11th International Evaluation Conference

Assessment of Cohesion Policy impact on the development of Slovakia (by econometrical model)

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- Presented paper is based on previous work of authors on “Assessment of Cohesion Policy Impacts on the Development of Slovakia (by application of suitable econometric model)” published in *July 2014* by Government office of Slovak republic and first update finished in *July 2015*

Structure of presentation

- Regional Model Hermin
- Ex-post vs. Ex ante assessment
- General results
- Influence of SF and CF on employment
- Structure of created employment
- Sustainability of created jobs
- Conclusion and discussion

Motivation

- Within the programming period of years 2007 – 2013, as part of the cohesion policy almost 11.5 billion EUR was allocated for the Slovak Republic (around 18 % of 2007 GDP)/ needed co-financing
- Ex-post analysis of NSRF in Slovak regions using regional HERMIN model
- Expected significant effect on additional employment
- First such analysis in Slovak conditions
- First application of HERMIN methodology in NUTS3 regions
- 13 evaluation questions

Applied Methodology

- Regional econometric model HERMIN (J. Bradley): 8 models of NUTS 3 regions + aggregate national model – based on model developed by WARR Poland)
- Each regional model has 71 linear and 145 non linear equation
- 2 steps solution – calibration of parameters, estimation of model

Main blocks:

- Supply side block
- Absorption side block
- Income distribution block

Regional disagregation of statistical data from ITMS

- Defined on the level of OP, or in some cases priority axis
- Disccussed with managing authorities

Sources of implemented financial funds

- EU
- State budget
- Private funds

Applied Methodology

Sectors:

- Agriculture (exogenous)
- Industry
- Construction
- Market services
- Non-market services (mainly exogenous)

Implementation areas

- Physical infrastructure
- Human capital
- Direct aid
  - R&D
  - Services
  - Industry

Scenarios

Baseline scenario -> with SF and CF implementation -> real state

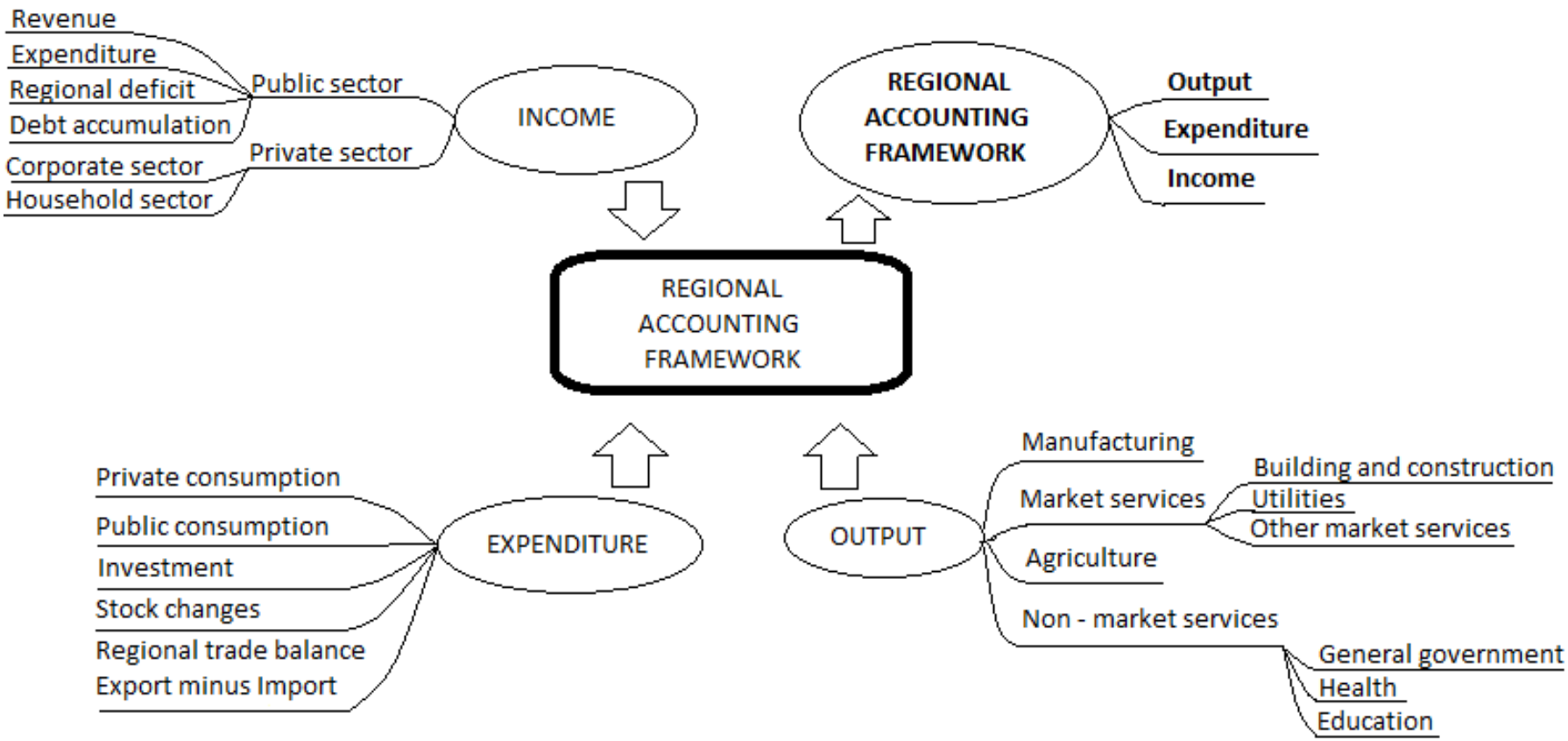
Alternative scenario -> with SF and CF implementation (expected level of implementation in 2014 -2015 at 89 % of total programming period allocation) – significant delay in drawing

Limitations:

Financial allocations based on specific implementation areas allows only indirect linkage with production of sectors

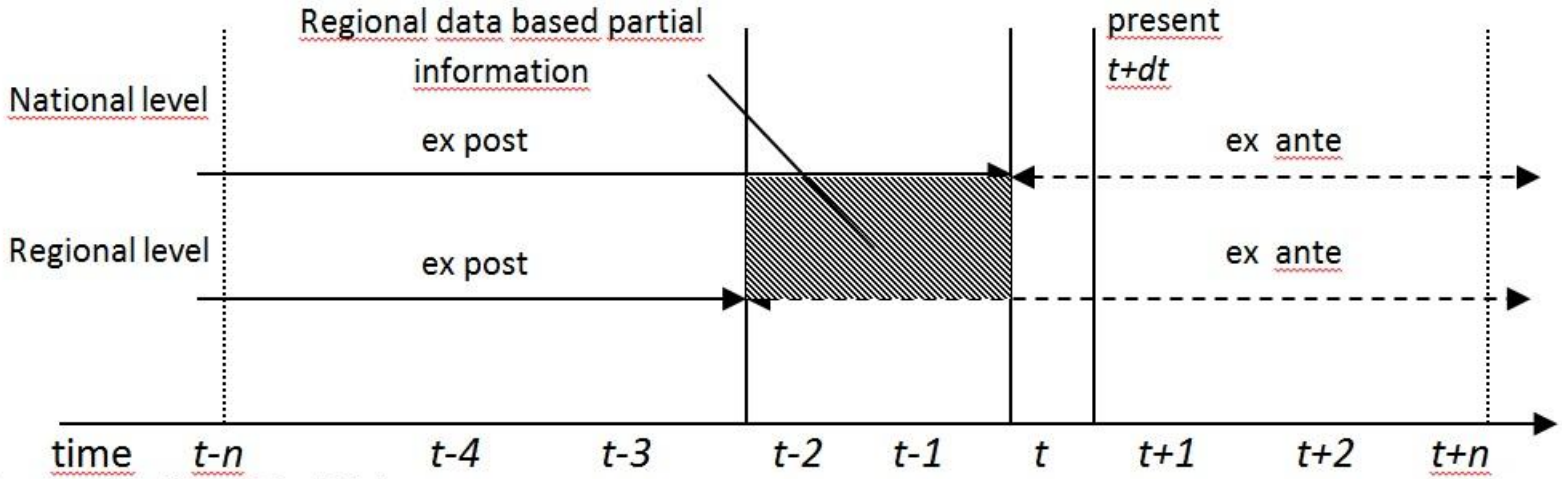
Missing regional spill-over effects – National model works as proxy for theese effects

Structure of Regional HERMIN Framework



Source: Zaleski (2009)

Data limitations at regional level



Source: Radvanský, 2014

- Significant issue was calibrating information about intra-regional trade

Slovak self-government regions at NUTS III level (8 VÚC)

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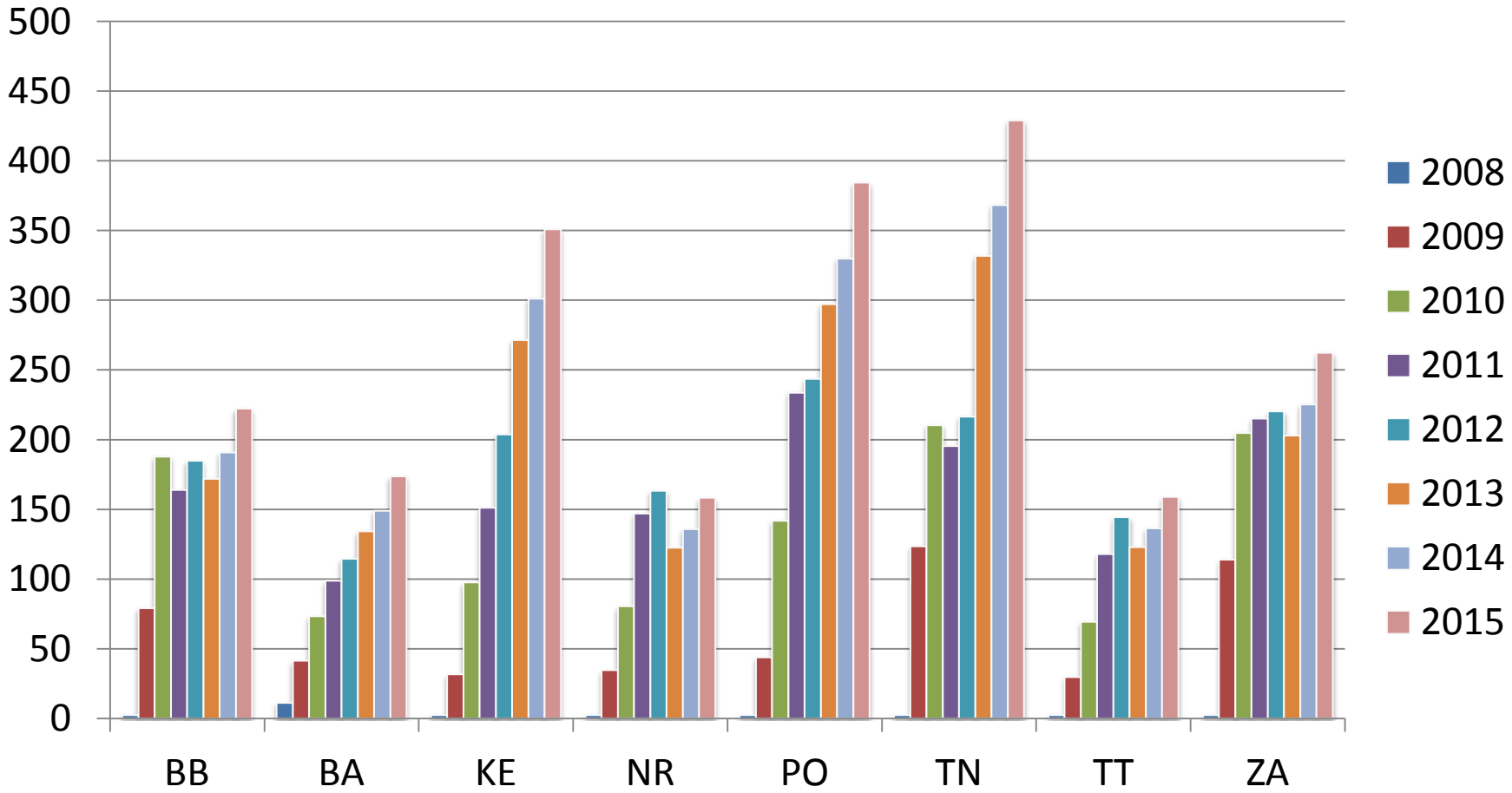
Drawing of SF and CF, million EUR, scenario 89 % (2014)



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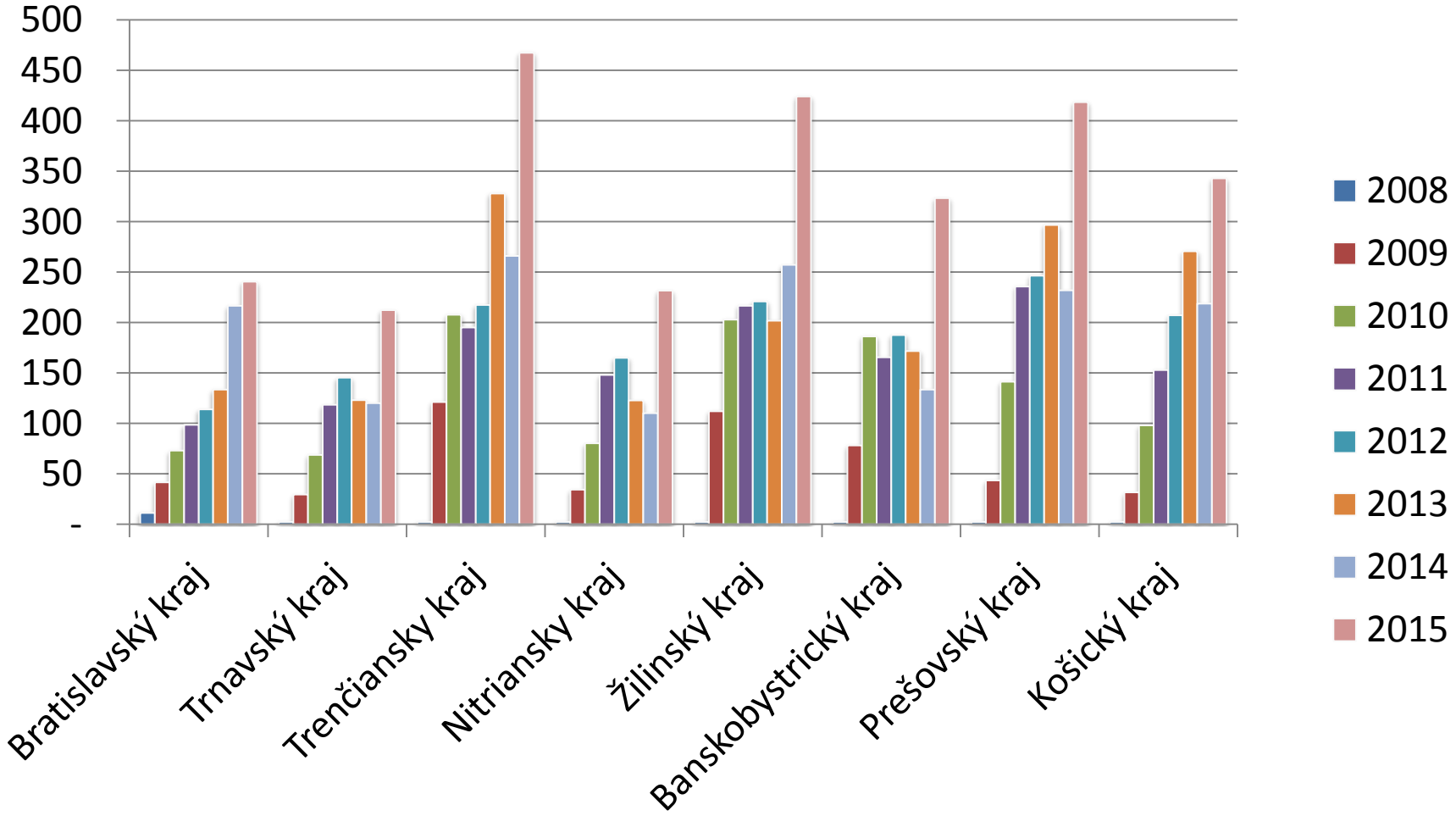
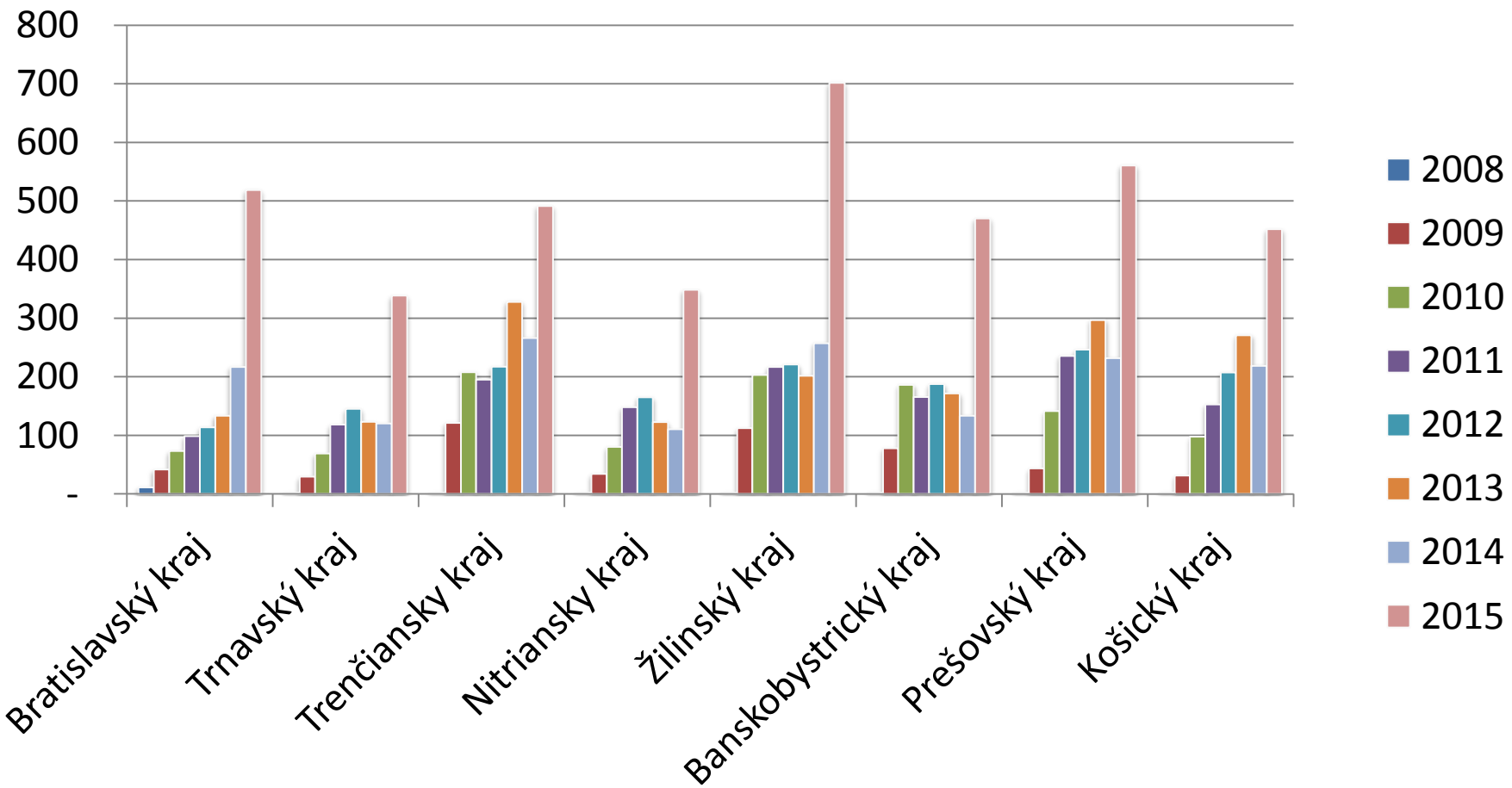
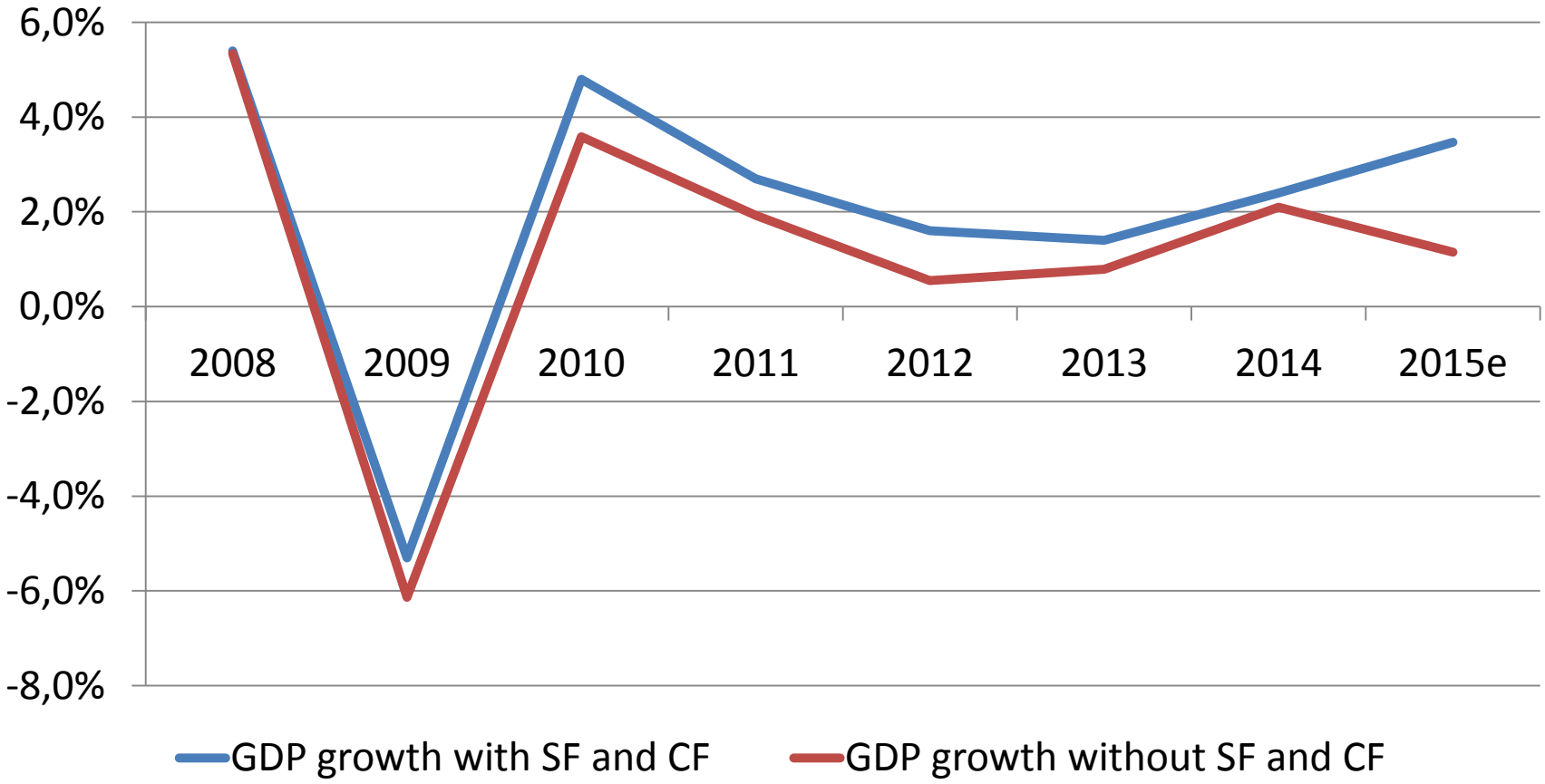
Drawing of SF and CF, million EUR, scenario 89 % (2015)



Drawing of SF and CF, million EUR, scenario 100 % (2015)



Estimated growth of GDP with and without implementation of SF and CF in %



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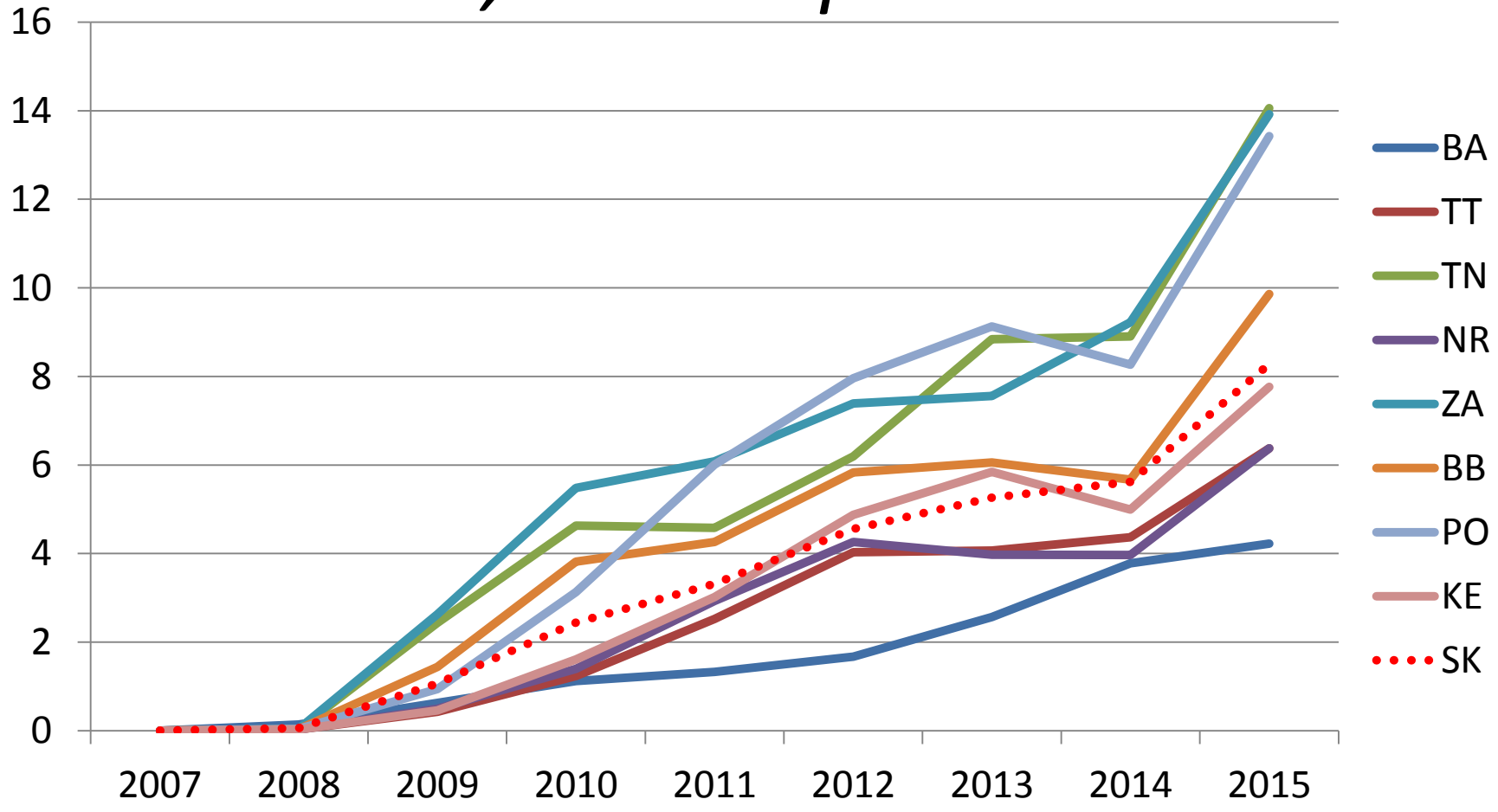
Additional cumulative GDP growth driven by the drawing of SF and CF, in %, current prices



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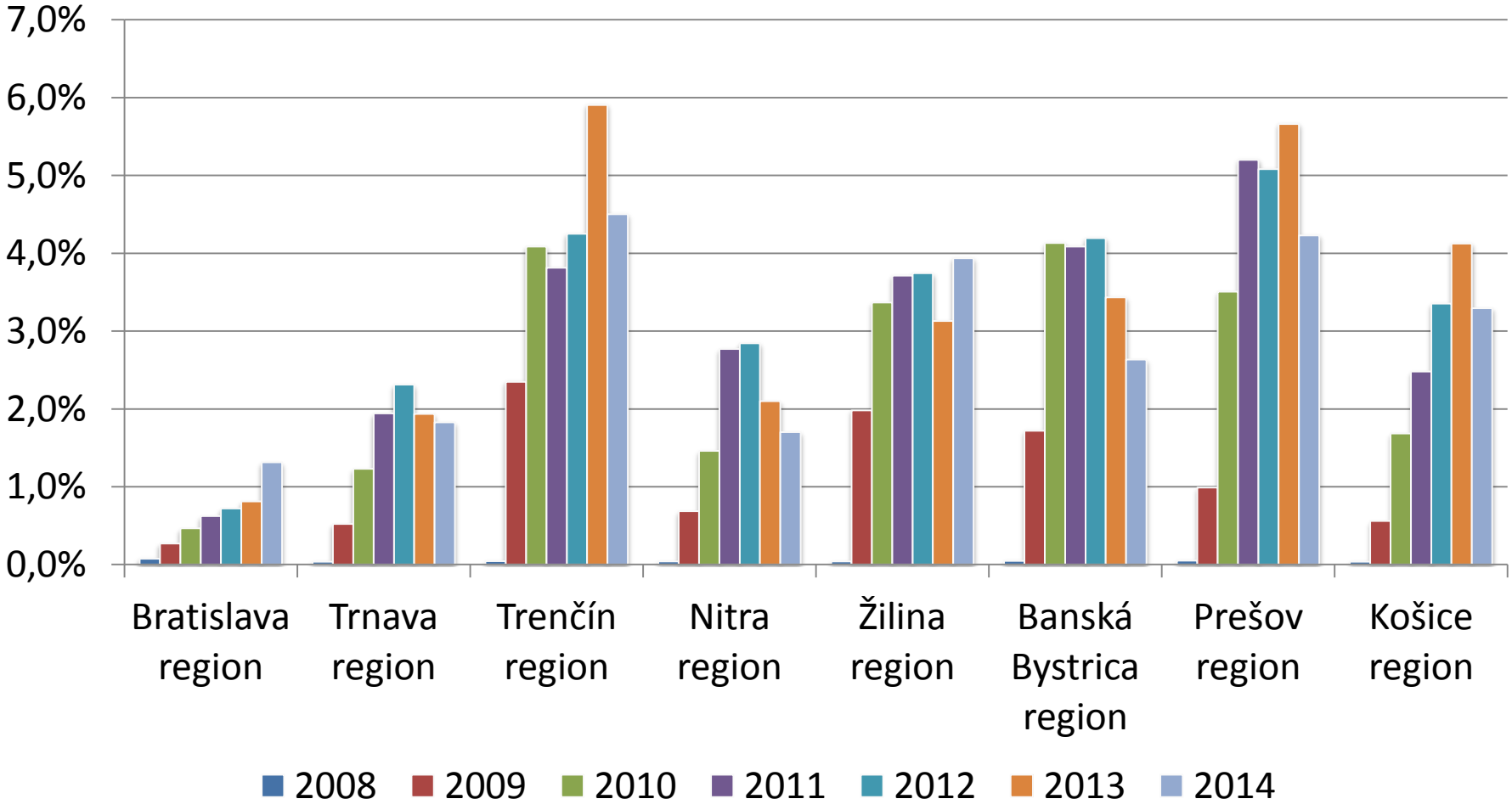
Difference in the growth of real GDP due to SF and CF implementation in percentage points

	2007	2008	2009	2010	2011	2012	2013	2014	2015	average
BA	0.0	0.1	0.5	0.5	0.2	0.3	0.9	1.2	0.5	0.5
TT	0.0	0.0	0.4	0.8	1.3	1.5	0.0	0.3	2.0	0.7
TN	0.0	0.0	2.2	2.2	0.0	1.6	2.4	0.1	4.6	1.4
NR	0.0	0.0	0.4	0.9	1.7	1.3	-0.3	0.0	2.4	0.7
ZA	0.0	0.0	2.4	2.9	0.6	1.2	0.2	1.5	4.3	1.5
BB	0.0	0.0	1.3	2.4	0.4	1.5	0.2	-0.4	3.9	1.1
PO	0.0	0.0	0.8	2.2	3.0	1.9	1.1	-0.8	4.7	1.4
KE	0.0	0.0	0.4	1.2	1.4	1.8	0.9	-0.8	2.7	0.8
SK	0.0	0.1	0.9	1.4	0.9	1.2	0.7	0.3	2.6	0.9

The share of Cohesion policy spending on regional GDP in %



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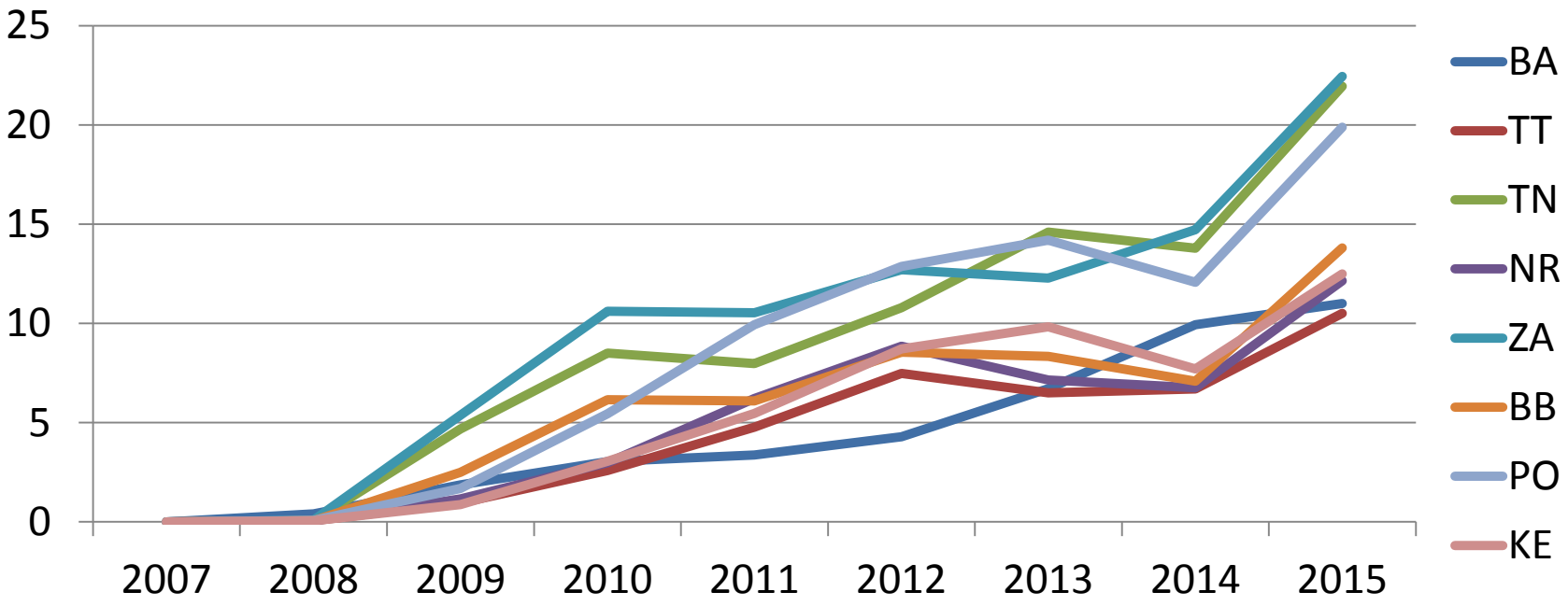
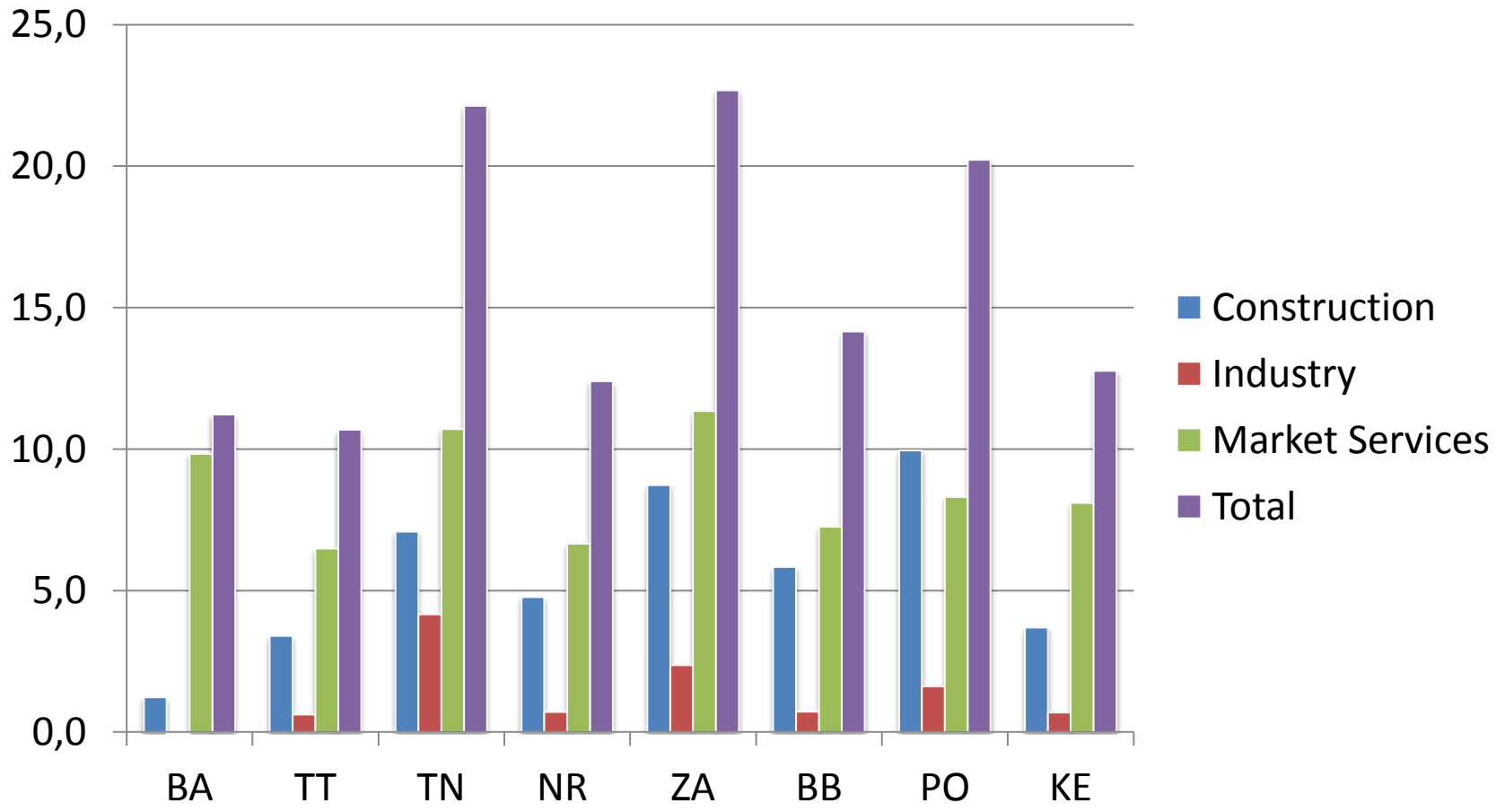
The number of totally created new jobs, thousands of persons, 89% scenario



Difference in employment (2014 vs. 2015 evaluation), '000 persons

	BA	TT	TN	NR	ZA	BB	PO	KE	SK
2014	3.6	-1.4	-6.3	-1.7	1.1	-2.2	-3.2	-6.2	-16.3
2015	3.6	0.7	-3.5	1.9	6.2	2.8	1.6	-4.4	8.9

Number of new jobs by sectors in 2015, ‘000 persons



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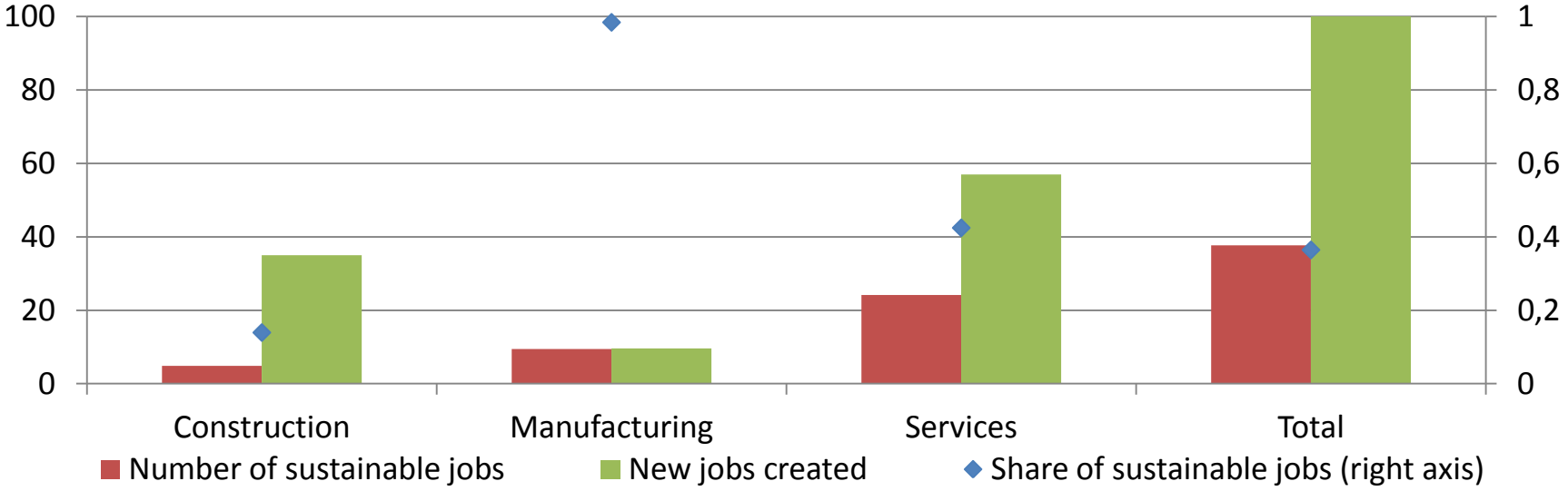
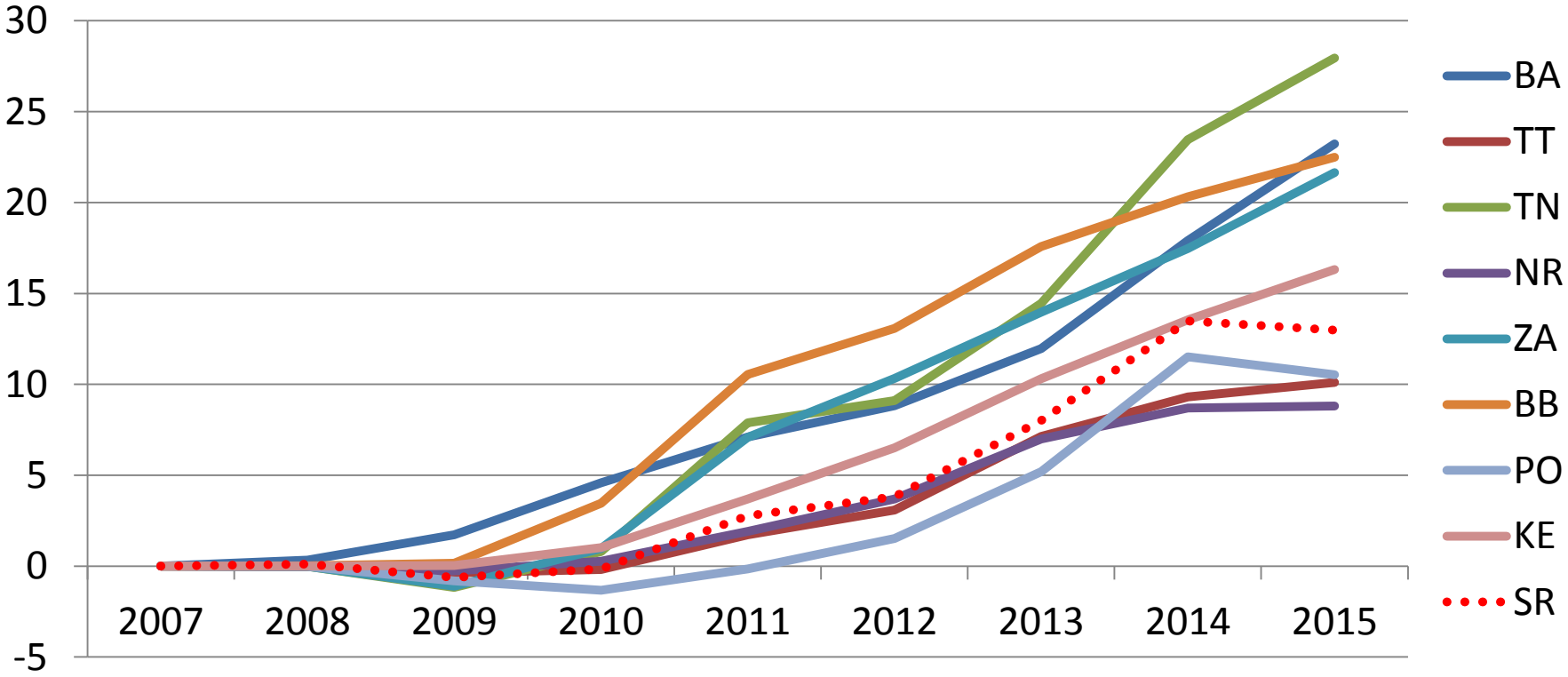
Long-term sustainability of existing and newly created jobs by SF and CF in selected sectors



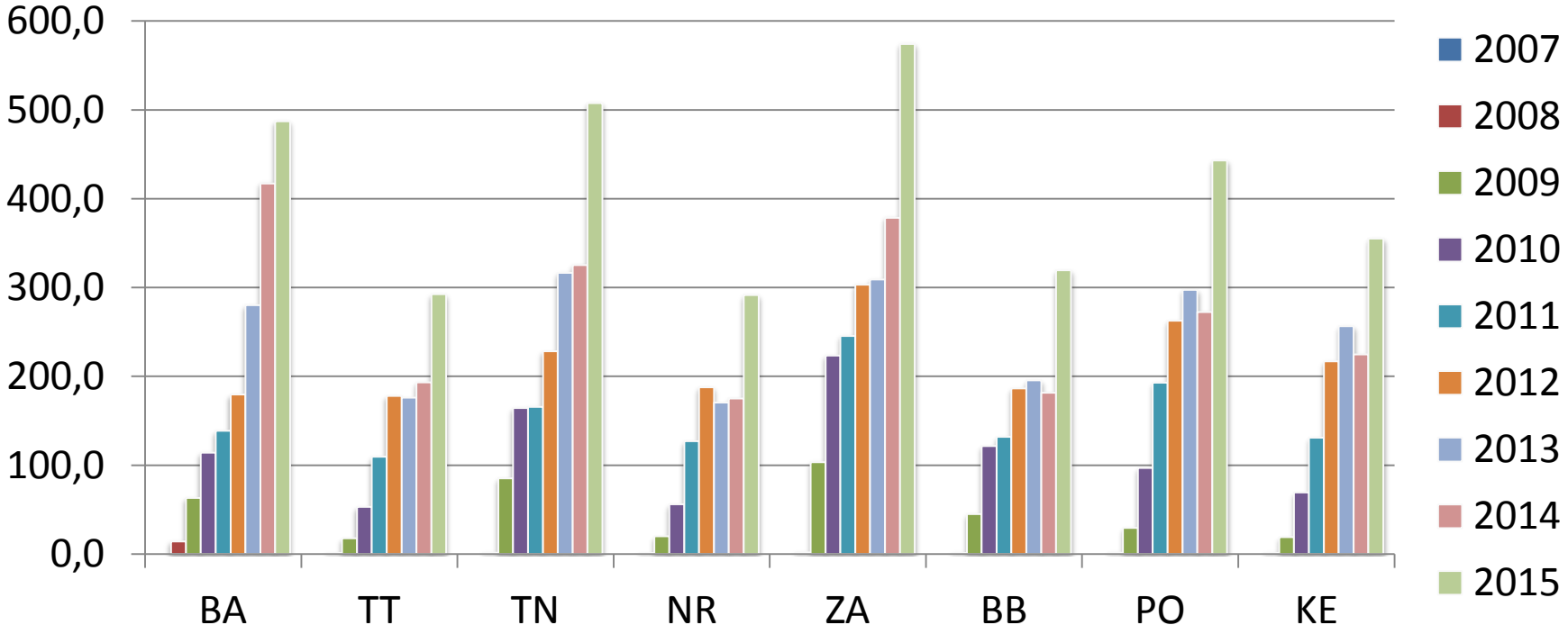
- Additional jobs creation of the end of programming period was around 4,2 % of total employment
- Direct and indirect effects are measured in each region, but interregional mobility is missing
- Construction sector dominantly generates jobs only for the period of project implementation. After the end of the project signicifant drop in employment occurs and sustainablity rate achieves only 14%.
- High value of sustainablity can be observed in the industry. Implementation helps to create sustainable jobs in this sector. Approximately 98% of jobs created in this sector can be percieved as sustainable.
- In the Market services sustaiablity of jobs is at 42%.
- According to our estimates the implementation of Cohesion policy will create up to 105 thousands of jobs in 2015 from which almost 40 thousand will be sustaiable jobs.

Increase of average wage due to SF and CF implementation, in EUR



	BA	TT	TN	NR	ZA	BB	PR	KE	SR
2015	**1.4%**	**1.0%**	**2.9%**	**0.9%**	**2.3%**	**2.4%**	**1.2%**	**1.6%**	**1.2%**

Additional consumption of households due to SF and CF implementation, million EUR



Additional consumption of households due to SF and CF and CF – cumulatively in 2015

	BB	BA	KE	NR	PO	TN	TT	ZA	SK
2015	6.6%	6.8%	12.0%	5.5%	11.4%	6.5%	7.3%	5.9%	7.6%

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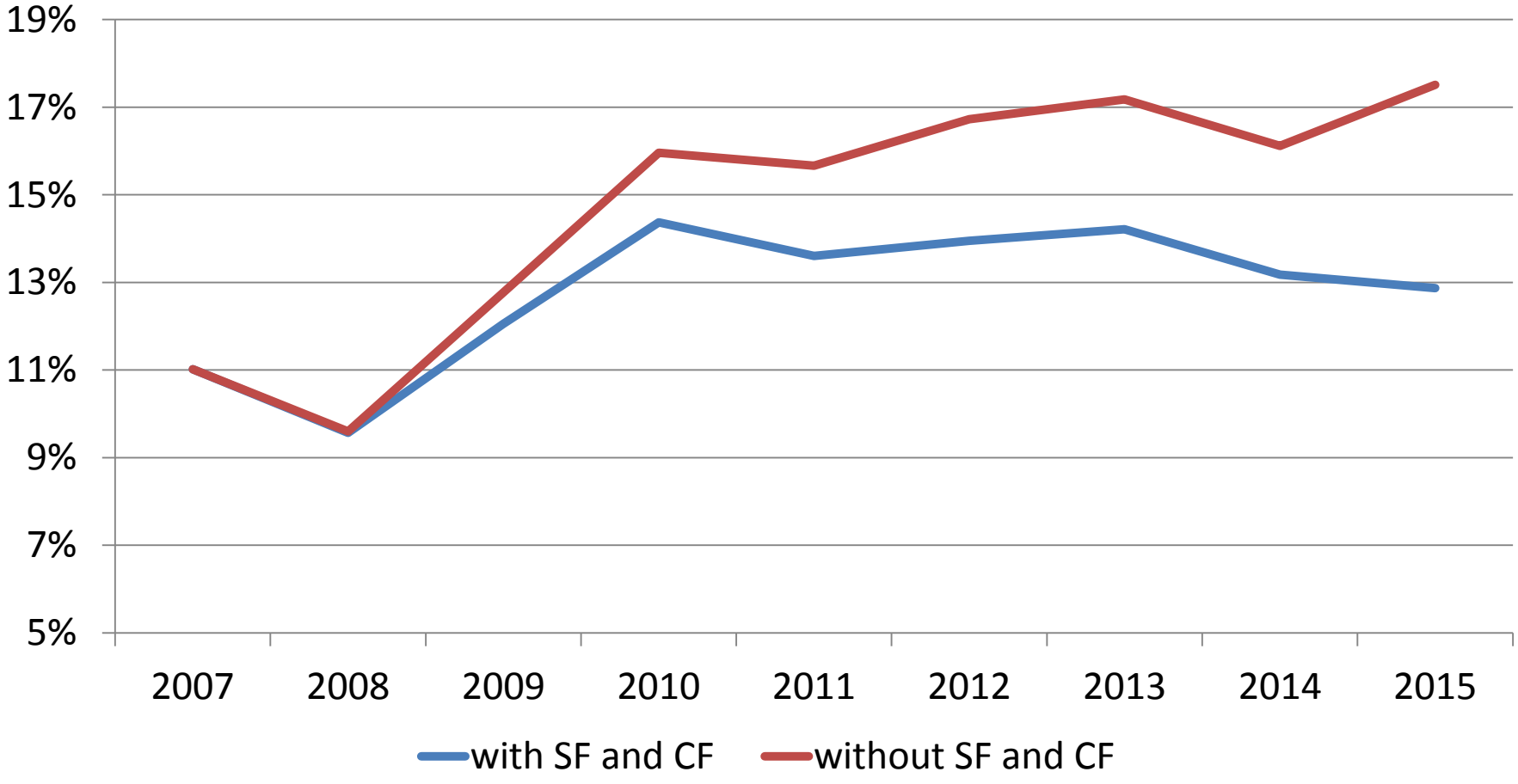
Estimated effect on (pseudo)unemployment level



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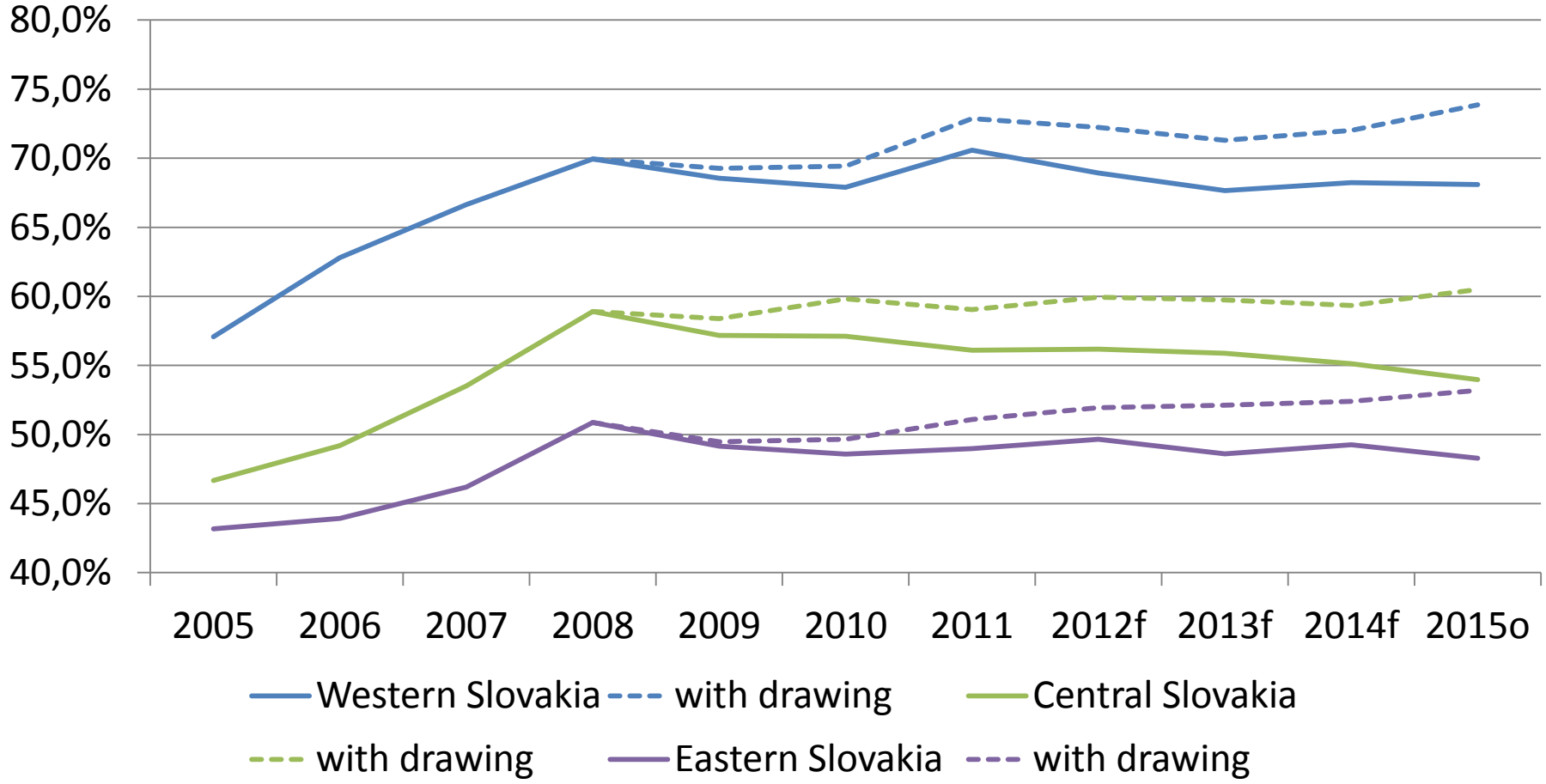
Model comparison of the development of GDP in PPP per capital to the average of EU 28 countries



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Contribution of SF and CF to real convergence of the Slovak Republic to theEU average

With implementation

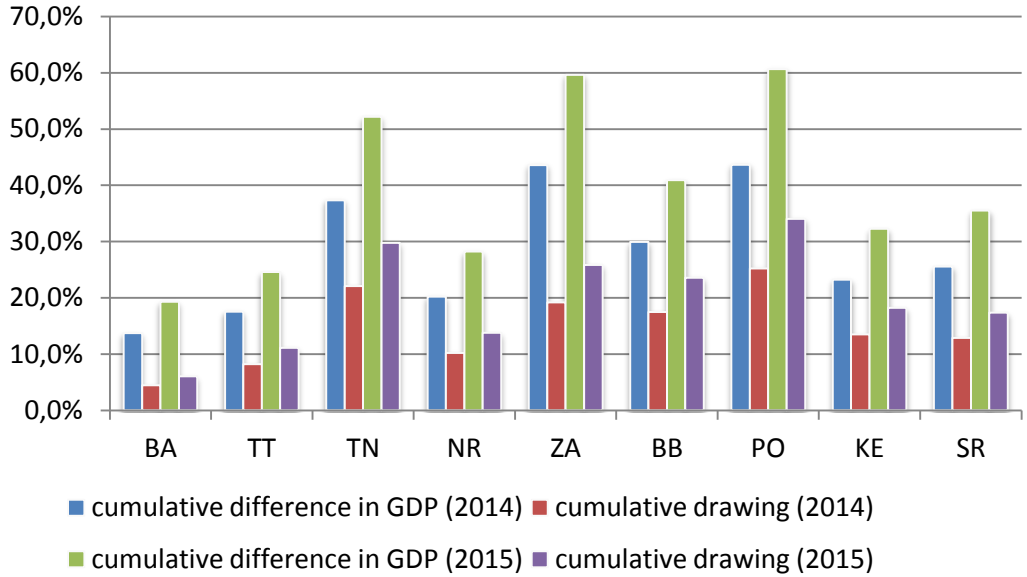
	2007	2008	2009	2010	2011	2012f	2013f	2014o	2015o
SR	68	72	73	73	75	76	75	76	78
BA	160	167	178	177	187	183	187	187	192
TT	81	83	81	82	84	85	82	83	85
TN	62	66	65	65	66	67	66	67	67
NR	56	61	62	61	67	67	65	66	68
ZA	57	63	63	65	65	65	65	65	66
BB	50	55	53	54	53	54	55	54	54
PO	37	42	42	41	44	45	45	45	46
KE	56	60	57	58	58	60	59	60	61

Without implementation

	2007	2008	2009	2010	2011	2012f	2013f	2014o	2015o
SR	68	72	72	71	73	73	72	72	72
BA	160	167	177	175	185	180	183	180	184
TT	81	83	80	81	82	81	79	79	80
TN	62	66	63	62	63	63	60	61	59
NR	56	61	62	60	65	65	63	64	64
ZA	57	63	61	62	61	61	60	59	58
BB	50	55	53	52	51	51	52	51	49
PO	37	42	42	40	42	42	41	42	41
KE	56	60	57	57	57	57	56	57	56

Effectiveness of the geographical distribution of financial allocations on the level of NUTS 3

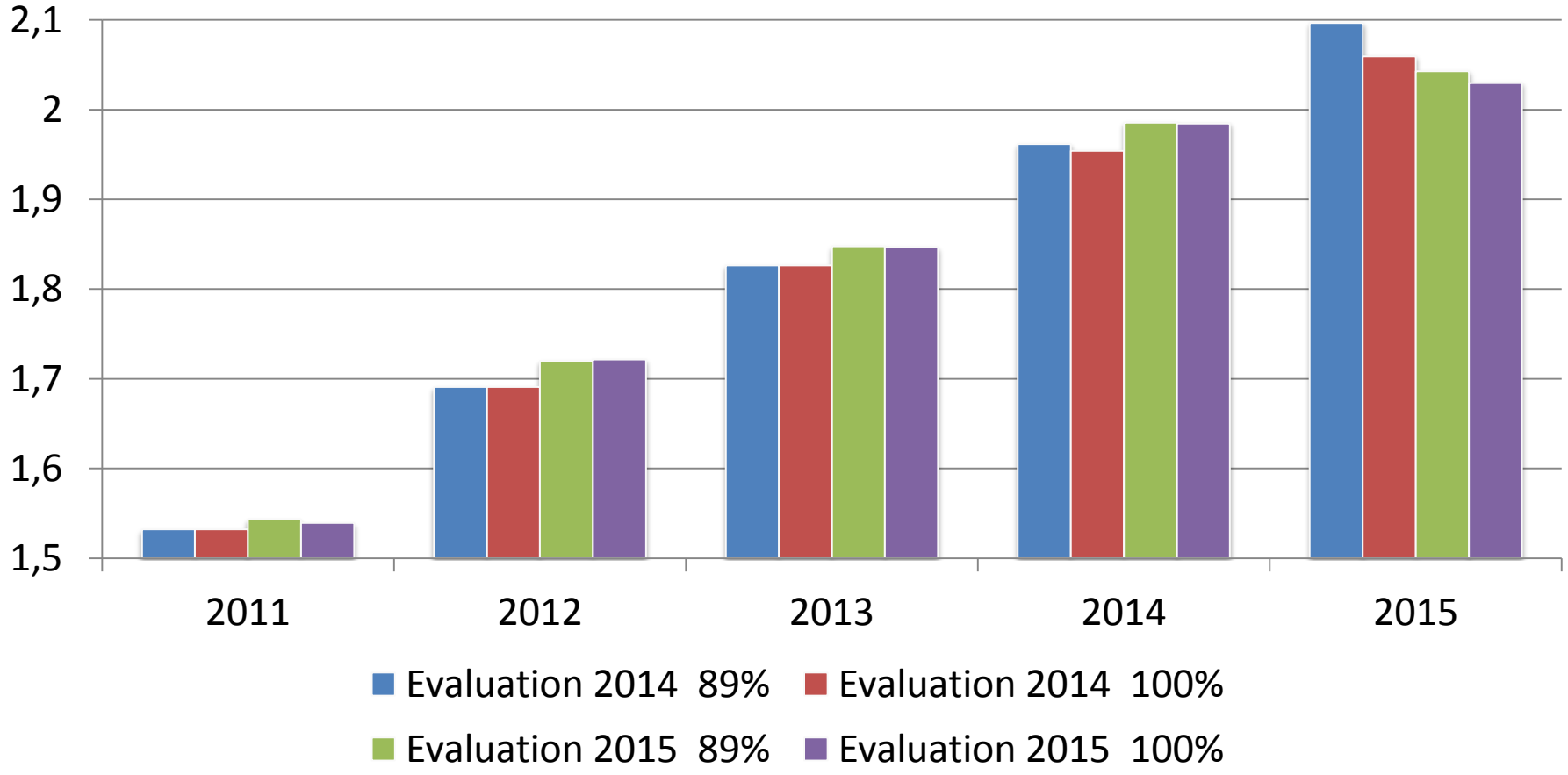
Comparison of cumulative uptake and additional GDP in 2014 and 2015 by NUTS 3 regions and for Slovakia, ratio to the 2007 GDP



Cumulative CSF multiplicator on regional level

	2007	2008	2009	2010	2011	2012	2013	2014	2015
BA		2.2	2.5	2.7	2.6	2.7	3.0	3.1	3.2
TT		0.8	1.0	1.3	1.5	1.8	2.0	2.1	2.2
TN		0.9	1.2	1.3	1.4	1.5	1.6	1.7	1.8
NR		0.8	1.0	1.1	1.4	1.6	1.8	2.0	2.0
ZA		1.2	1.6	1.8	1.9	2.0	2.2	2.3	2.3
BB		0.8	1.0	1.1	1.2	1.4	1.6	1.7	1.7
PO		0.9	1.1	1.2	1.3	1.5	1.6	1.7	1.8
KE		0.9	1.0	1.2	1.3	1.6	1.6	1.7	1.8

Comparing estimated level of CSF multiplier under the current evaluation and the 2014 evaluation and both alternative scenarios



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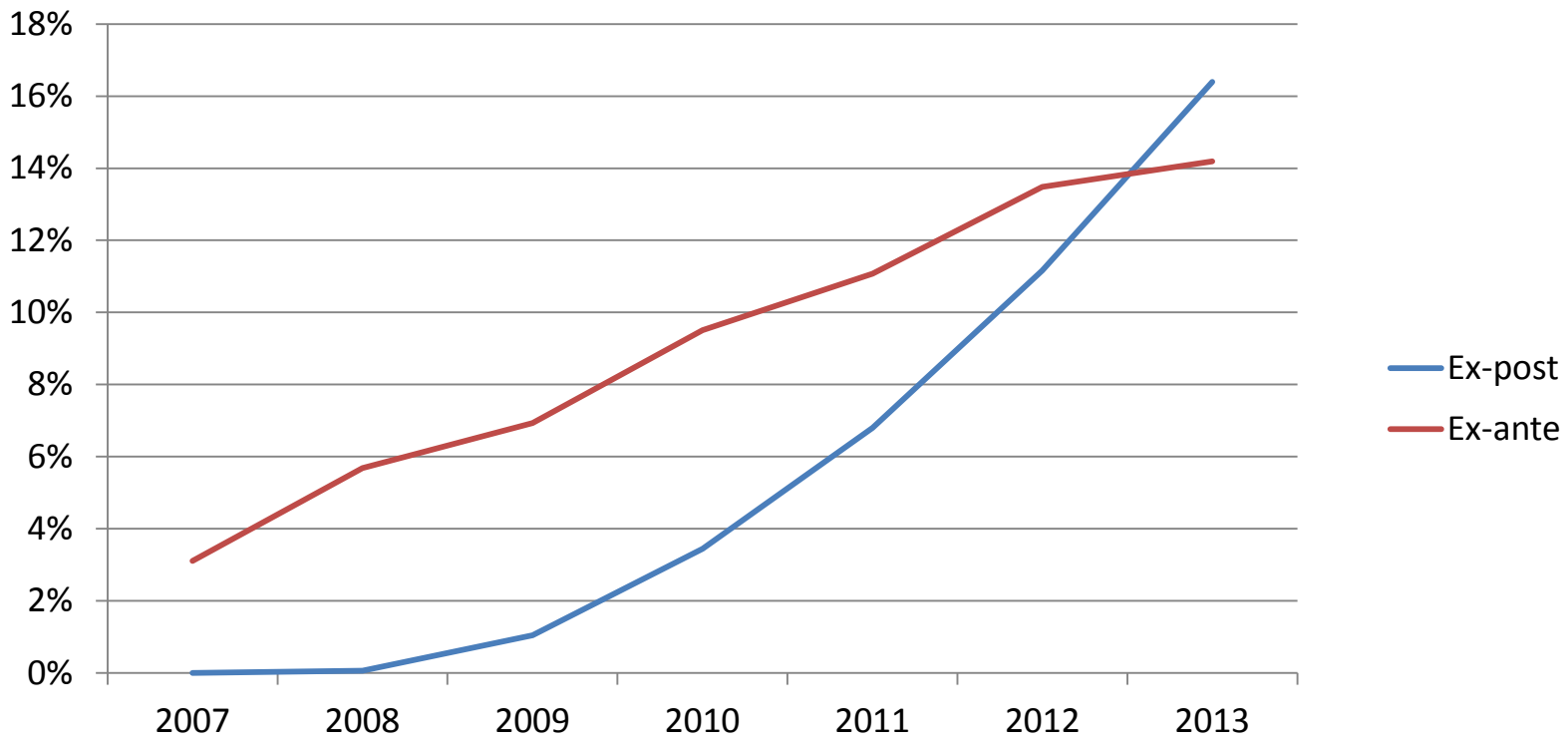
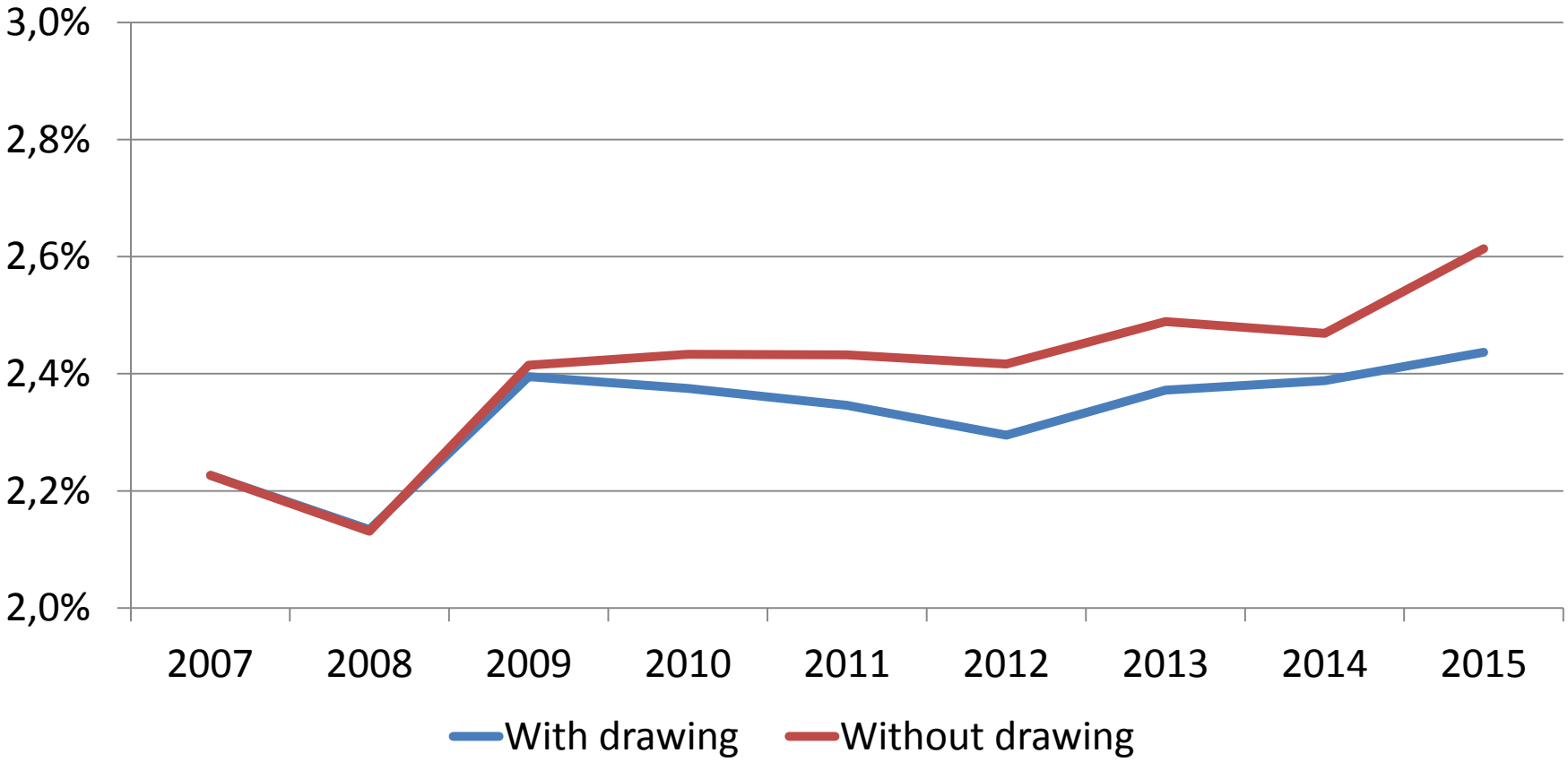
Comparison of cumulative increase of GDP due to SF and CF implementation



Comparison of regional convergence measured by sigma coefficient within regions



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Conclusions (1)

- Presented excercise provides information about implementation of relatively wide used methodology for CSF assessment approved by EC. Regional application was until now done only in Poland, and this is first application on NUTS 3 level.

- Importance of Cohesion policy is fully reflected in mitigating the negative impacts of the global financial and economic crisis on the Slovak economy, and in the process of restart of economic growth. Benefit of the use of EU aid began to materialise in 2009.

- Economic crisis strengthen the importance of CSF and the final effects was generally higher than expected at ex-ante assessment.

- Majority of implemented funds (more than 50%) were allocated to infrastructure. This has also significant impact on the main indicators.

- Without implementation of Cohesion policy, the process of convergence would be disrupted in six out of the eight regions of Slovakia . The economically strongest region – Bratislava region - had a significant impact on maintaining level of national convergence, without its positive impact there would been a negative development in the convergence process at the national level.

Conclusions (2)

- The regional convergence did not occur and regional differences slightly deepened during the programming period 2007-2013. It should also be stressed that without sources of SF and CF, the regional disparities would be even more significant. On national and regional level implementation of CF and SF had significant impact on employment.

- Impact of Cohesion policy on employment at national and regional level can be considered also as significant. Based on the econometric model, SF and CF support should generate in total 110,000 jobs until 2015, of which 37% would be classified as sustainable (occupied for the period of 3 years).

- The highest number of jobs will be created in the sector of services, where the multiplier effect of higher demand for job creation is the most evident.

- Uneven spending over time leads to lower effectiveness and cumulative effects of CF and SF.

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Thank you

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