

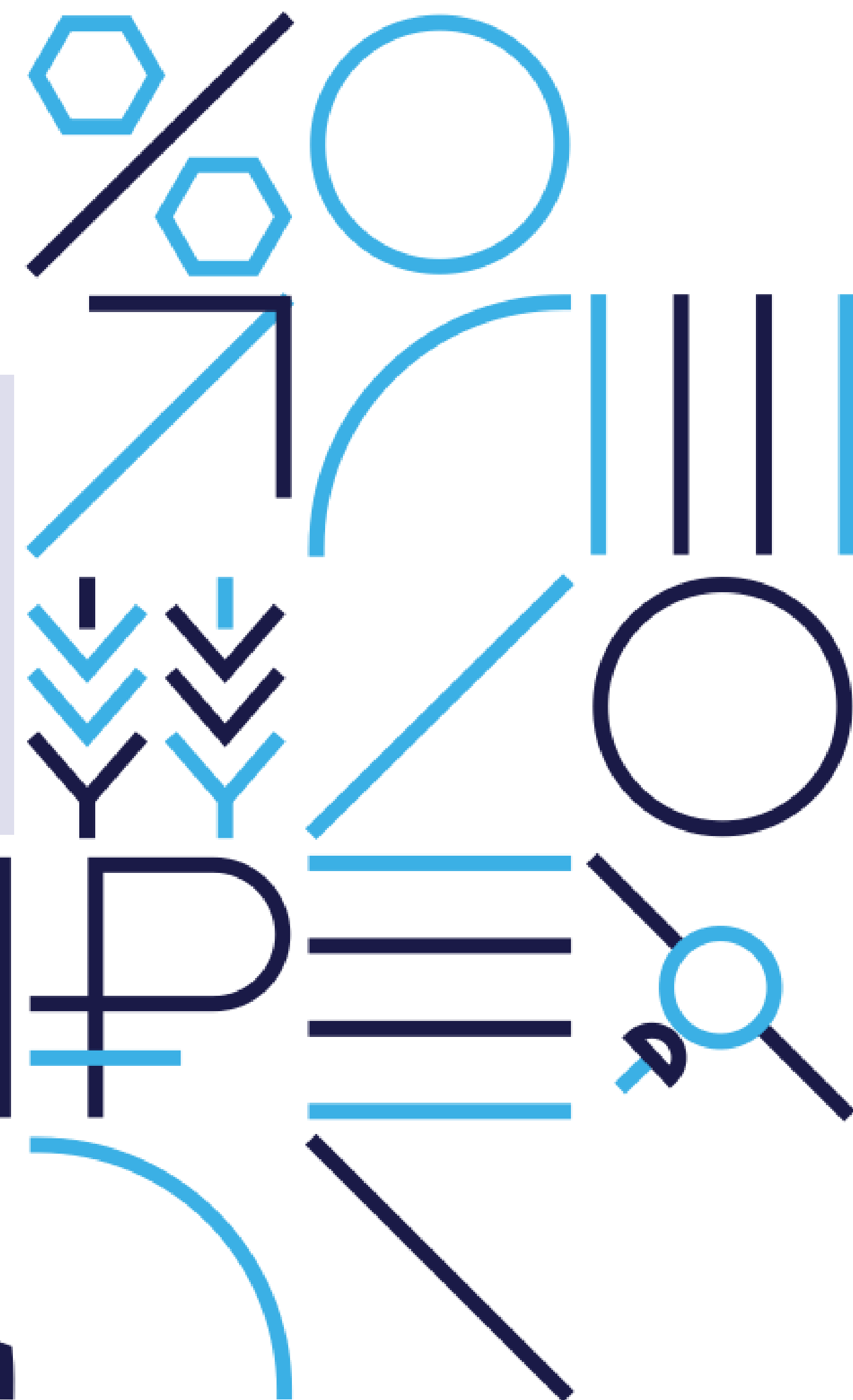
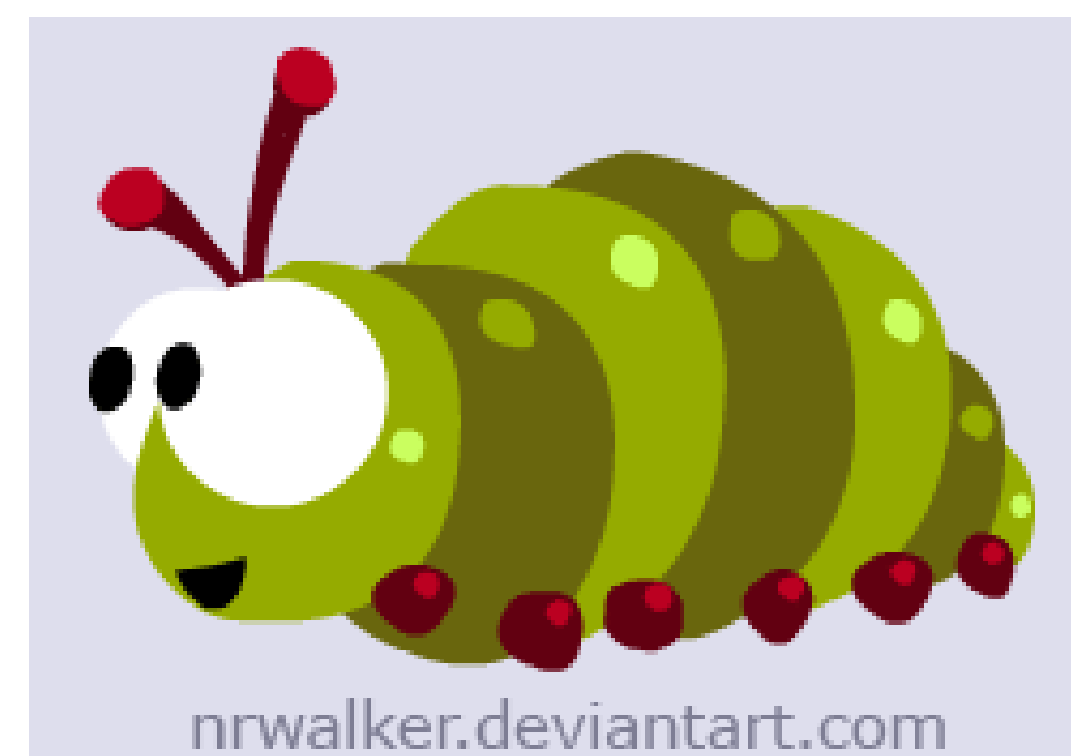
Financial limitations for I/O models

Moiseev Anton

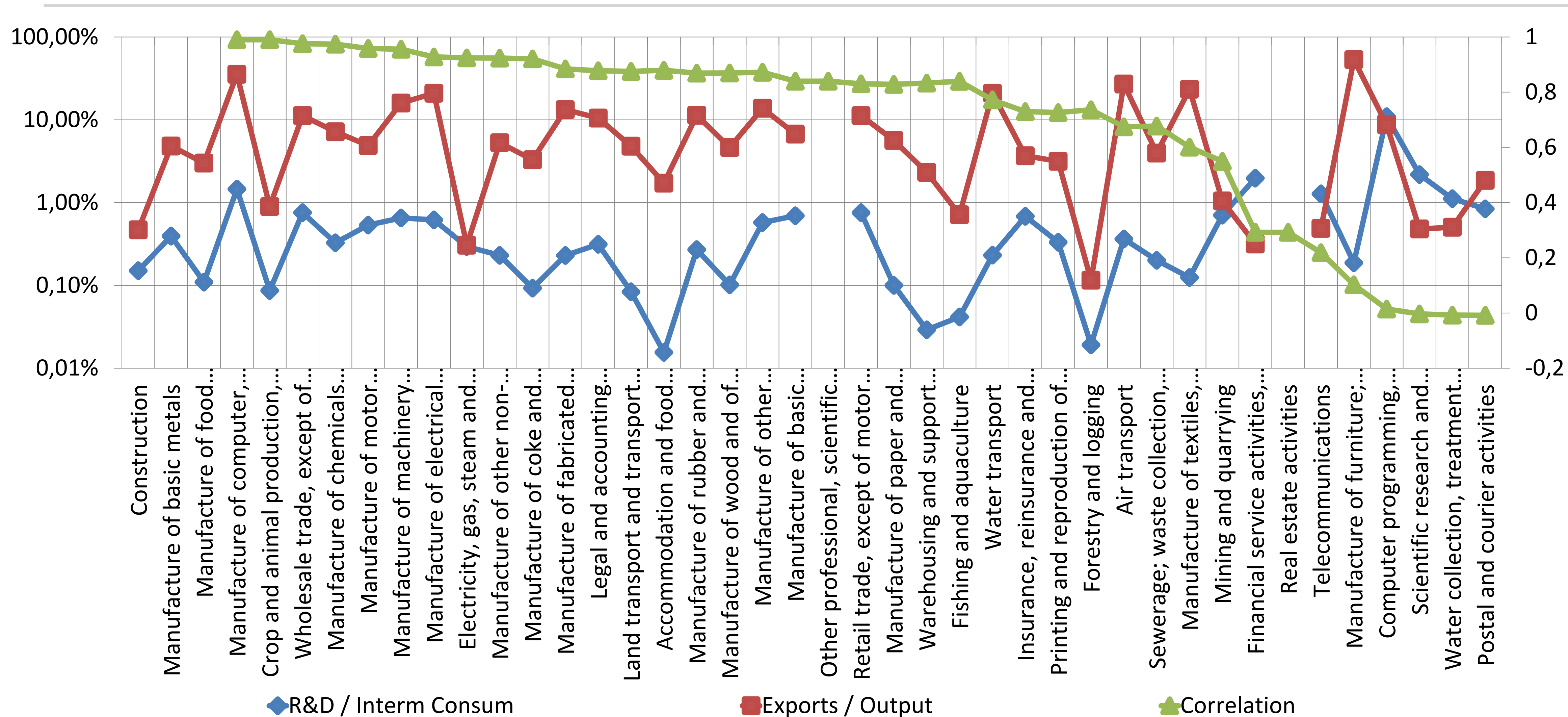
Head of Macrofinancial research and forecasting Dept, IEF-RAS,
Leading Researcher of the Center for monetary policy and financial markets of
Financial University



Институт
Народнохозяйственного
Прогнозирования РАН



Rosella & Leonardo tribute



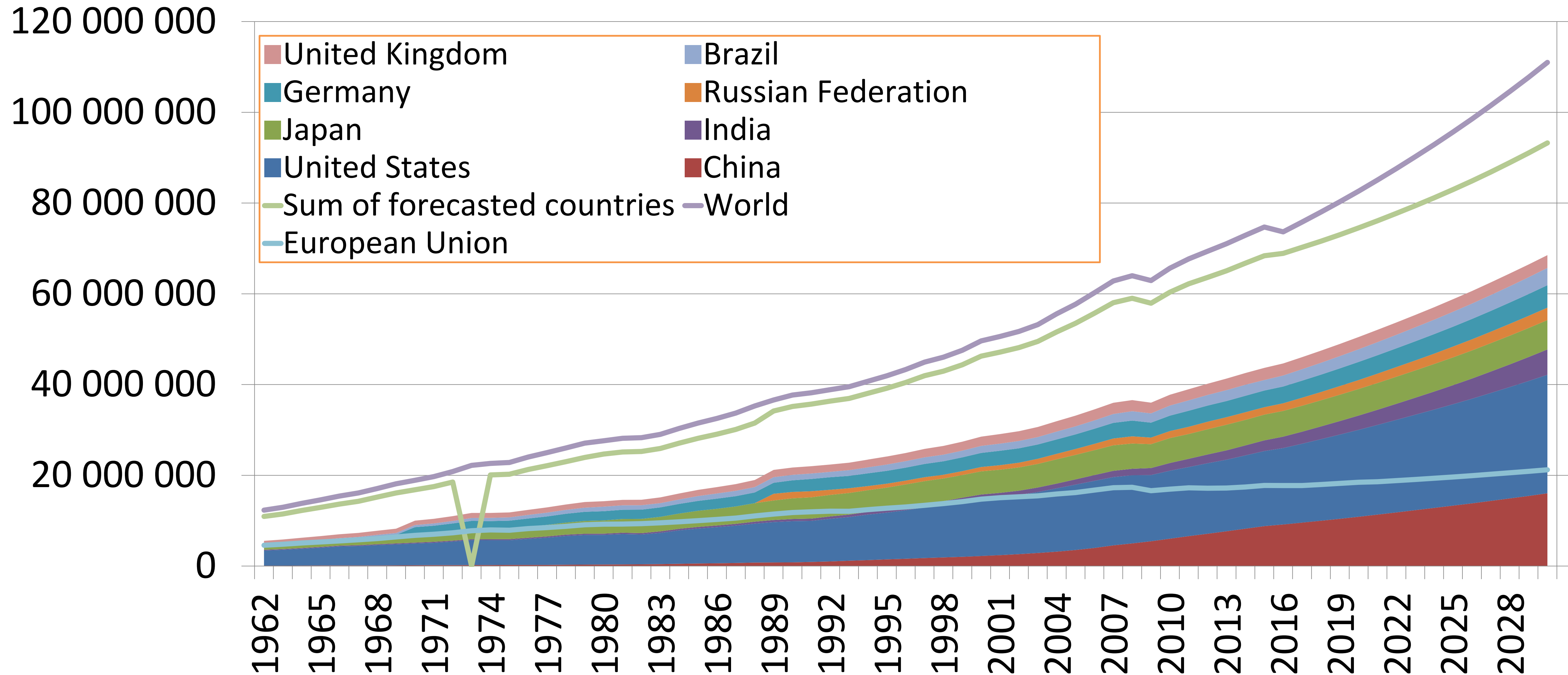
1.

world economy factored

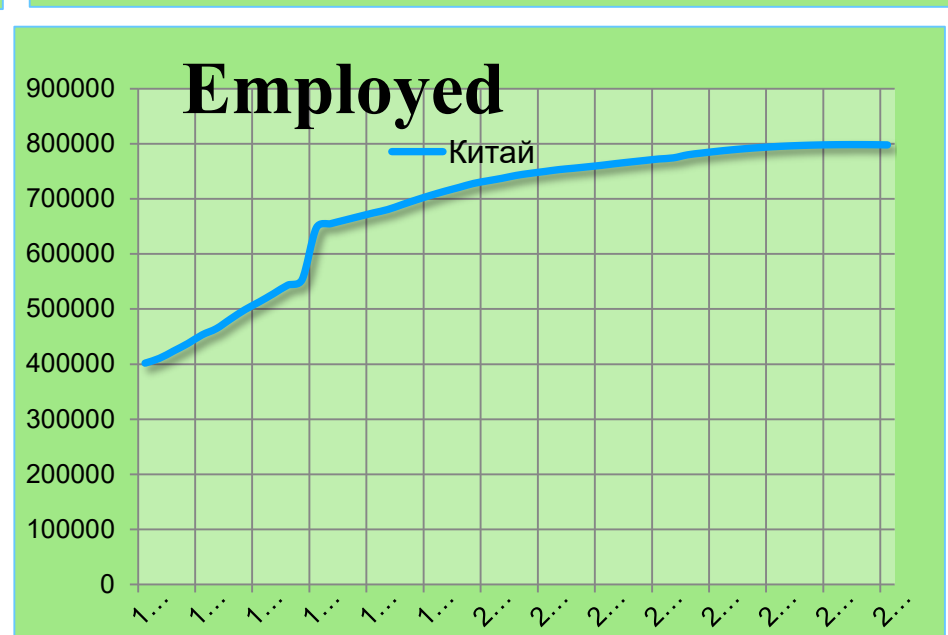
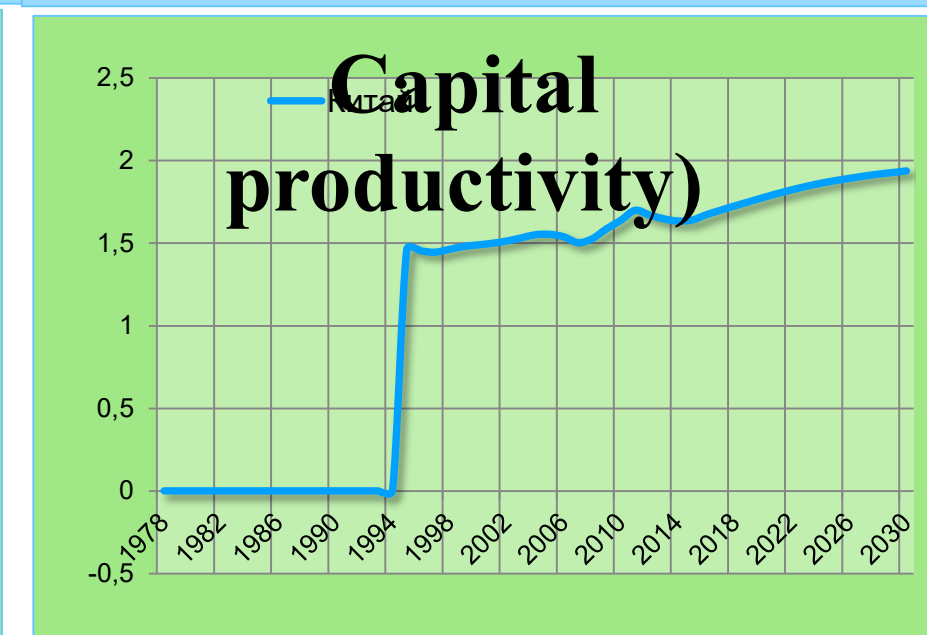
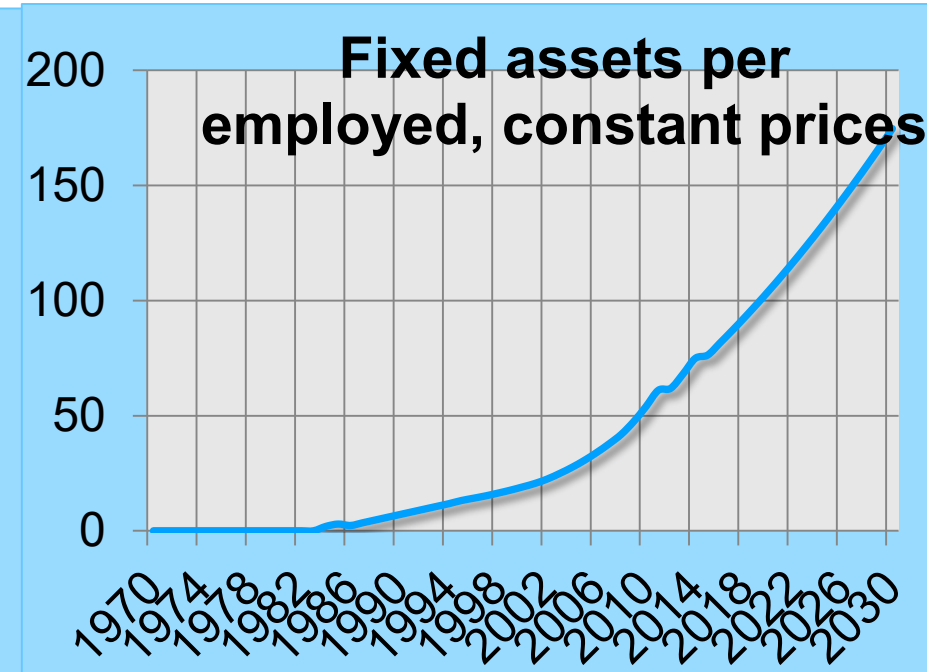
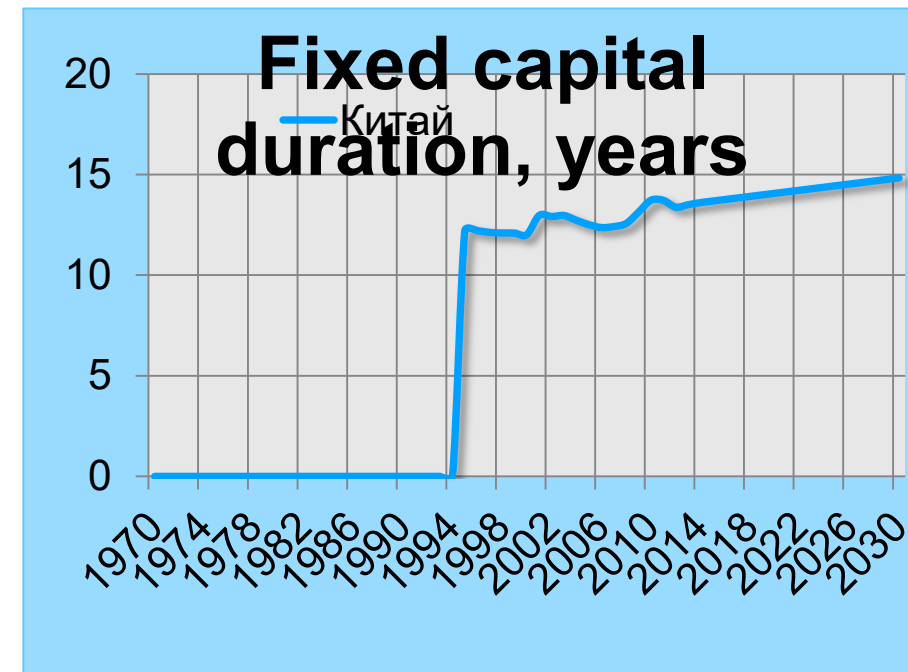
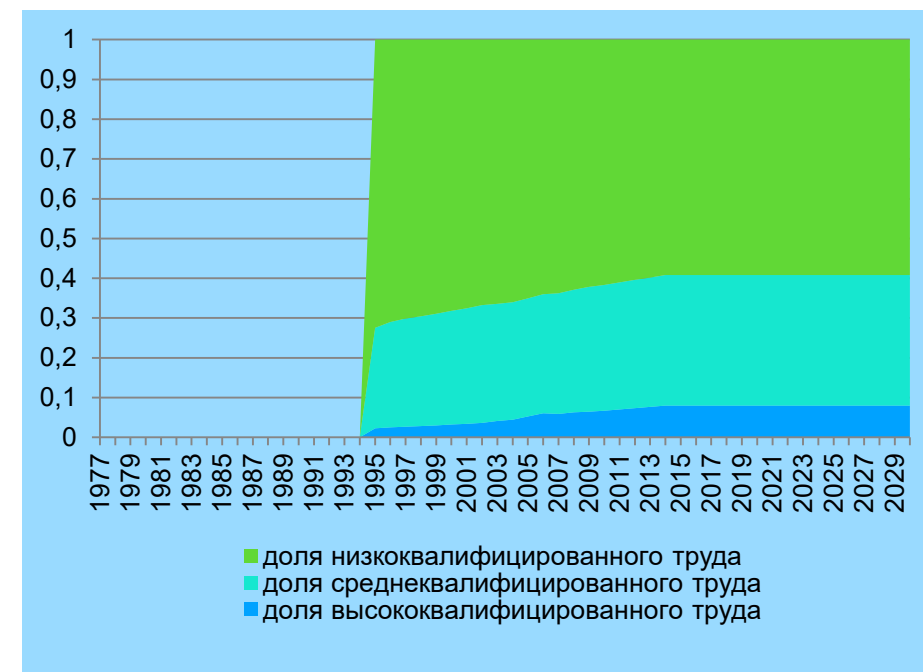
World economy seen through production function

Demography		
Unemployment		
Economically active population		
Technology growth rate		
Hours worked by one employee	2016-2045	56 countries, 89% of World GDP
Labor structure	scenario, setting	
High-quality labour	the goal and a	data from World Bank,
Mid-quality labour	linear trend to the	AMECO, OECD, WIOD
Low-quality labour	goal	Socio-Economic tables,
Fixed capital life duration		IMF, PENN WT 9
Fixed assets per employed		
HITEC assets share		
Amortization norm		
Investments to GDP		

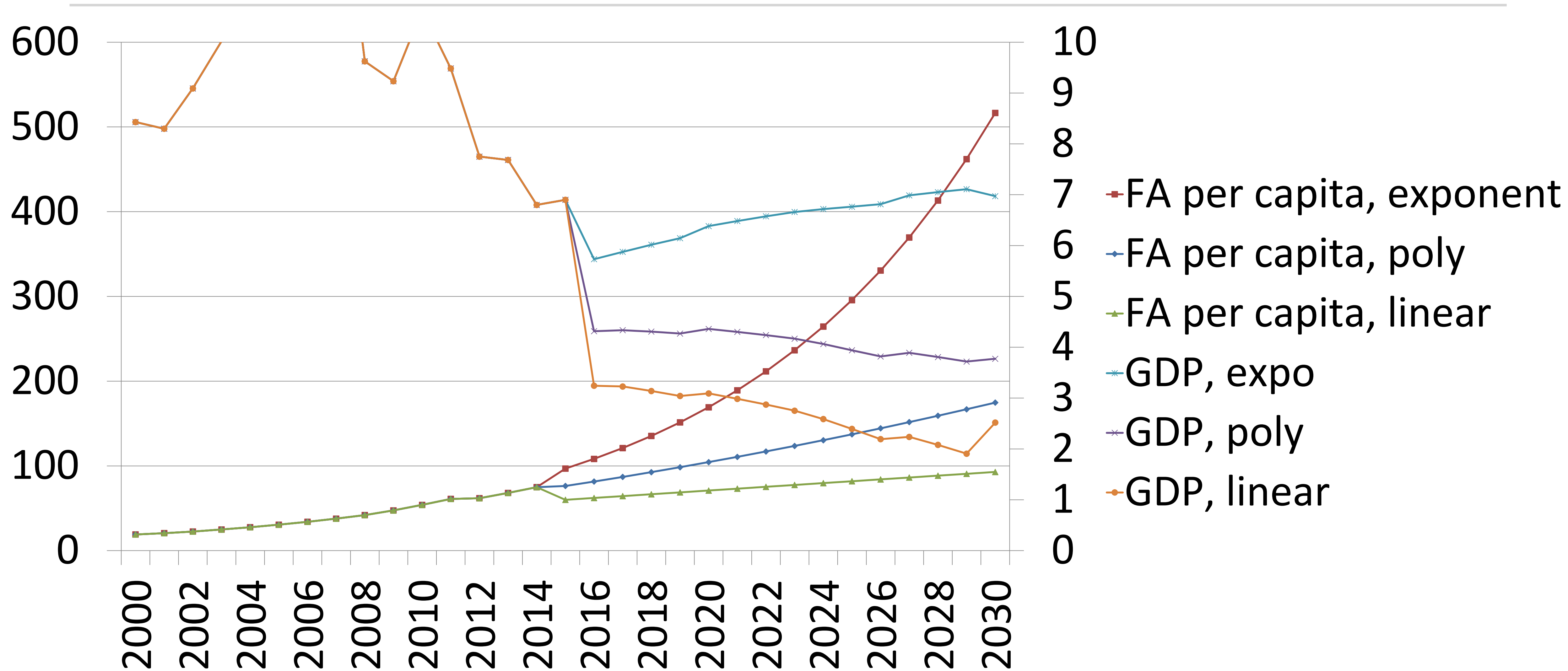
World economy seen through production function



Production function model for world economy, China



Fixed assets per employed – most important parameter for Chinese economy



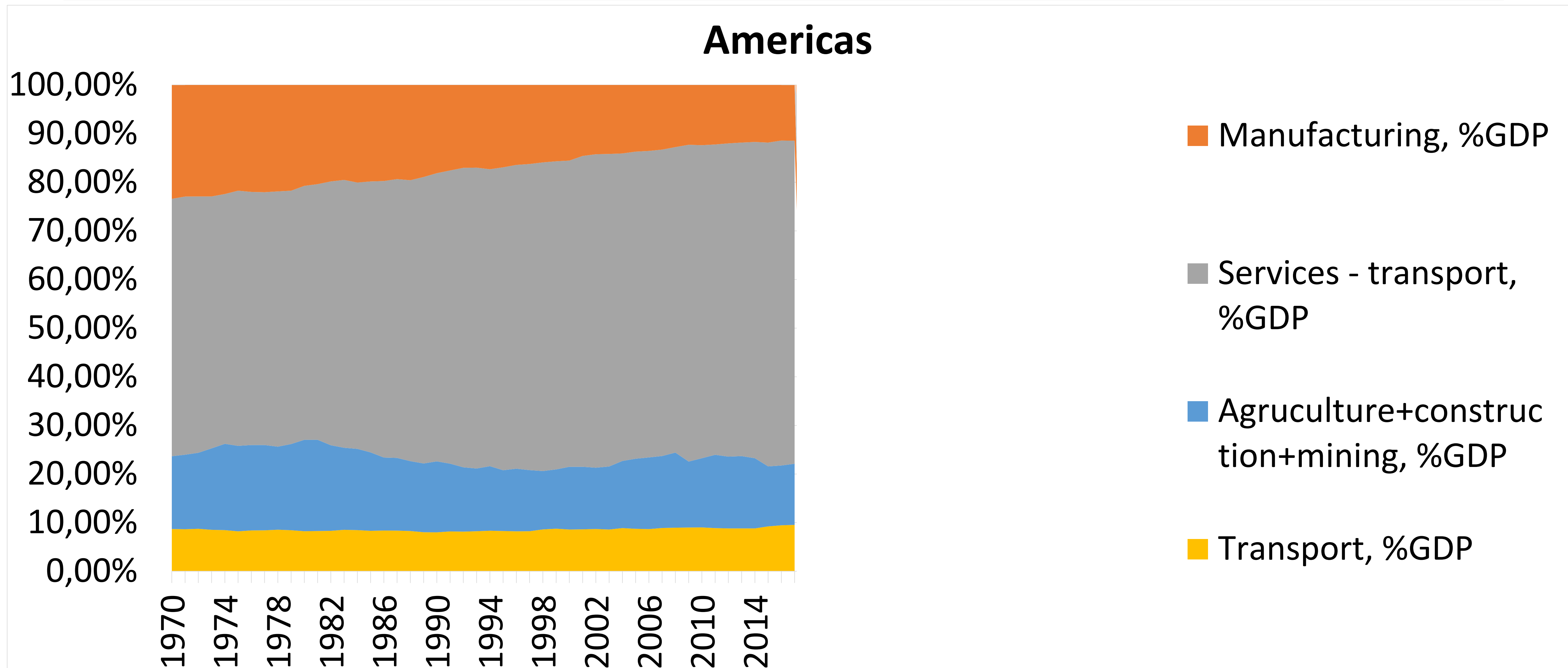
Negative coefficients are common

	TFP(t)	K	LQ L	MQ L	HQ L	Const	R2	Technology tempo
United States	0.87	0.81	0.18	0.75	-0.21	-6.35	1.00	1.83
China	1.71	0.56	-0.97	0.08	0.18	16.87	1.00	1.69
Japan	1.35	0.32	0.25	0.41	0.19	3.93	1.00	1.83
India	4.85	0.36	0.57	-0.56	0.09	6.79	1.00	1.83
Germany	0.21	0.88	0.33	0.53	0.09	-8.89	0.99	2.51
Russian Federation	2.14	0.09	0.00	3.19	0.22	-26.95	0.99	1.83
Brazil	0.00	0.58	0.19	-0.22	0.69	-1.75	0.99	1.00
United Kingdom	1.59	0.84	0.14	0.40	-0.11	-3.56	0.99	1.83
France	0.18	0.54	0.20	1.13	0.05	-7.41	0.98	1.83
Italy	0.00	1.05	0.13	0.56	0.06	-9.19	0.99	1.00
Mexico	0.00	0.77	0.00	0.00	0.00	2.46	0.99	1.00
Korea, Rep.	2.06	0.59	0.36	0.22	0.11	0.14	1.00	1.89
Canada	0.92	0.03	0.01	0.97	0.17	1.91	1.00	2.15
Spain	2.12	0.36	0.61	0.29	-0.37	2.08	1.00	1.83
Indonesia	2.13	0.99	-0.00	-2.46	1.04	13.32	0.82	1.83
Turkey	0.00	0.79	-0.68	1.18	-0.90	4.41	0.98	1.00
Australia	2.13	0.03	-0.05	0.49	0.04	8.12	1.00	1.83
Saudi Arabia	0.19	0.52	0.00	0.21	0.00	9.06	0.98	1.83
Poland	0.00	0.70	0.74	-1.31	0.86	2.98	0.99	1.00
Argentina	0.00	0.10	0.00	1.40	0.00	-12.59	0.95	1.00
Netherlands	0.00	0.66	0.13	0.56	0.17	-3.58	1.00	1.00
Thailand	1.19	0.52	0.00	0.51	0.00	0.23	1.00	1.83
South Africa	-1.13	0.63	0.00	0.73	0.00	-8.36	0.98	1.83
Egypt, Arab Rep.	1.77	0.52	0.00	-0.08	0.00	5.94	1.00	1.83
Pakistan	-0.37	1.54	0.00	-0.09	0.00	-9.62	1.00	1.83
Colombia	4.42	-0.15	0.00	0.15	0.00	18.67	1.00	1.83
Malaysia	5.52	-0.01	0.00	-0.26	0.00	13.69	0.99	1.83
Belgium	0.43	1.19	0.32	0.27	-0.06	-7.82	0.99	1.83
Nigeria	9.17	-0.18	0.00	-0.18	0.00	16.87	0.99	1.83
Philippines	5.17	-0.27	0.00	0.29	0.00	14.36	0.99	1.83
Sweden	1.41	0.12	0.04	0.49	0.21	6.46	0.99	1.83
Venezuela, RB	-3.22	-0.49	0.00	2.21	0.00	-20.09	0.96	1.83
Austria	1.03	0.77	0.39	0.38	-0.02	-4.25	1.00	1.83
Denmark	-0.98	1.33	0.05	0.64	0.02	-11.08	0.99	1.83
Finland	0.00	-1.27	-0.50	0.74	0.84	19.79	0.98	1.00
Norway	2.24	0.20	0.00	0.02	0.00	10.02	0.99	1.83
Switzerland	1.52	-0.04	0.00	0.25	0.00	10.80	0.99	1.83

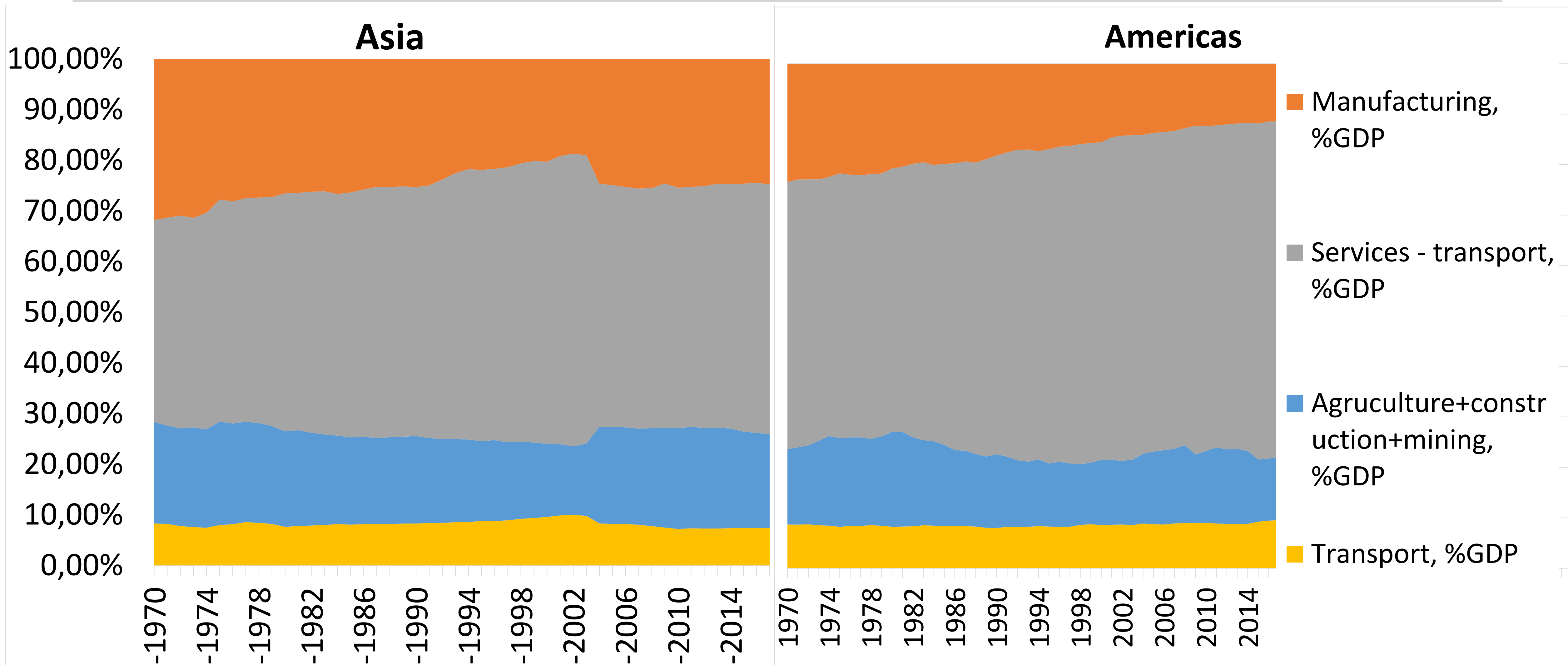
2.

proportions of creating
value added
in the world economy.

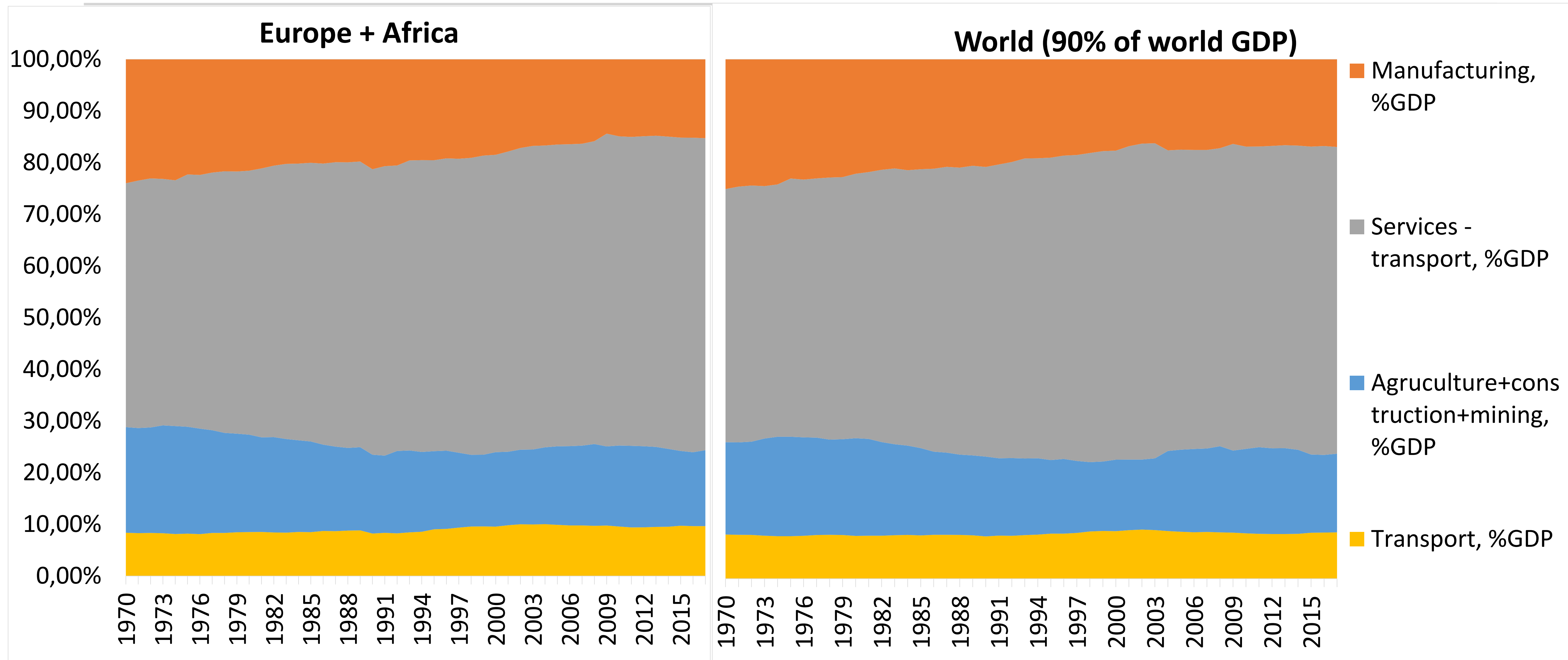
Value added creation structure



Complementarity between hemispheres



Stable structures



1. Aggregated sectors are hitting the ceiling in their shares.
2. Tertiary industry (services) had long been growing due to secondary (manufacturing) industries contraction. UNTIL recently. Europe: until 2008. Asia – until 2004. Americas – until 2015.
3. Tertiary sector grows now much slower due to primary sector contraction.
4. Heavy restructuring of value added production in certain country usually means transfer of productive capital into other countries.

Programmers need to eat, too

Let's call it services, not production

Let's mine less and educate more

Who's washing the dishes?

3.

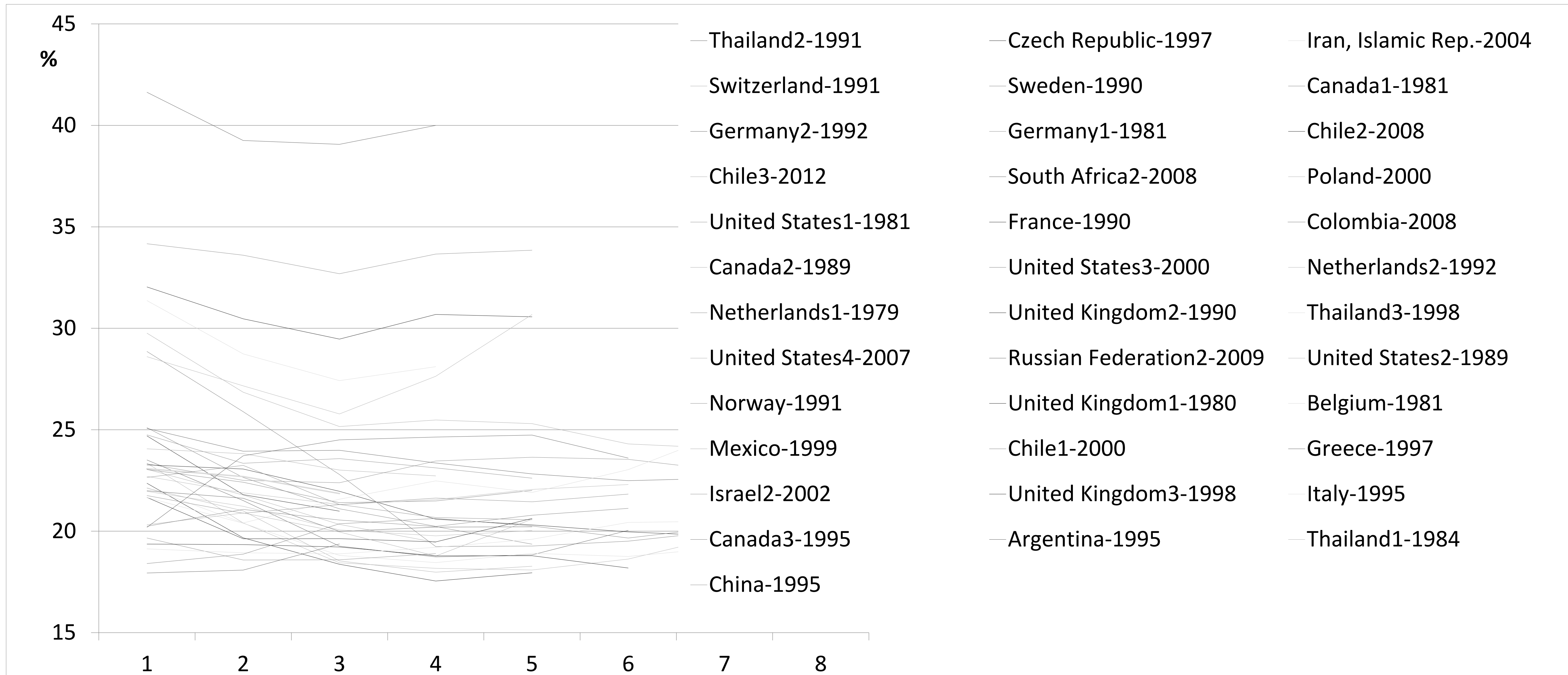
between
violence and trust

$PQ=MV$?

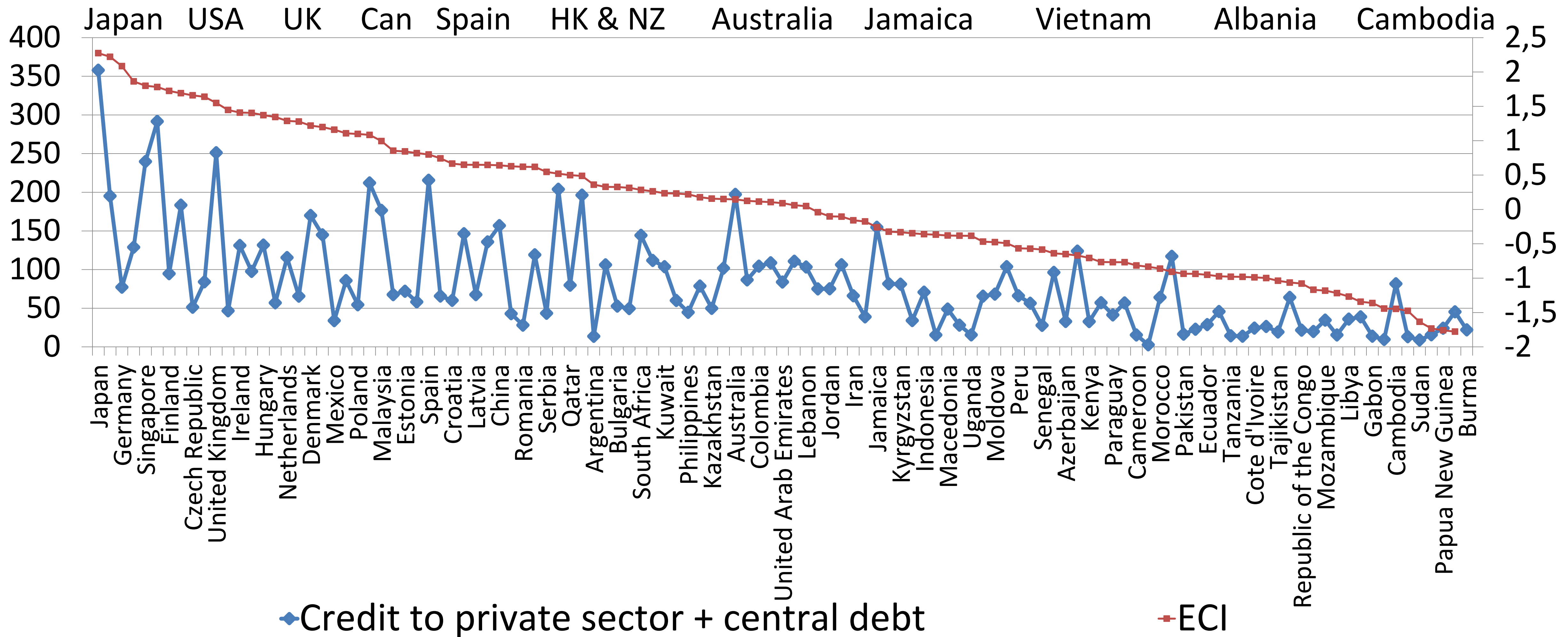
- 1. P is not prices or deflator.**
- 2. Q is not volume or constant prices growth.**
- 3. V is not velocity or monetary turnover.**
- 4. Is M a nominal monetary mass? HARDLY.**

What is missing? TIME & MOTIVATION

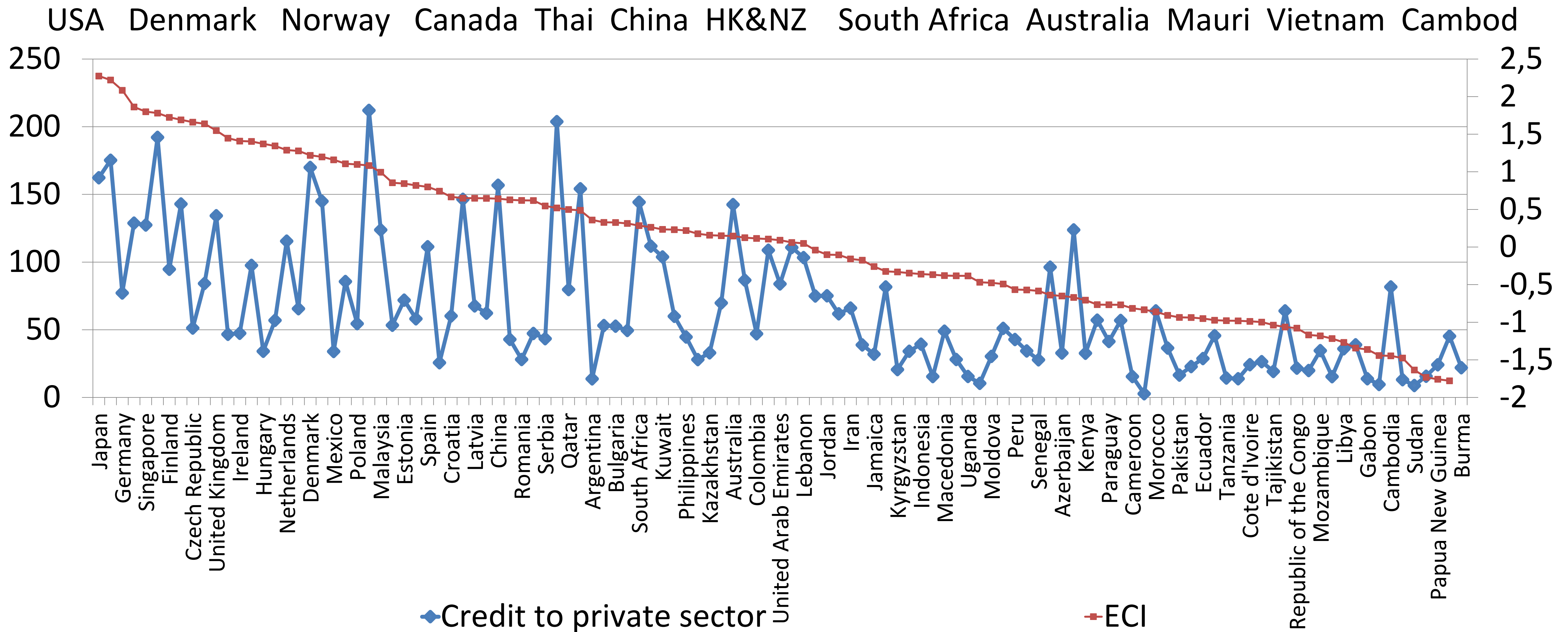
Three years at least to adjust for cost of money



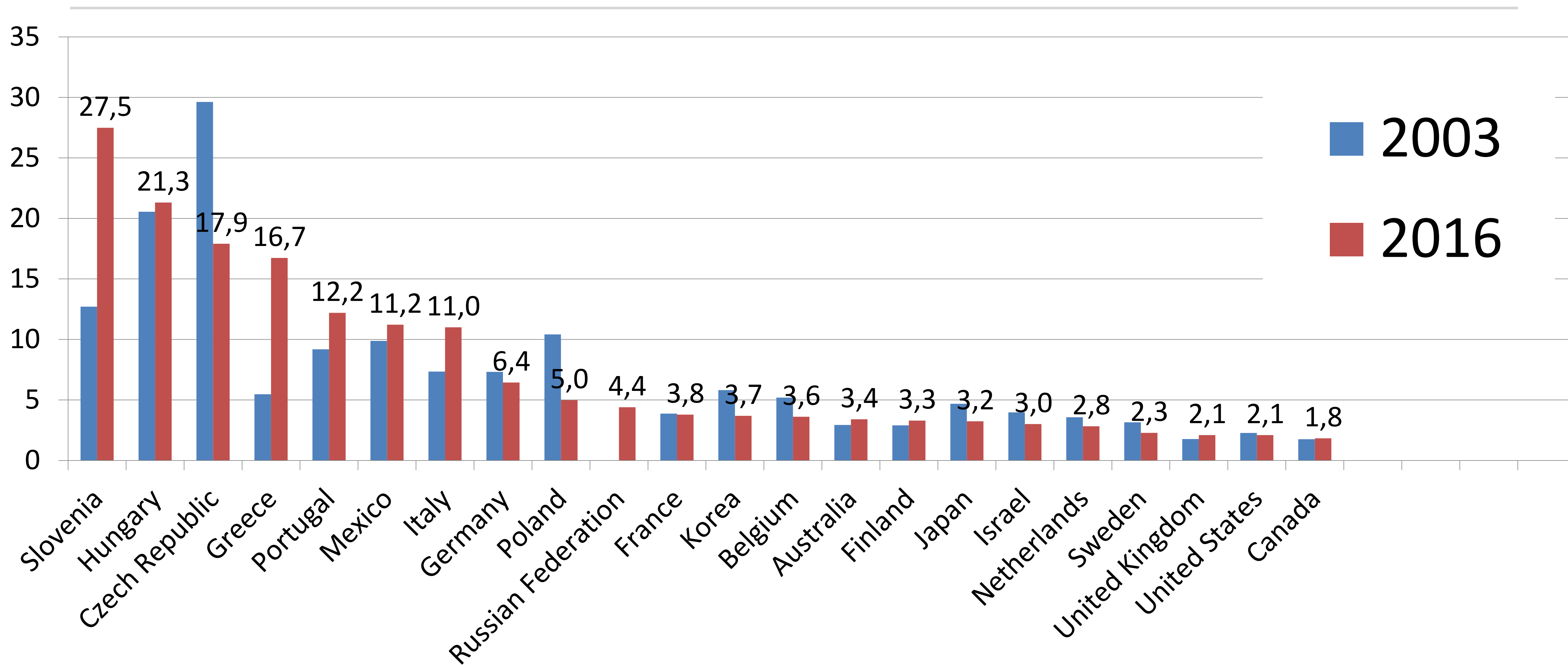
Total domestic credit vs. ECI. Violence and trust



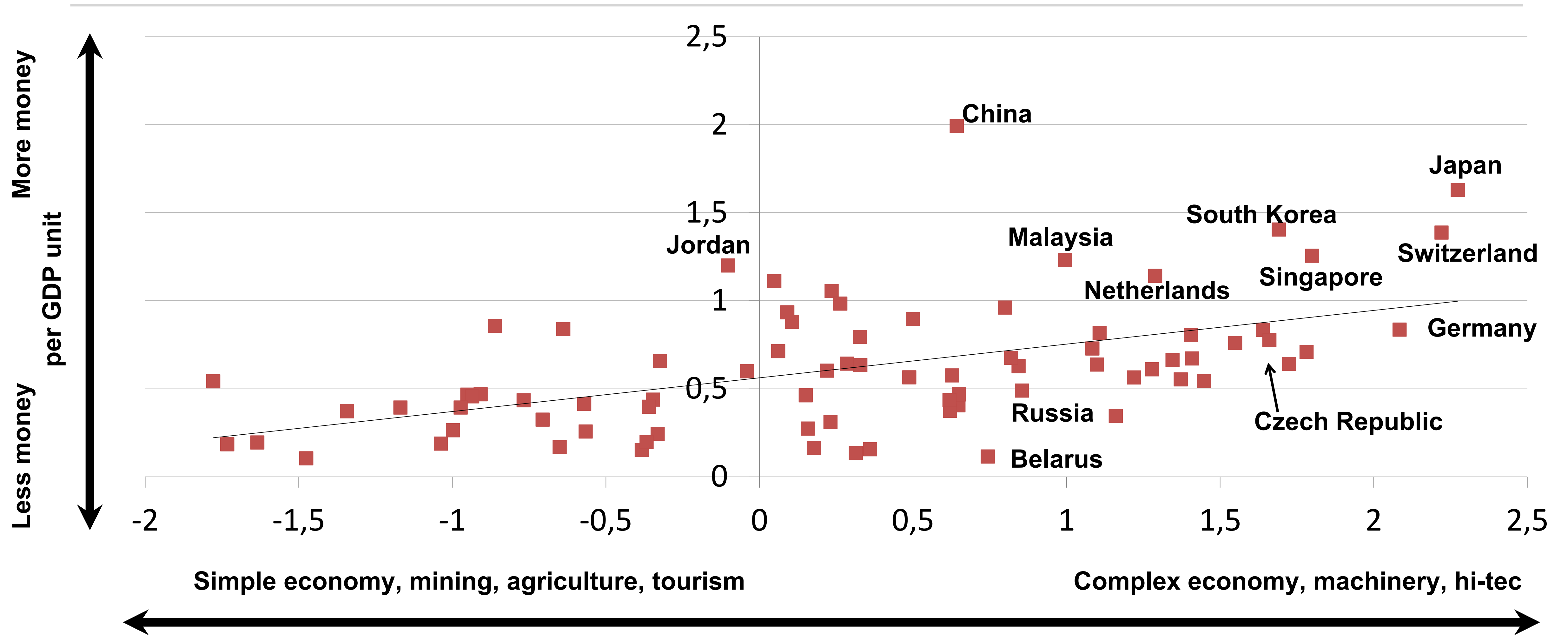
Private credit vs. ECI. Confidence put into economy.



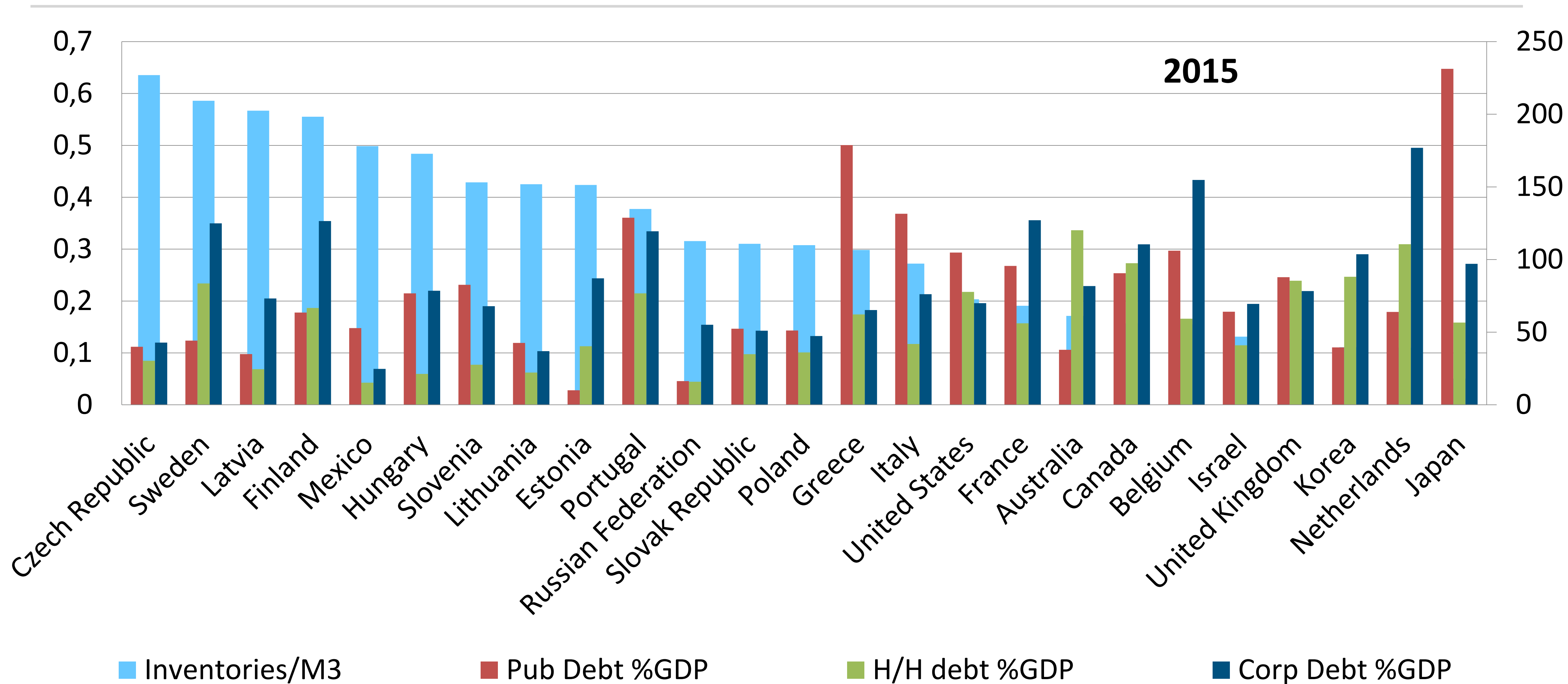
Fixed assets to market cap, 2003 vs 2016.



Economic complexity (X) and GDP monetization (M2/GDP) (Y) in 2016



Inventories / M3 vs. various debt generation sources



Thank you!

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