



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

Ilya B. Voskoboynikov

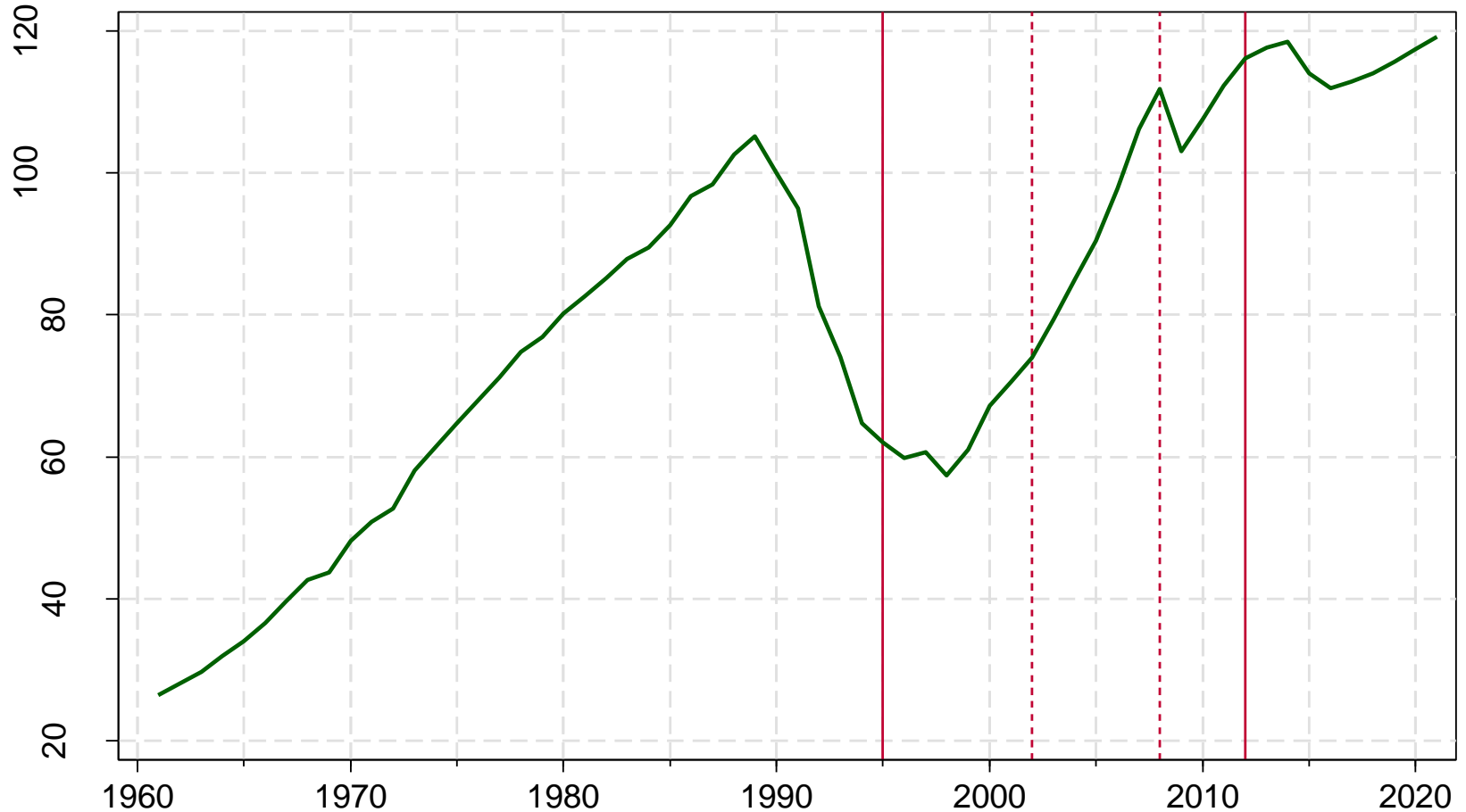
Russia since 1995:
Natural Gas, Catching Up and Informality

May 23, 2016, Madrid
4th World KLEMS Conference

Russia KLEMS Today and Tomorrow

- The first release was published in 2013
 - 1995-2009;
 - VA-based growth accounting frameworks
 - 34 industries
- The second release is expected in Autumn 2016
 - Extension to 2014
 - Labour composition series will be added
- GO-based growth accounting is expected after publication of Russia's SUTs for 2011
- Russia KLEMS provides a platform for the CIS KLEMS project
 - Collaboration of Higher School of Economics and the CIS Statistics Committee
 - Feasibility study is in progress
 - Kazakhstan is on-board

Long Run Growth of the Russian economy



Sources: Ponomarenko (2002), Rosstat, IMF WEO database, January 2016

Long Run Growth in Russia: Summary

- **Sources of Growth (decsending importance)**
 - (+) Capital Intensity in Ext. Mining and some Market Services
 - (+) Technology Catching up in Business Services and Manufacturing (before 2008)
 - (+) Labour reallocation
 - (+) Labour composition
 - (-) Labour reallocation to informality

Growth and Structural Change in 1995-2012

	Share of value added (%)		Growth rates (%)	Contributions (pp.)
	1995	2012	1995-2012	2012
Total economy	100,0	100,0	3,7	3,7
Agriculture	7,6	3,9	1,2	0,1
Oil, Gas, Wholesale trade	18,2	23,4	4,5	0,9
Manufacturing	19,9	15,2	2,6	0,4
Other Goods	12,0	9,9	2,7	0,3
Market Services	28,3	28,7	5,2	1,5
Non-Market Services	13,9	19,0	3,1	0,5

Source: Russia KLEMS

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Sources of Economic Growth

	Contributions (pp..)				
	1995-2002	2003-2007	2008-2012		1995-2012
Aggregate Real GDP growth	2,78	7,14	1,03		3,74
Hours worked	-0,09	0,83	-0,13		0,22
Aggr. Lab. Productivity	2,86	6,31	1,16		3,52
Labour reallocation	1,31	0,72	0,09		0,76
Intra-industry Lab. Productivity Growth	1,55	5,59	1,08		2,76
MFP	1,63	3,17	-1,61		1,16
Capital Intensity	-0,33	2,26	2,47		1,38
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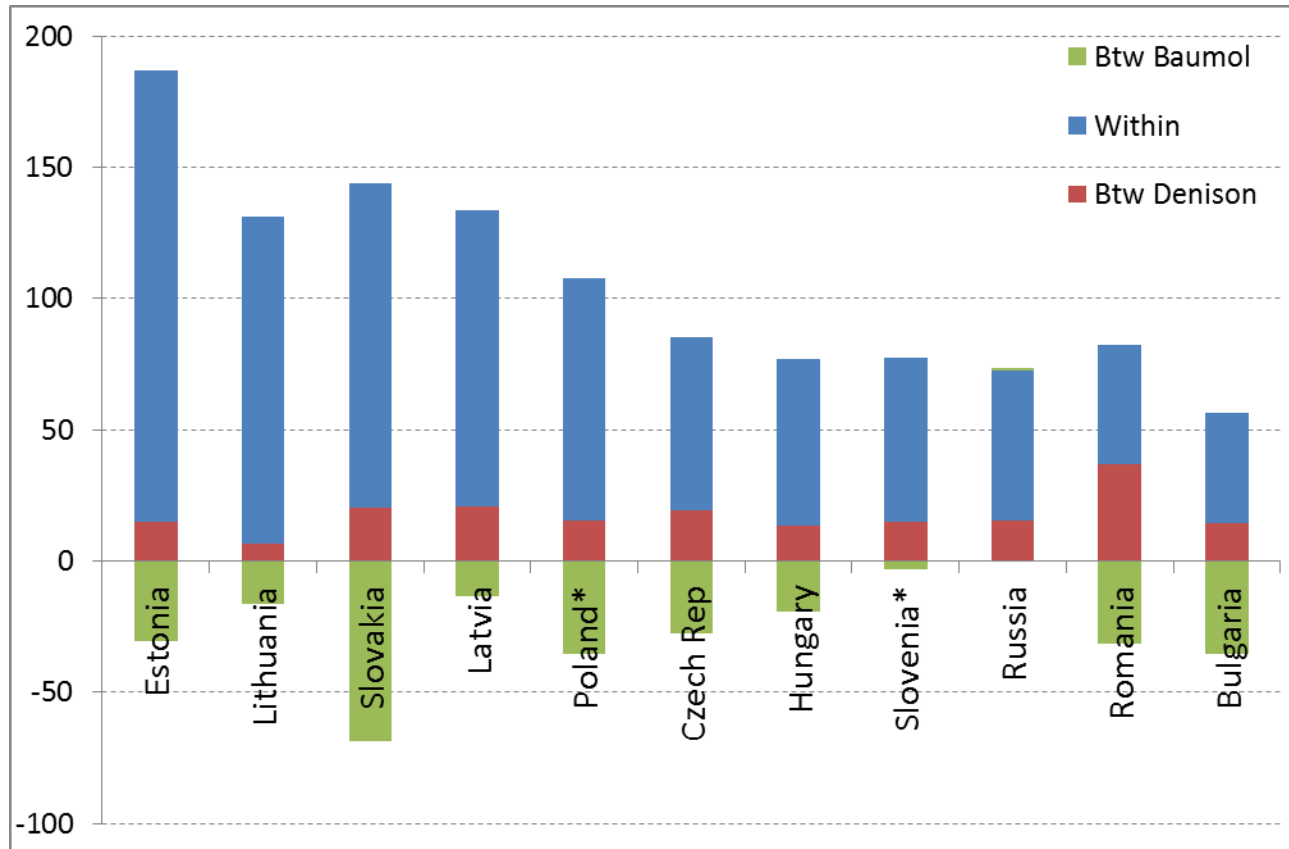
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Labour Reallocation in CEE and Russia (1995-2007). Shift-Share Analysis

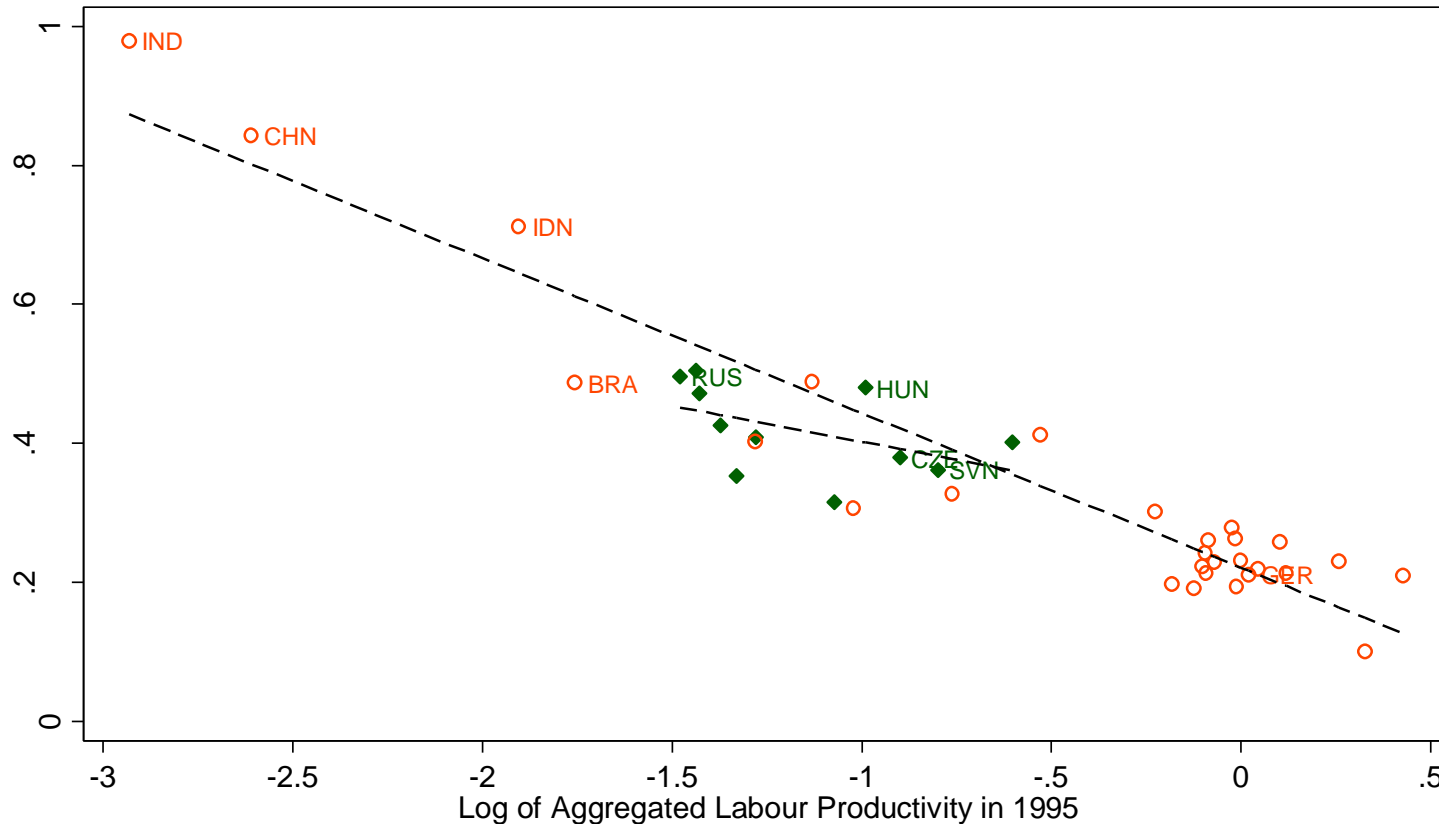
LP in 2007 relative to 1995 in CEE countries and in Russia (1995 = 100)



Source: EU KLEMS, Russia KLEMS, own calculations

No Much Room for Structural Bonus in Post-Transition Economies

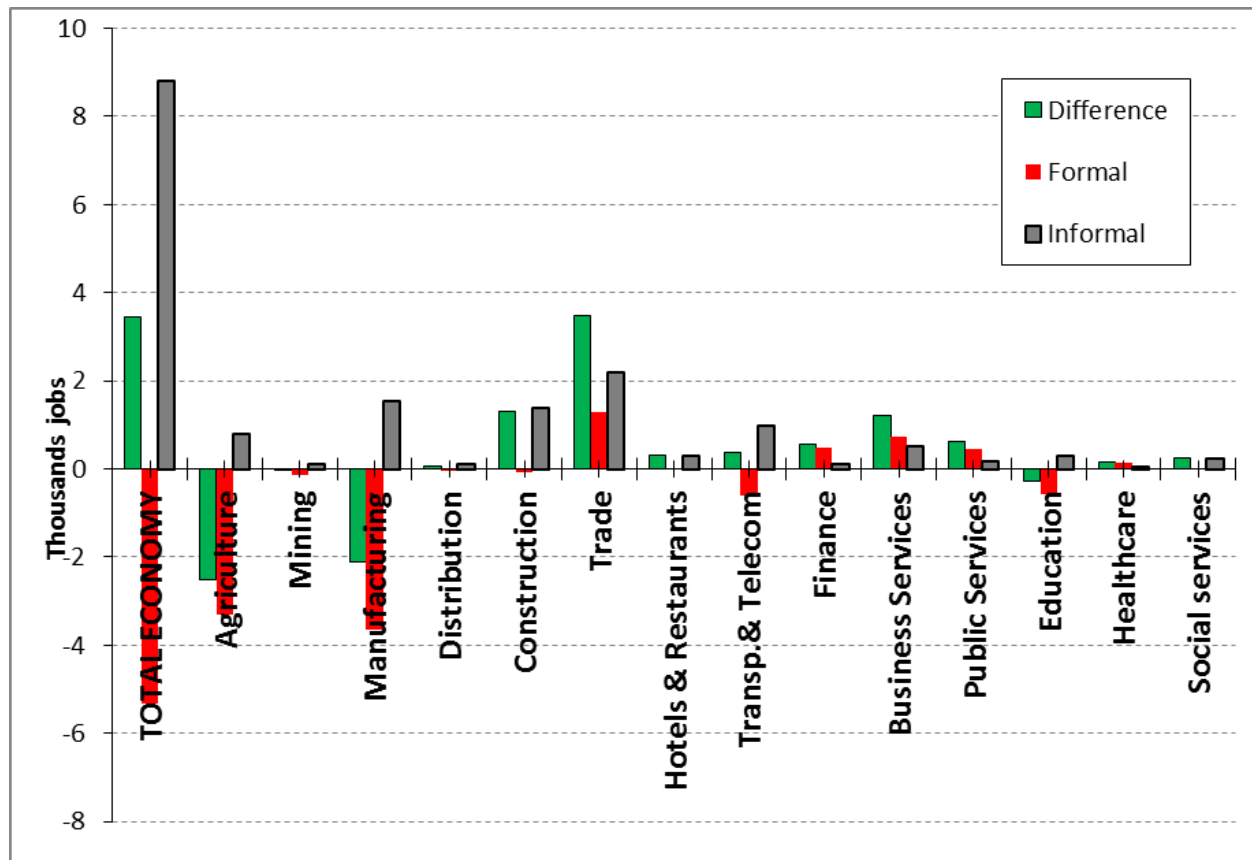
Inter-sectoral productivity variation and aggregate LP levels in 1995



Source: (Voskoboynikov 2014)

Labour reallocation to informality

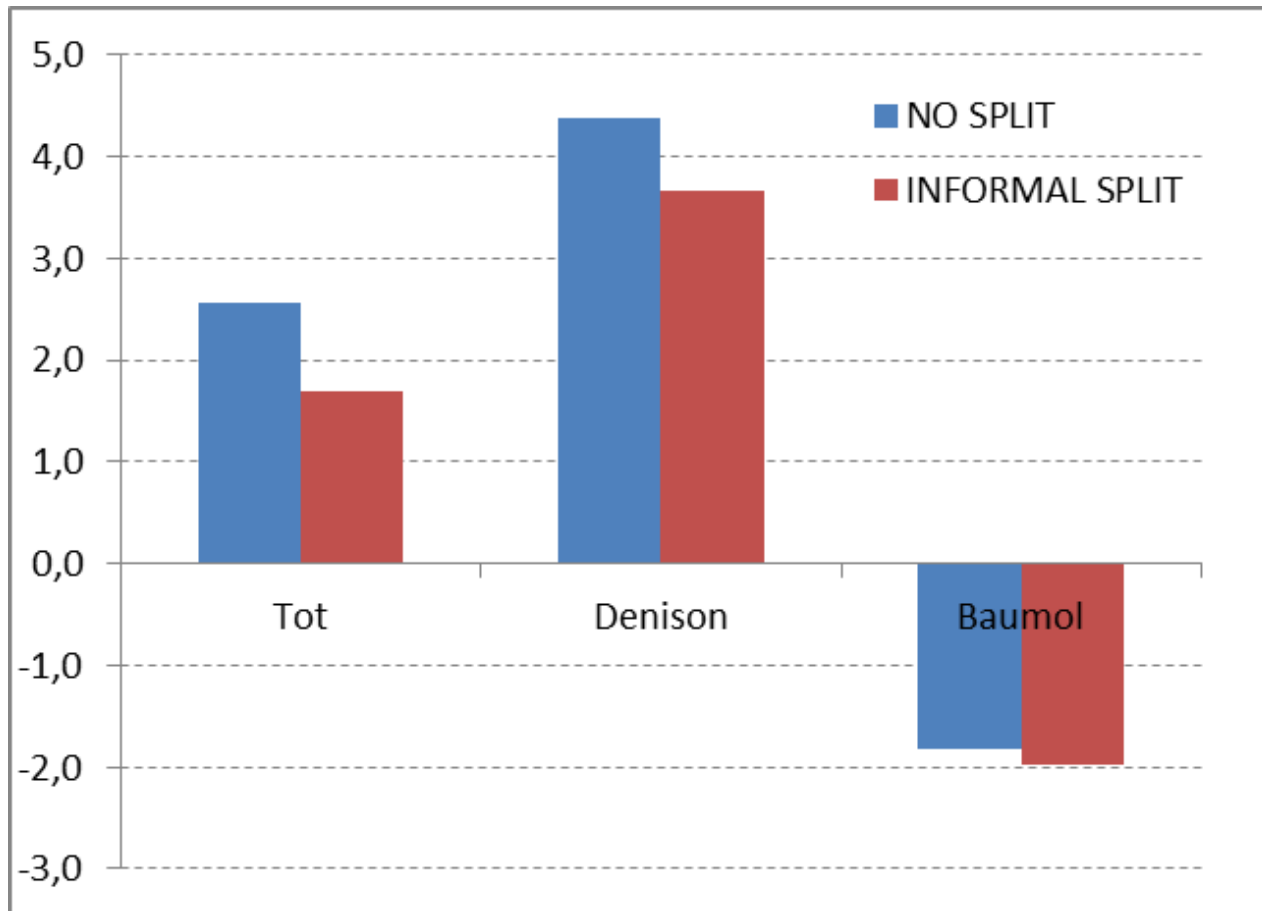
Increase of employment in 2000-2013 (thousands persons)



Source: LFS, Rosstat

Informal Split, Labour Reallocation and LP Growth

Contribution of labour reallocation to Aggregate LP growth in 2005-2012 (p.p.)



Source: (Voskoboynikov, Gimpelson 2015)

Capital services, sectoral contribution

	Share of value added (%)		Growth rates (%)	Contributions (pp.)
	1995	2012	1995-2012	1995-2012
Total economy	100,0	100,0	1,84	1,84
Agriculture	7,6	3,9	-0,14	-0,01
Oil, Gas, Wholesale trade	18,2	23,4	2,33	0,48
Manufacturing	19,9	15,2	1,77	0,31
Other Goods	12,0	9,9	1,60	0,18
Market Services	28,3	28,7	2,31	0,66
Non-Market Services	13,9	19,0	1,34	0,22

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MFP, Sectoral contributions in CEE and Russia, 1995-2007 (pp.)

	Russia	Czech.	Hungary	Slovenia	Germany
Total Market econ.	2.71	1.52	2.49	2.43	0.75
Agriculture	0.21	0.09	0.39	0.57	0.06
Oil, Gas, Wholesale trade	0.35	0.43	0.21	0.25	0.17
Manufacturing	0.65	1.08	1.06	1.36	0.76
Other Goods	0.27	-0.23	0.03	0.16	0.03
Market Services	1.23	0.16	0.80	0.09	-0.28

MFP, Sectoral contributions in CEE and Russia, 1995-2007 (pp)

	Russia	Czech.	Hungary	Slovenia	Germany
Total Market econ.	2.71	1.52	2.49	2.43	0.75
Agriculture	0.21	0.09	0.39	0.57	0.06
Oil, Gas, Wholesale trade	0.35	0.43	0.21	0.25	0.17
Manufacturing	0.65	1.08	1.06	1.36	0.76
Other Goods	0.27	-0.23	0.03	0.16	0.03
Market Services	1.23	0.16	0.80	0.09	-0.28

Sectoral MFP growth in CEE and Russia, 1995-2007 (%)

	Russia	Czech.	Hungary	Slovenia	Germany
Total Market econ.	2.71	1.52	2.49	2.43	0.75
Agriculture	2.97	1.87	4.73	4.79	3.51
Oil, Gas, Wholesale trade	1.49	4.44	3.10	3.49	2.31
Manufacturing	2.93	3.36	3.66	4.50	2.36
Other Goods	2.26	-1.70	0.30	1.56	0.33
Market Services	3.47	0.39	1.76	0.23	-0.59

Sectoral MFP growth in CEE and Russia, 1995-2007 (%)

	Russia	Czech.	Hungary	Slovenia	Germany
Total Market econ.	2.71	1.52	2.49	2.43	0.75
Agriculture	2.97	1.87	4.73	4.79	3.51
Oil, Gas, Wholesale trade	1.49	4.44	3.10	3.49	2.31
Manufacturing	2.93	3.36	3.66	4.50	2.36
Other Goods	2.26	-1.70	0.30	1.56	0.33
Market Services	3.47	0.39	1.76	0.23	-0.59

Initial MFP levels in CEE-4 and Russia (1995)

MFP levels in sectors in 1995 (Germany = 100)

	Russia	Czech Republic	Hungary	Slovenia
Market economy, total	36.2	52.9	47.0	60.2
Agriculture	10.2	43.1	34.3	96.7
Extended Mining	74.0	36.3	65.7	54.6
Manufacturing	38.7	40.1	39.4	41.3
Other Goods	87.2	107.0	64.3	99.5
Market Services	22.8	64.9	53.4	78.1

Source: EU KLEMS, Russia KLEMS, own calculations

Speed of Convergence in CEE-4 and Russia in 1995-2007

Convergence regressions, sectoral MFP

	β	SE	λ	R^2	Obs.
Market economy, total	-0.0478***	0.01140	0.069	0.52	104
Manufacturing	-0.0716***	0.01475	0.151	0.71	52
Agriculture, Utilities, Construction, Mining and Wholesale trade	-0.0134**	0.00415	0.015	0.24	20
Market Services	-0.0323***	0.00697	0.040	0.45	32

Source: Author's calculation

Notes: Coefficients are estimated from the following equation

$\Delta \ln MFP_i = \alpha + \beta \ln MFP_i^{1995} + \varepsilon_i$ with the speed of convergence (λ) calculated from

$$\beta = -\frac{1-(1-\lambda)^T}{T} \text{ (Bernard and Jones 1996).}$$

We use OLS with the heteroskedasticity robust White estimator of the covariance matrix.

* - significance at the 10% level; ** - 1% level; *** - 0.1% level

The Contribution of Labour Composition in CEE-4 and Russia in 1995-2007 (p.p.)

	RUS	CZE	HUN	SVN	GER
Aggregate Real GDP growth	4,58	2,65	3,85	3,79	1,60
Hours worked	0,32	-0,19	0,41	-0,19	-0,12
Aggr. Lab. Productivity	4,25	2,84	3,45	3,99	1,71
Labour reallocation	0,98	0,23	0,19	1,23	0,25
Intra-industry Lab. Productivity Growth	3,28	2,60	3,26	2,76	1,46
MFP	2,20	0,72	2,17	0,82	0,69
Capital Intensity	0,89	1,70	0,69	1,49	0,73
Labour composition	0,19	0,19	0,40	0,45	0,05

Source: (Voskoboynikov, Kapeliushnikov 2014)

Long Run Growth in Russia: Summary

- **Sources of Growth (decsending importance)**
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Thank you!

What types of assets contribute more? (pp)

	1995-2002	2002-2008	2008-2012		1995-2012
Capital services, total	0,43	2,92	2,53		1,84
ICT and non-material assets	0,21	0,26	0,09		0,16
Machinery and equipment	-0,01	1,68	1,19		0,89
Constructions	0,22	0,99	1,25		0,79

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