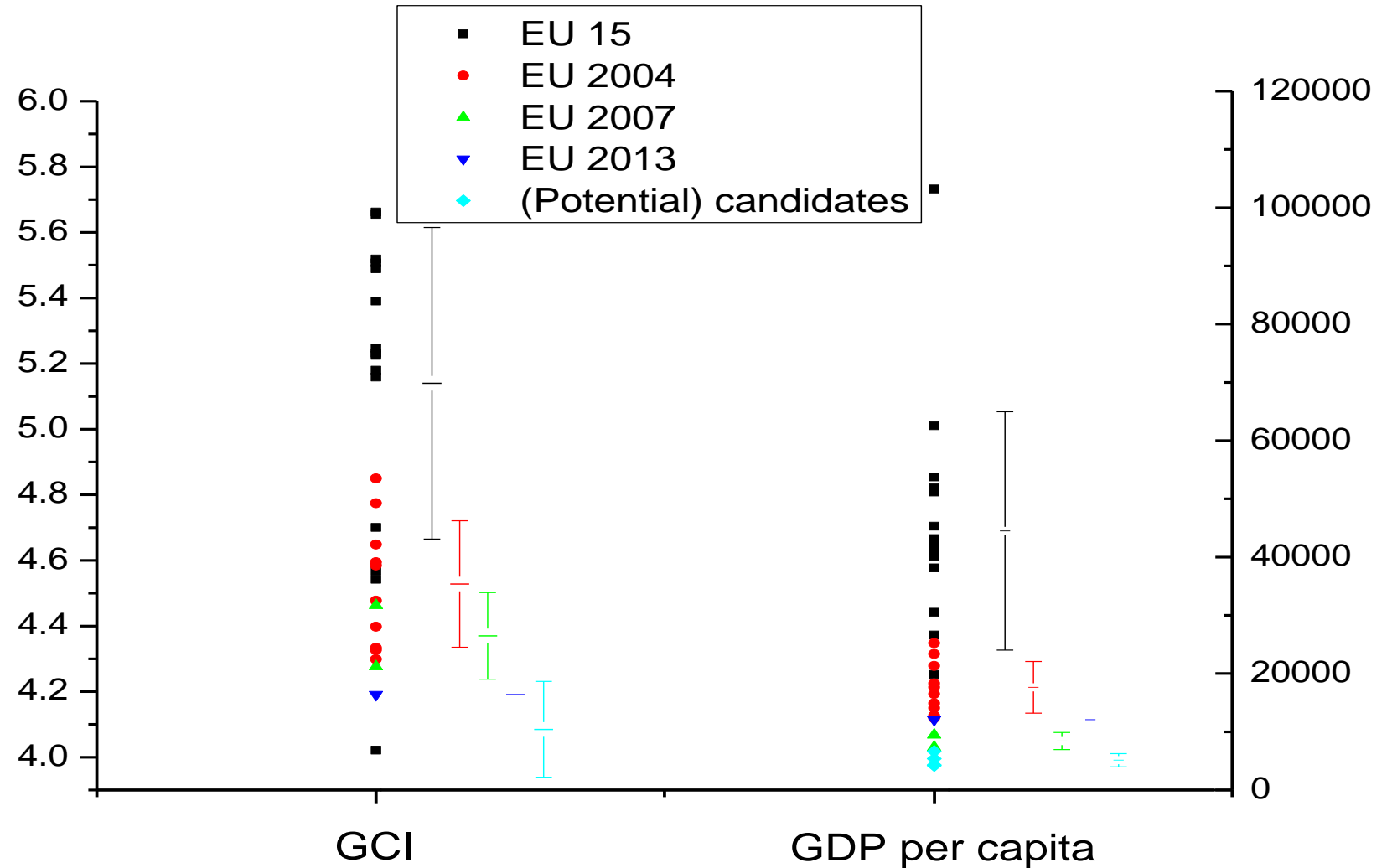
- 1st pillar: Institutions
- 2nd pillar: Infrastructure
- 3rd pillar: Macroeconomic environment
- 4th pillar: Health and primary education
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- 11th pillar: Business sophistication
- 12th pillar: Innovation

Visual comparison of means and sd



- 1st pillar: Institutions
- 2nd pillar: Infrastructure
- 3rd pillar: Macroeconomic environment
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GCI and GDP per capita



Results of One-way ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
1st pillar: Institutions	Between Groups	12.147	4	3.037	7.320	.000
	Within Groups	11.201	27	.415		
	Total	23.347	31			
2nd pillar: Infrastructure	Between Groups	15.480	4	3.870	30.434	.000
	Within Groups	3.433	27	.127		
	Total	18.914	31			
3rd pillar: Macroeconomic environment	Between Groups	3.382	4	.846	1.470	.239
	Within Groups	15.532	27	.575		
	Total	18.914	31			
4th pillar: Health and primary education	Between Groups	1.509	4	.377	8.140	.000
	Within Groups	1.252	27	.046		
	Total	2.761	31			
5th pillar: Higher education and training	Between Groups	5.176	4	1.294	7.898	.000
	Within Groups	4.424	27	.164		
	Total	9.600	31			
6th pillar: Goods market efficiency	Between Groups	3.567	4	.892	7.254	.000
	Within Groups	3.319	27	.123		
	Total	6.886	31			
7th pillar: Labour market efficiency	Between Groups	2.391	4	.598	3.327	.024
	Within Groups	4.852	27	.180		
	Total	7.243	31			
8th pillar: Financial market development	Between Groups	1.676	4	.419	.871	.494
	Within Groups	12.991	27	.481		
	Total	14.667	31			
9th pillar: Technological readiness	Between Groups	8.757	4	2.189	13.453	.000
	Within Groups	4.394	27	.163		
	Total	13.150	31			
10th pillar: Market size	Between Groups	14.335	4	3.584	6.568	.001
	Within Groups	14.732	27	.546		
	Total	29.067	31			
11th pillar: Business sophistication	Between Groups	12.497	4	3.124	18.515	.000
	Within Groups	4.556	27	.169		
	Total	17.053	31			
12th pillar: Innovation	Between Groups	17.224	4	4.306	13.342	.000
	Within Groups	8.714	27	.323		
	Total	25.938	31			
GCI - Global Competitiveness Index	Between Groups	5.136	4	1.284	9.694	.000
	Within Groups	3.576	27	.132		
	Total	8.713	31			
GDP per capita (US\$)	Between Groups	8,261,164,923.431	4	2,065,291,230.858	9.216	.000
	Within Groups	6,050,768,508.311	27	224,102,537.345		
	Total	14,311,933,431.742	31			

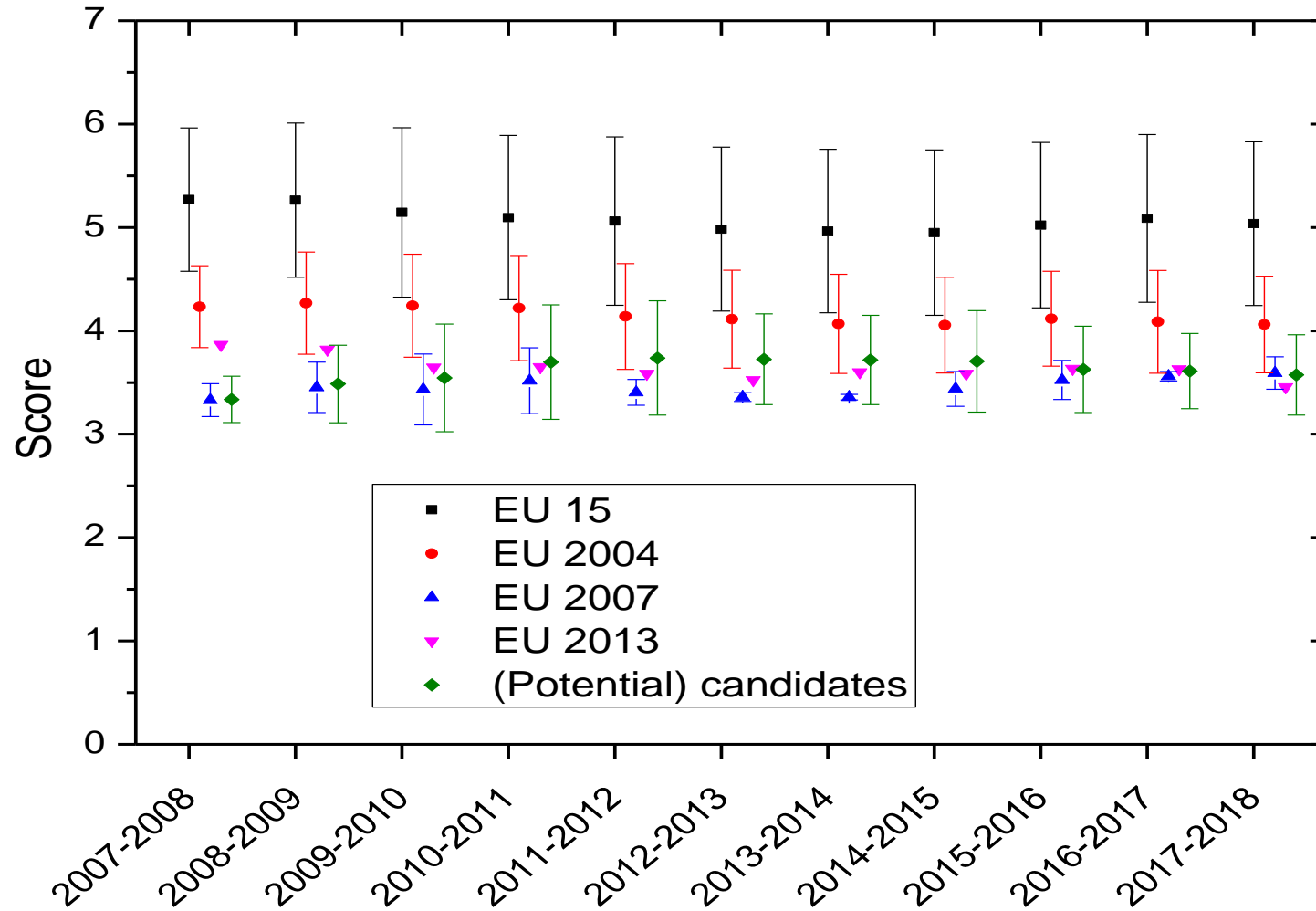
Post Hoc Test:

Multiple Comparisons of pillars' scores

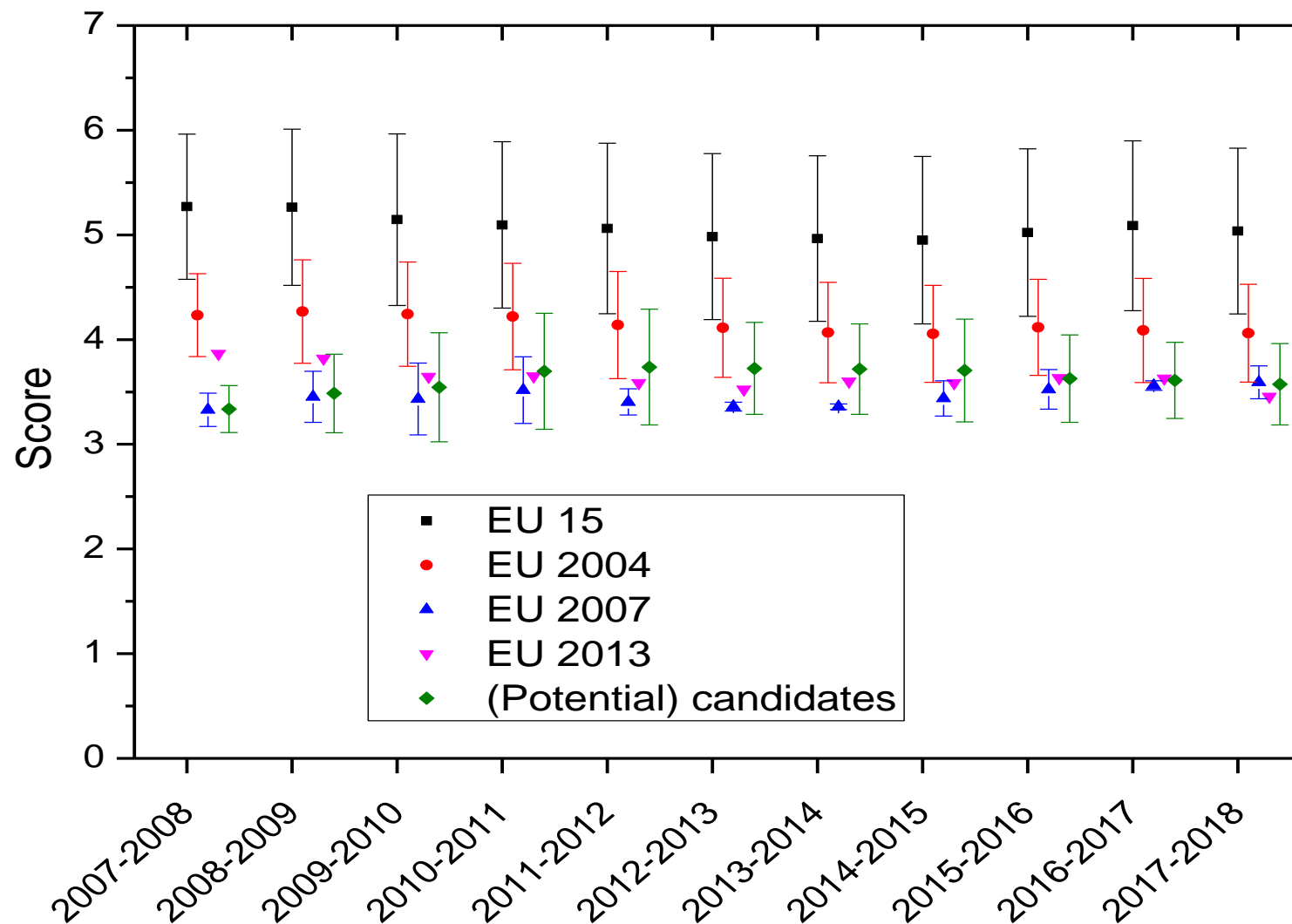
LSD							
Dependent Variable	(I) Accession Status	(J) Accession Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
1st pillar: Institutions	EU 15	EU 2004	0.975*	0.263	0.001	0.435	1.514
		EU 2007	1.444*	0.485	0.006	0.449	2.439
		Can./poten. can.	1.463*	0.362	0.000	0.719	2.206
	EU members since 2004	EU 2007	0.469	0.499	0.355	-0.554	1.493
		Can./poten. can.	0.488	0.381	0.211	-0.294	1.270
	EU members since 2007	Can./poten. can.	0.019	0.558	0.974	-1.126	1.163
2nd pillar: Infrastructure	EU 15	EU 2004	0.961*	0.146	0.000	0.662	1.259
		EU 2007	1.697*	0.268	0.000	1.147	2.249
		Can./poten. can.	1.862*	0.201	0.000	1.450	2.274
	EU members since 2004	EU 2007	0.737*	0.276	0.013	0.170	1.304
		Can./poten. can.	0.901*	0.211	0.000	0.469	1.334
	EU members since 2007	Can./poten. can.	0.164	0.309	0.599	-0.469	0.798
5th pillar: Higher education and training	EU 15	EU 2004	0.495*	0.165	0.006	0.157	0.835
		EU 2007	0.994*	0.305	0.003	0.370	1.620
		Can./poten. can.	1.046*	0.228	0.000	0.580	1.514
	EU members since 2004	EU 2007	0.499	0.314	0.123	-0.144	1.142
		Can./poten. can.	0.551*	0.239	0.029	0.060	1.042
	EU members since 2007	Can./poten. can.	0.052	0.351	0.883	-0.667	0.771
7th pillar: Labour market efficiency	EU 15	EU 2004	0.237	0.173	0.181	-0.117	0.593
		EU 2007	0.521	0.319	0.114	-0.133	1.176
		Can./poten. can.	0.735*	0.239	0.005	0.246	1.224
	EU members since 2004	EU 2007	0.283	0.328	0.395	-0.390	0.957
		Can./poten. can.	0.497	0.251	0.058	-0.017	1.012
	EU members since 2007	Can./poten. can.	0.213	0.367	0.566	-0.540	0.967
11th pillar: Business sophistication	EU 15	EU 2004	0.932*	0.168	0.000	0.588	1.276
		EU 2007	1.538*	0.309	0.000	0.904	2.173
		Can./poten. can.	1.552*	0.231	0.000	1.079	2.027
	EU members since 2004	EU 2007	0.606	0.318	0.068	-0.047	1.259
		Can./poten. can.	0.620*	0.243	0.017	0.122	1.119
	EU members since 2007	Can./poten. can.	0.014	0.356	0.968	-0.715	0.745
12th pillar: Innovation	EU 15	EU 2004	1.192*	0.232	0.000	0.717	1.669
		EU 2007	1.608*	0.428	0.001	0.731	2.486
		Can./poten. can.	1.761*	0.320	0.000	1.105	2.417
	EU members since 2004	EU 2007	0.416	0.440	0.353	-0.487	1.319
		Can./poten. can.	0.568	0.336	0.102	-0.121	1.258
	EU members since 2007	Can./poten. can.	0.152	0.492	0.759	-0.857	1.162

*. The mean difference is significant at the 0.05 level.

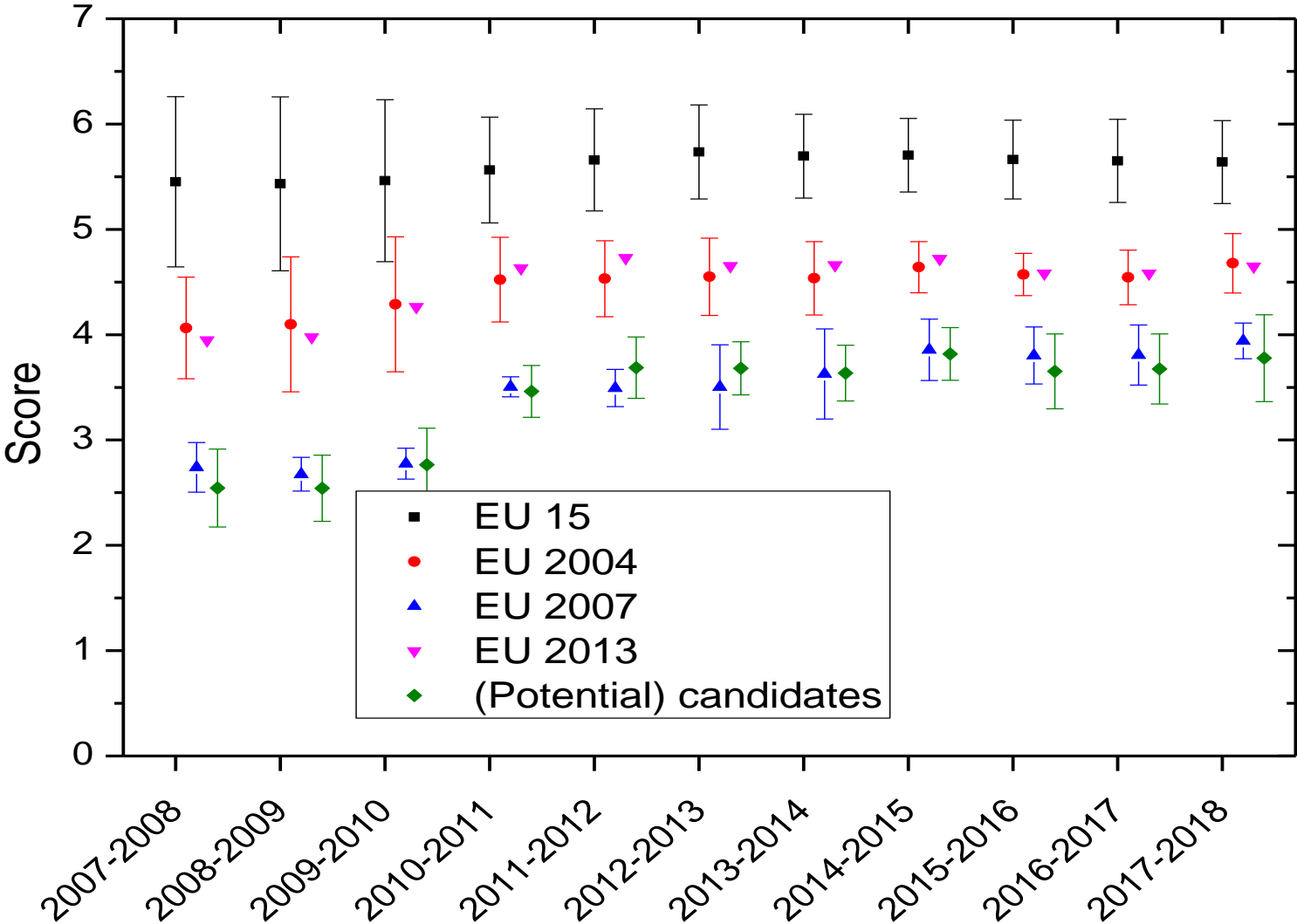
1st pillar: Institutions



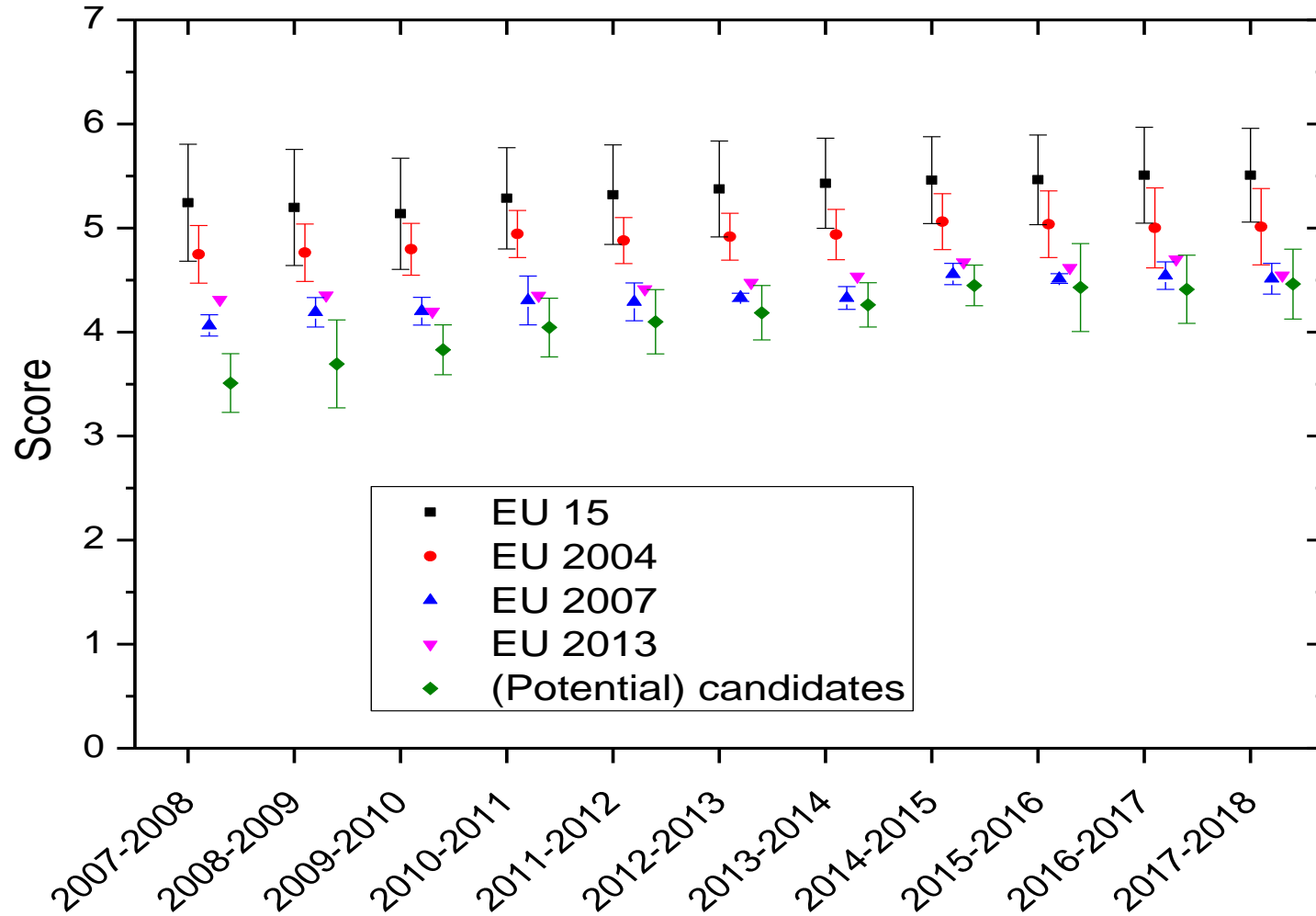
1.18 Strength of auditing and reporting standards, 1-7 (best)



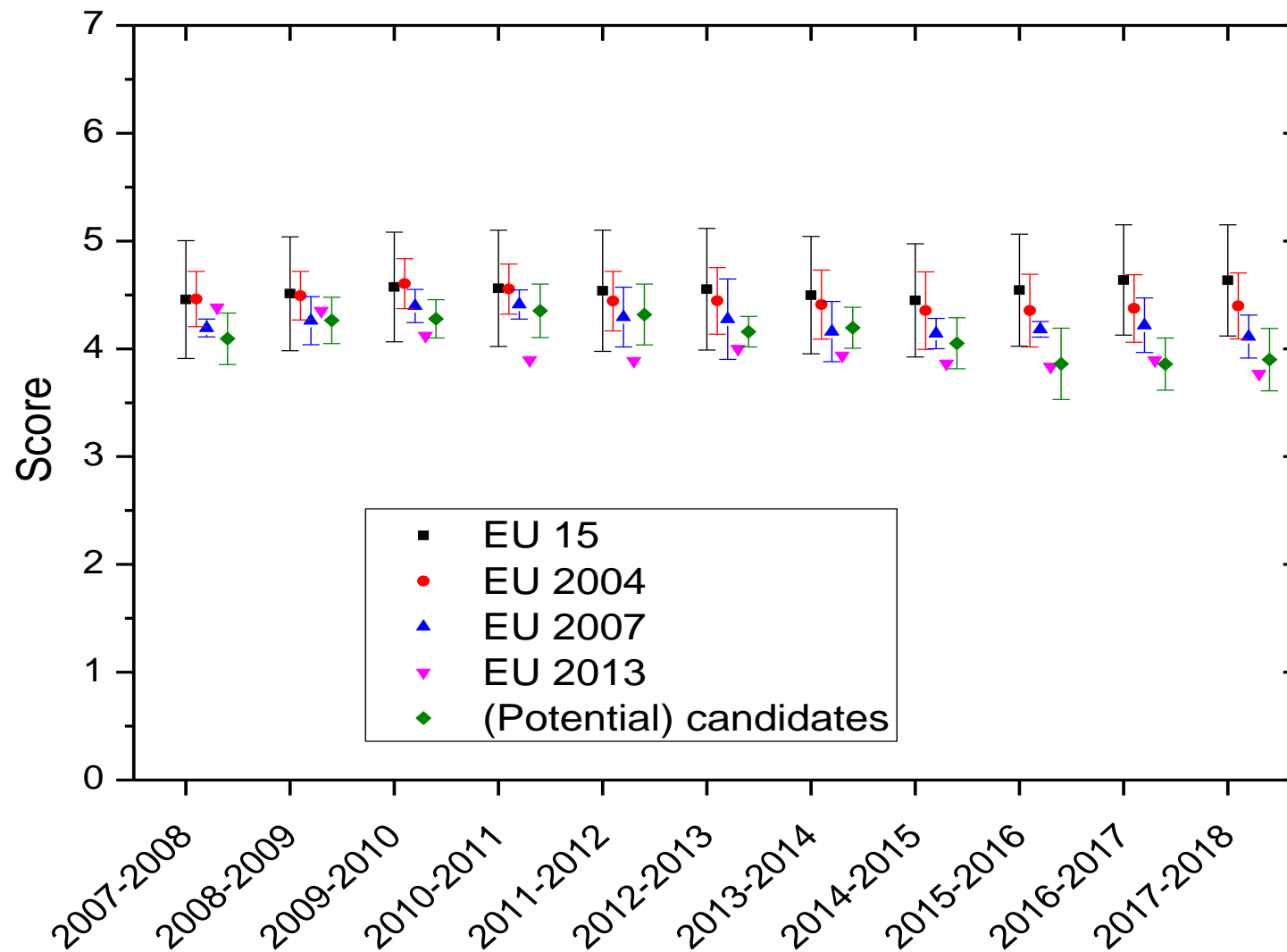
2nd pillar: Infrastructure



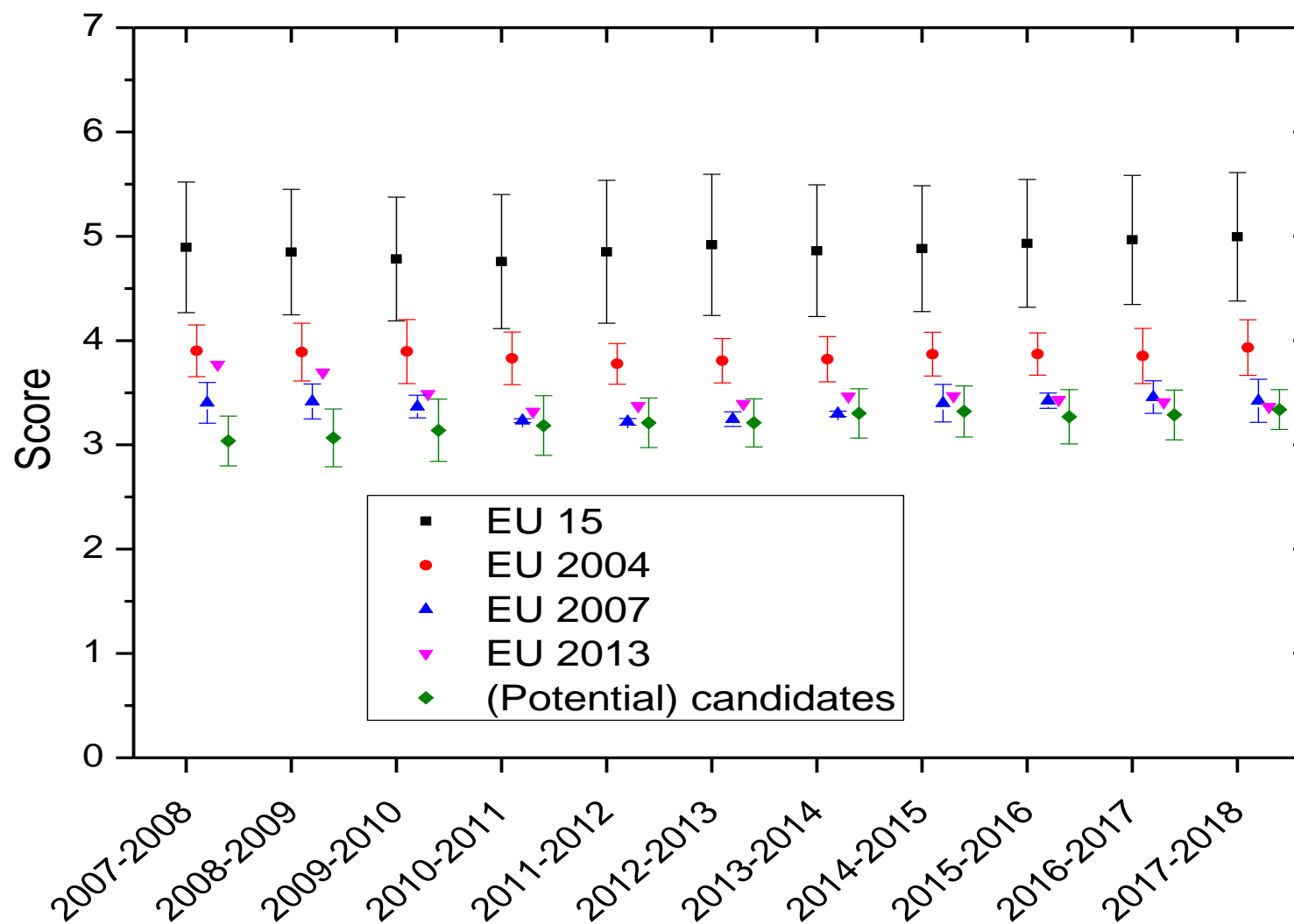
5th pillar: Higher education and training



7th pillar: Labour market efficiency



Innovation and sophistication factors



Conclusion

- Regardless of the improvement in scores of the GCI pillars, candidate countries and potential candidates are still significantly lagging behind EU countries;
- On the other hand, the differences between the EU new member states and the candidate or potential candidate countries for EU membership are not so accentuated and in most cases not statistically significant, especially if a comparison is being made between EU member states since 2007 and candidate countries.

Contact details:

Jelena Stanković

Ekonomski fakultet Niš, Trg kralja Aleksandra Ujedinitelja 11, 18000 Niš

E-mail: jelena.stankovic@eknfak.ni.ac.rs

THANK YOU FOR YOUR ATTENTION