Technological and social factors in development: The importance of capability building

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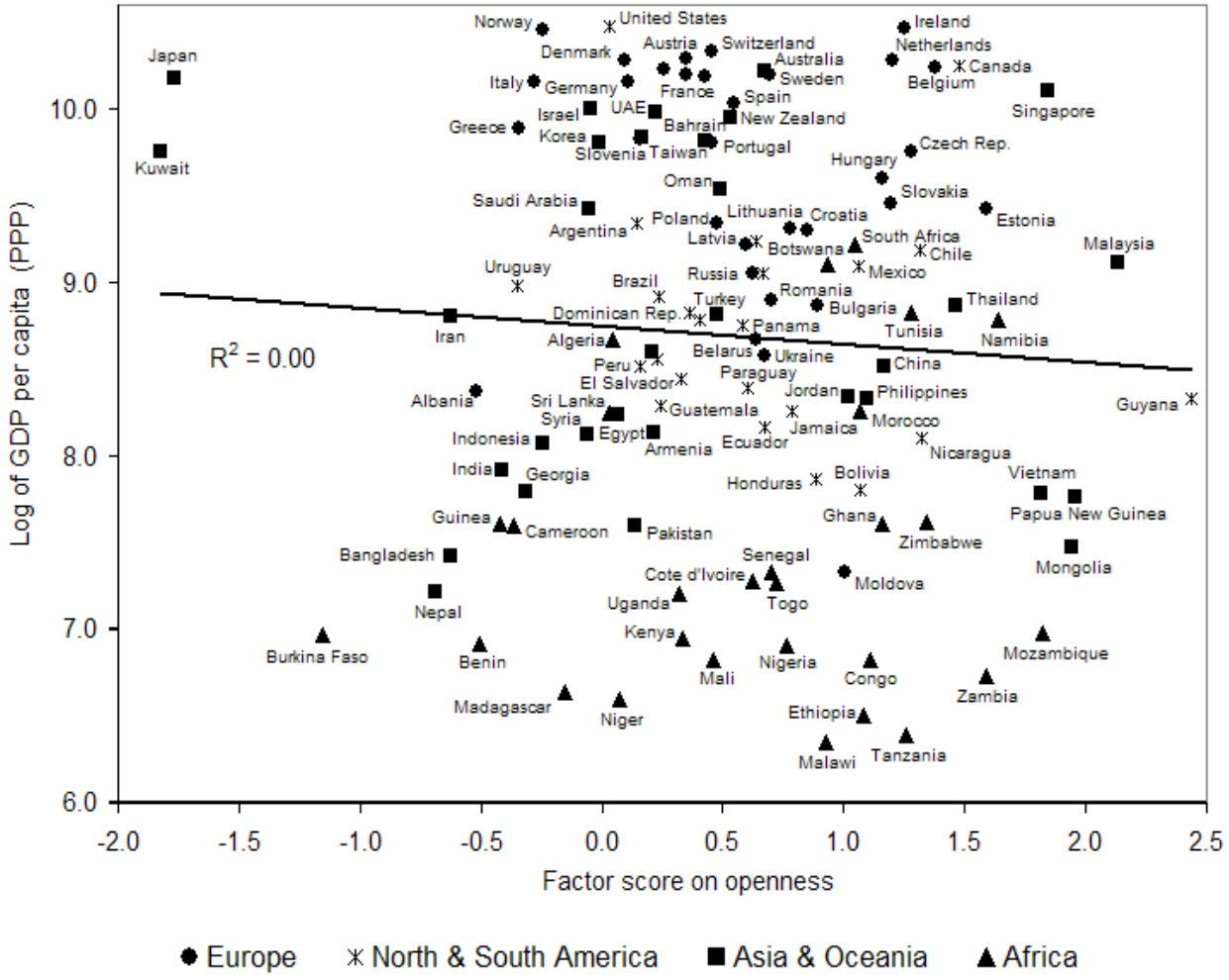
Catching up: Some people ("Washington consensus") think that

- **"Openness"** to trade and FDI and Western-type institutions does the trick
- But supporting **evidence is weak** (and contradictory)
- "Openness" to **trade and FDI** do not discriminate between those who make it and those that don't



Source: Fagerberg and Srholec, Research Policy, 2008

Why the “openness”/”westernization” story is misleading

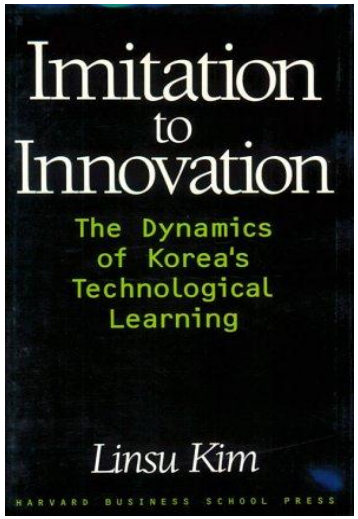
- Rests on the idea that **“knowledge”,** largely created in the west, is the source of long-run economic growth in the global economy
- And that this knowledge is **easy** to tap into if you mimic “Western” institutions and allow for “openness”
- But it is **not easy!** Knowledge is widely **distributed** (actors/contexts). Impossible to know **everything** (so-called “perfect” knowledge). **Costly search necessary**
- **Capabilities** for doing so critical
- Not obvious that lack of **access** to the global knowledge pool is an important **constraint** to growth.

Capabilities: ”technological” and “social”

Technological capabilities

Linsu Kim (1997):

“*the ability to make **effective use of technological knowledge** in efforts to **assimilate, use, adapt and change existing technologies**”*



-**Innovation** capabilty
-**Production** capability
-**Finance** capability

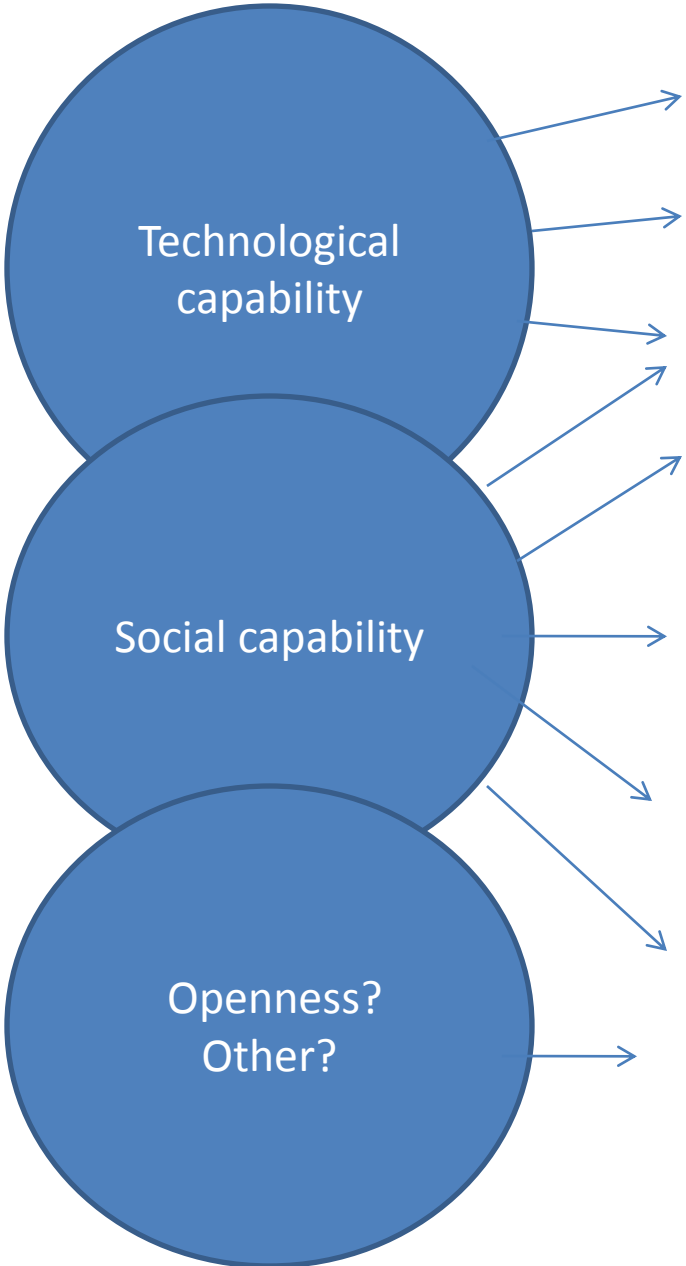
Social capabilities

Moses Abramovitz (1994):

*”Countries’ levels of general **education** and technical competence, the commercial, industrial and financial **institutions** (...) and the **political and social characteristics** that influence the risks, the incentives and the personal rewards of economic activity”*

Moses Abramovitz

Can capabilities be measured?



Dimension	Measure
Innovation capability	Scientific publications, R&D and patents
Production capability	International (ISO) standards, telecommunication, internet
Finance capability	Access to bank credit, stock-market
Education	Primary, secondary and tertiary education
Political characteristics: **governance**	Corruption, law and order, independence of courts, property rights, business friendly regulation,
Political characteristics: **system**	Degree of “western democracy”
Social characteristics	Honesty, trust, tolerance , cooperative behaviour
Openness?	Openness to trade, foreign direct investment, **other?**

Factor analysis

115 countries 1992-2004, 25 indicators

(*Fagerberg and Srholec, Research Policy, 2008*)

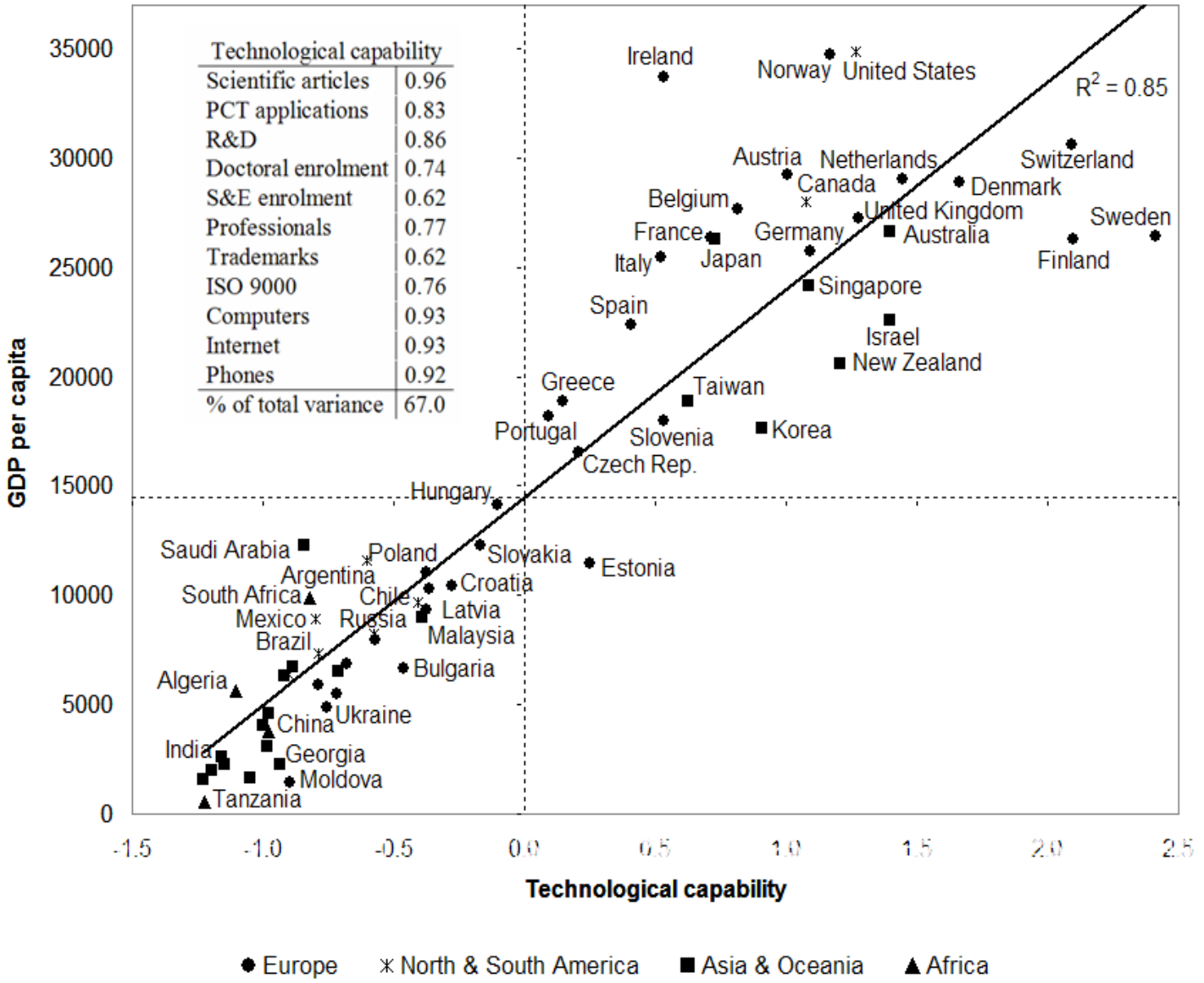
	Innovation system	Gover-nance	Western Politial system	Openness to trade & FDI
USPTO patents (per capita)	0.63	0.33	0.14	-0.08
Science & engineering articles (per capita)	0.63	0.42	0.06	-0.12
ISO 9000 certifications (per capita)	0.81	0.04	0.00	0.26
Fixed line and mobile phone (per capita)	0.94	0.00	0.03	0.06
Internet users (per capita)	0.81	-0.18	0.09	0.31
Personal computers (per capita)	0.79	0.17	0.00	0.17
Primary school teacher-pupil ratio	0.82	0.17	-0.10	-0.18
Secondary school enrolment (% gross)	0.92	-0.07	0.03	-0.13
Tertiary school enrolment (% gross)	0.95	-0.09	0.08	-0.18
Domestic credit to private sector (% of GDP)	0.47	0.44	0.00	0.09
Market capitalization, companies(% of GDP)	0.46	0.32	0.05	0.21
Impartial courts	-0.09	0.88	-0.04	-0.07
Law and order	0.21	0.59	-0.07	0.00
Property rights	0.00	0.87	0.16	0.01
(Innovation friendly) regulation of business	0.11	0.71	0.04	0.00
Degree of corruption	0.27	0.67	-0.03	0.21
Index of democracy (versus autocracy)	-0.04	-0.03	0.96	-0.03
Degree of constraints on policy changes	0.09	0.02	0.80	-0.03
Degree of competition for seats in legislature	-0.02	-0.20	0.84	0.00
Degree of competition for government posts	0.08	-0.23	0.84	0.07
Political rights	-0.01	0.22	0.89	-0.02
Civil liberties	0.01	0.27	0.82	0.04
Merchandise imports (% of GDP)	-0.11	0.04	-0.12	0.77
Foreign direct investment (% of GDP)	0.05	-0.01	0.10	0.85

Regression results(OLS) **Beta coefficients, **, *** denote significance at the 5 and 1 percent levels**	**Level of GDP per capita, Average 2002-2004**	**Growth of GDP per capita, Annual average 1992-2004**	**Growth of GDP per capita , Stepwise regression excl. the poorest half**
Log of initial GDP per capita		-0.76**	-0.89***
Innovation system	0.85***	0.74**	0.56**
Δ innovation system		0.48***	0.30**
Governance	0.16***	0.39***	0.43**
Δ governance		0.38***	NS
Political system	-0.04	0.07	0.34***
Δ political system		0.12	0.24**
Openness	0.04	0.07	0.37***
Δ openness		0.03	NS
Geography, nature and history	No	NO	Yes
R^2	0.90	0.30	0.73
Observations	115	115	57

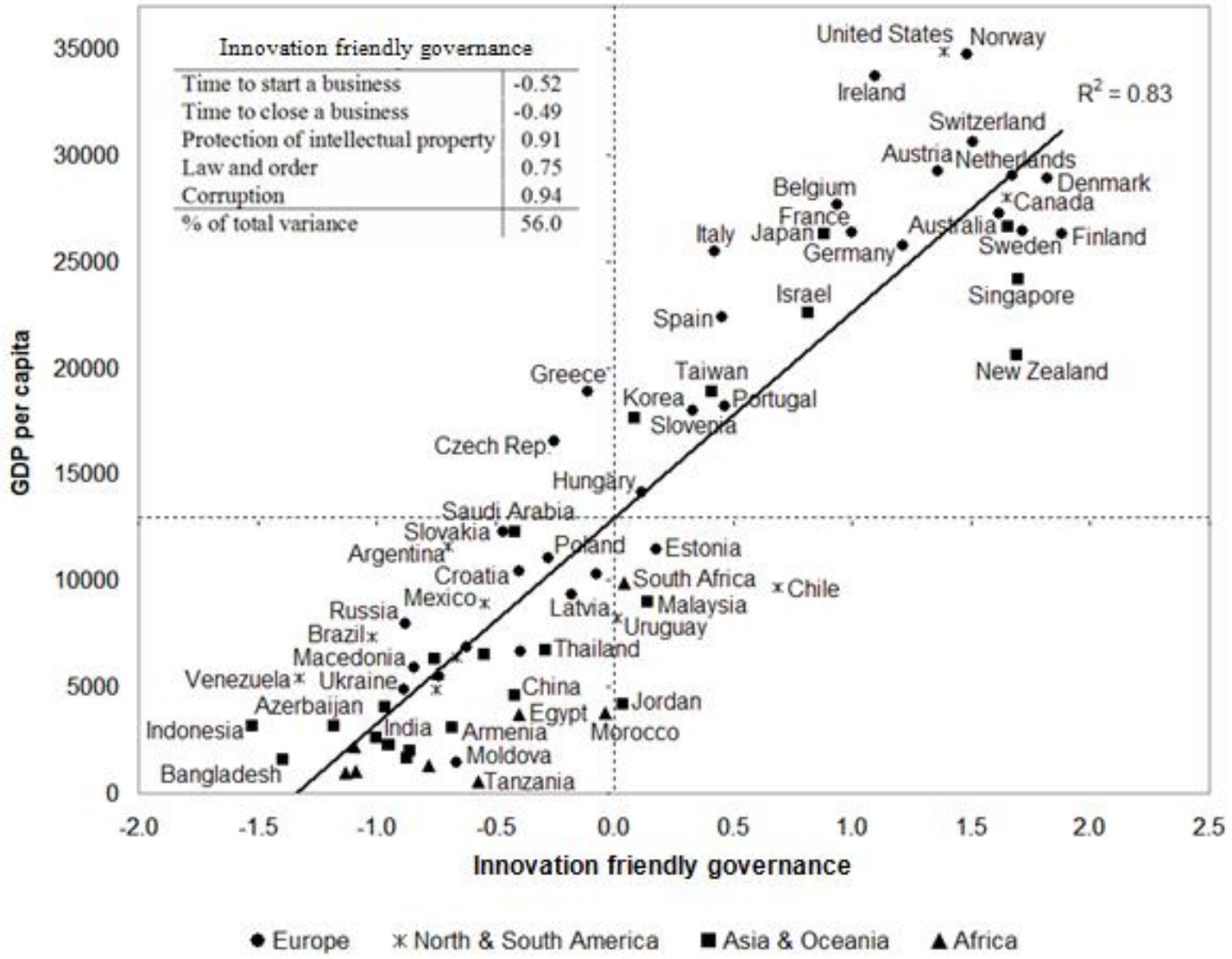
Capabilities & openness reconsidered: What are the critical factors?

- Building a well functioning **Innovation system**
- Supported by **innovation friendly governance**
- Western type **political system** & **openness to trade and FDI** good for already developed countries but **less critical** for developing countries
- Is this the only "openness" that matters?
- System level openness (75 countries 2002-4): "**Openness to ideas", "openness to business**" (new initiatives) and "**openness to people**" (diversity)

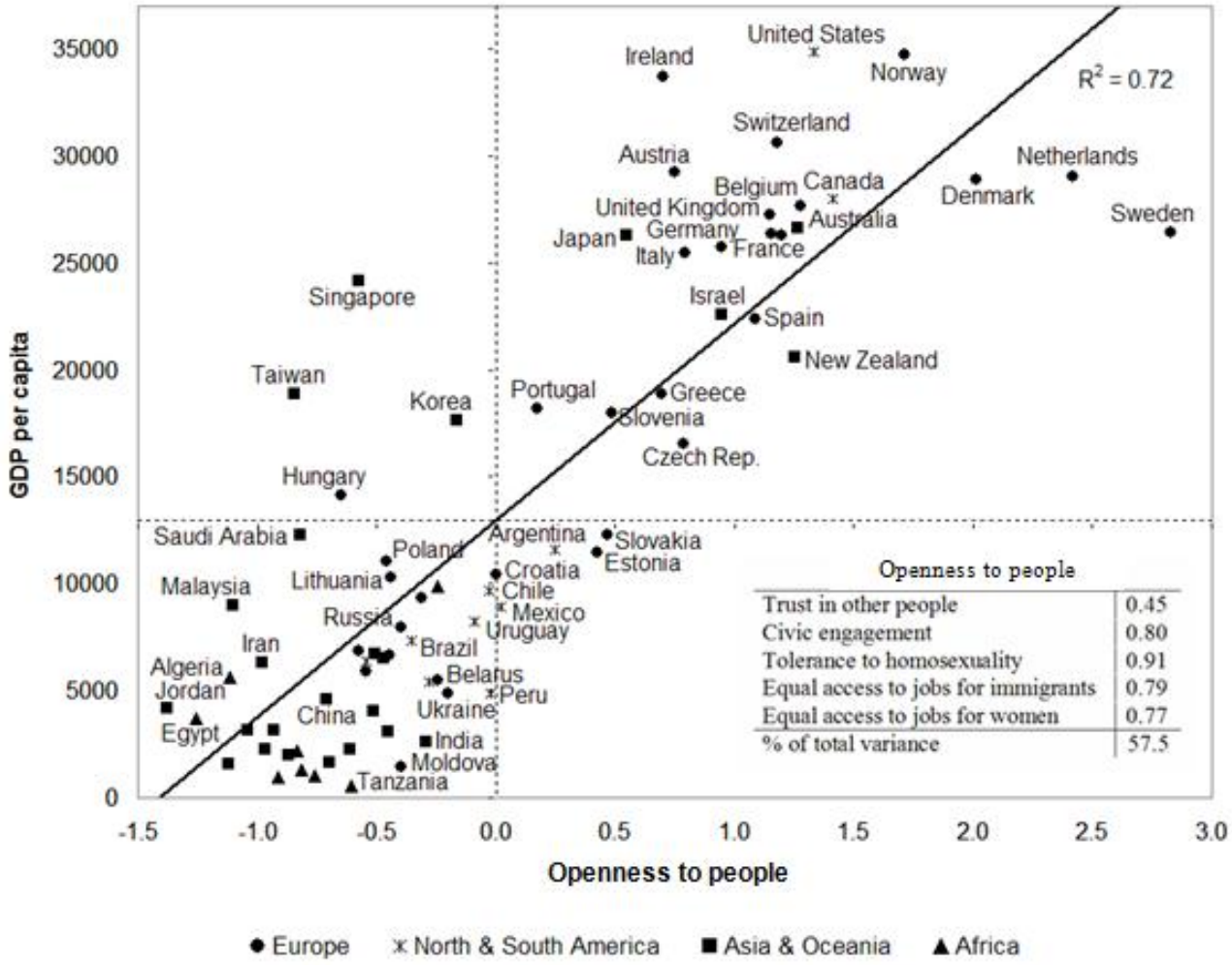
Openness to ideas & GDP per capita



Openness to Business



Openness to people



Lessons

- Countries that manage to develop well functioning innovation systems and innovation friendly governance make it
- Those that fail are left behind
- Openness to trade/FDI and mimicking Western institutions no guarantee to avoid the low growth trap
- Openness to ideas, entrepreneurs and people (that are different from yourself) much more important
- Lack of such openness may severely constrain development in large parts of the world