

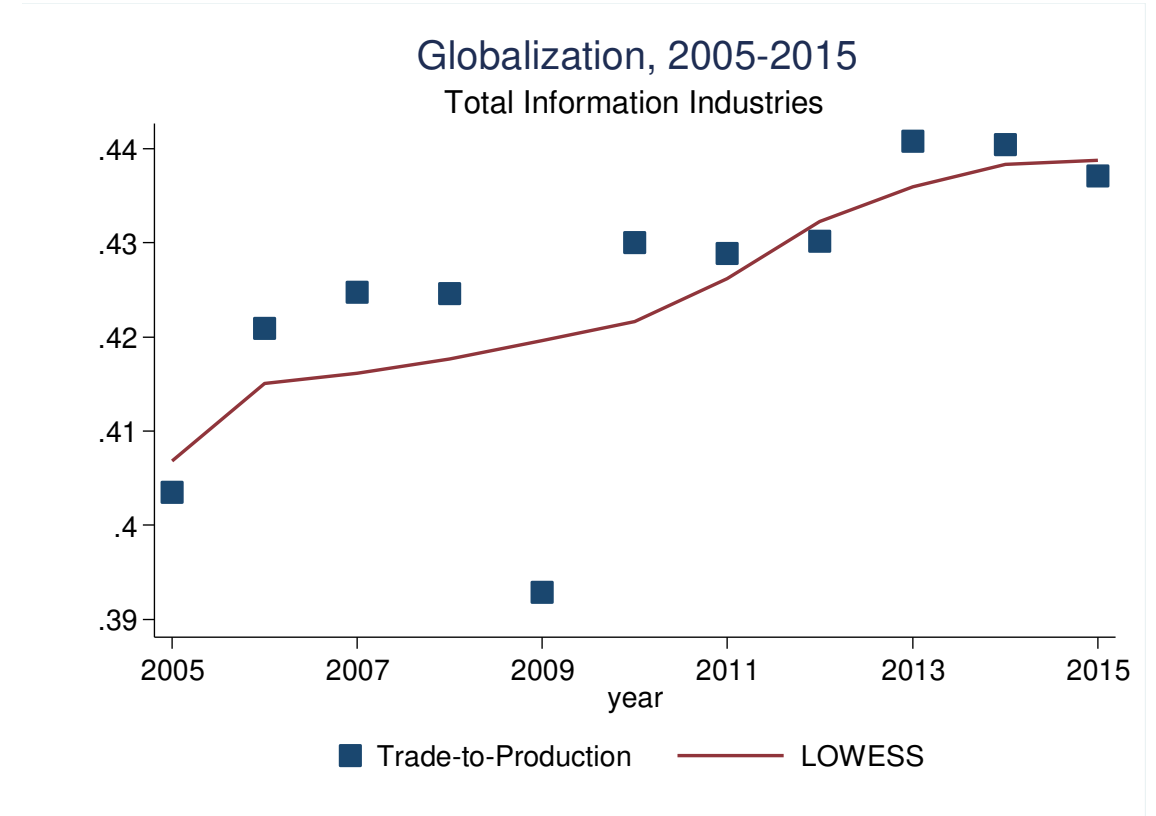
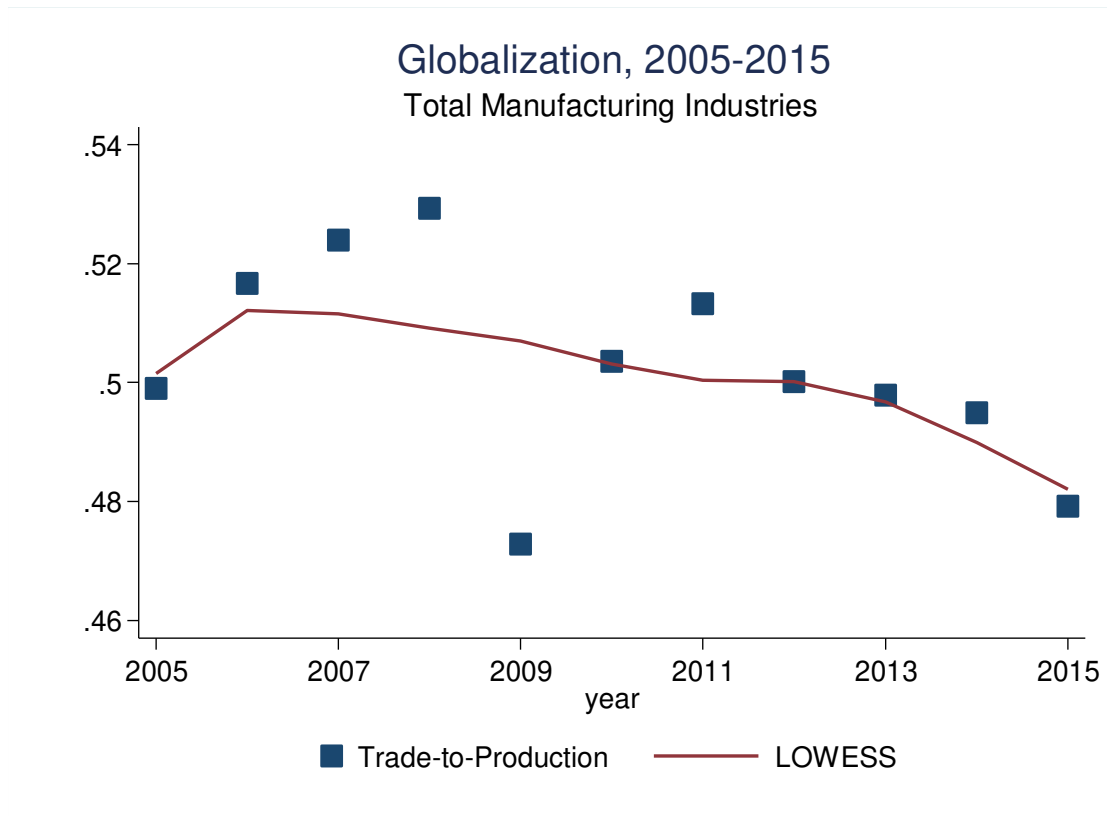
# **Data and Services Trade: Regulatory Options for a New Globalization**

Erik van der Marel – ECIPE & ULB ECARES

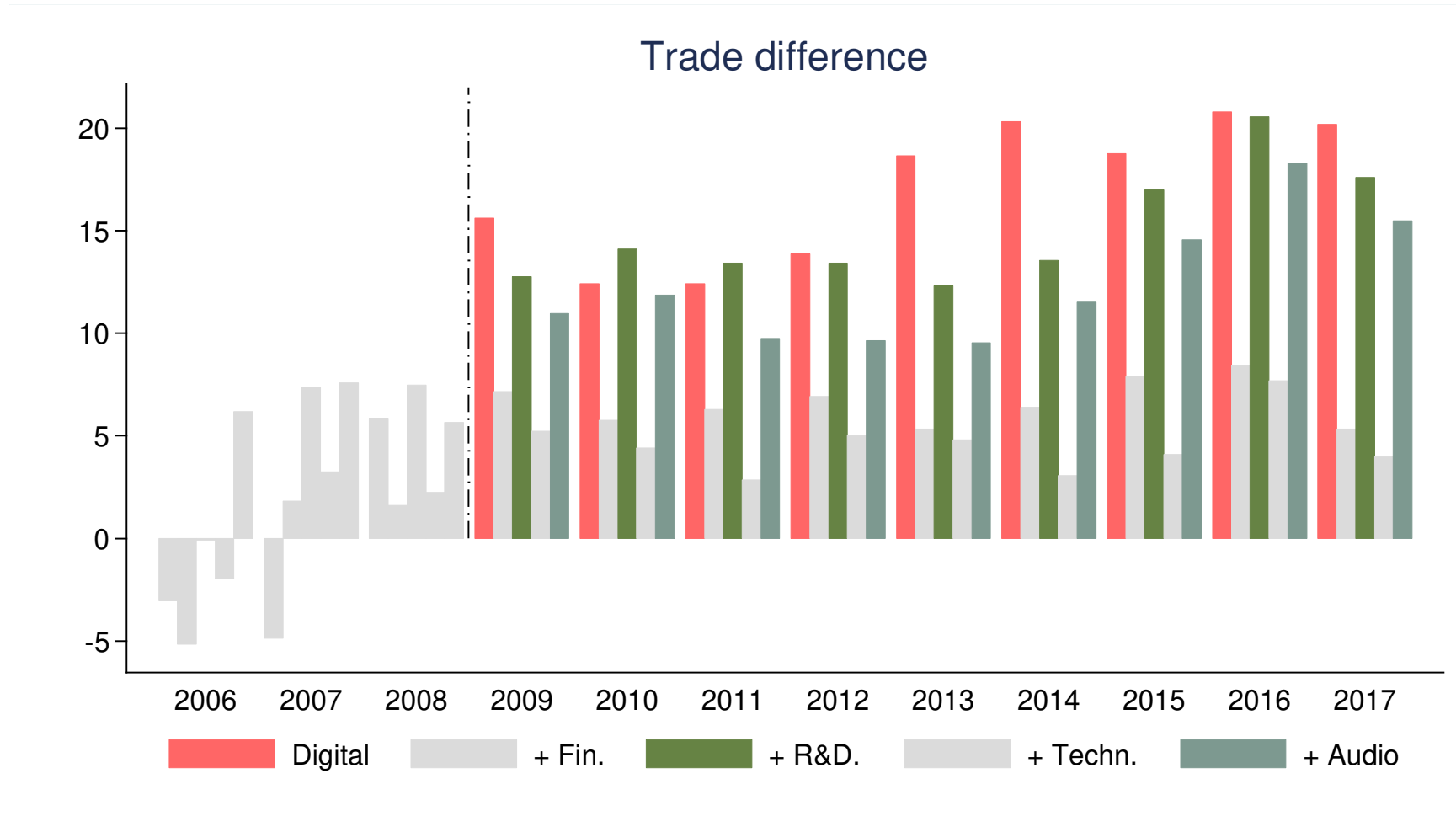
**IIFT ECONOMICS SOCIETY (IES)**

November 15, 2021

# Digital-based globalization was already underway



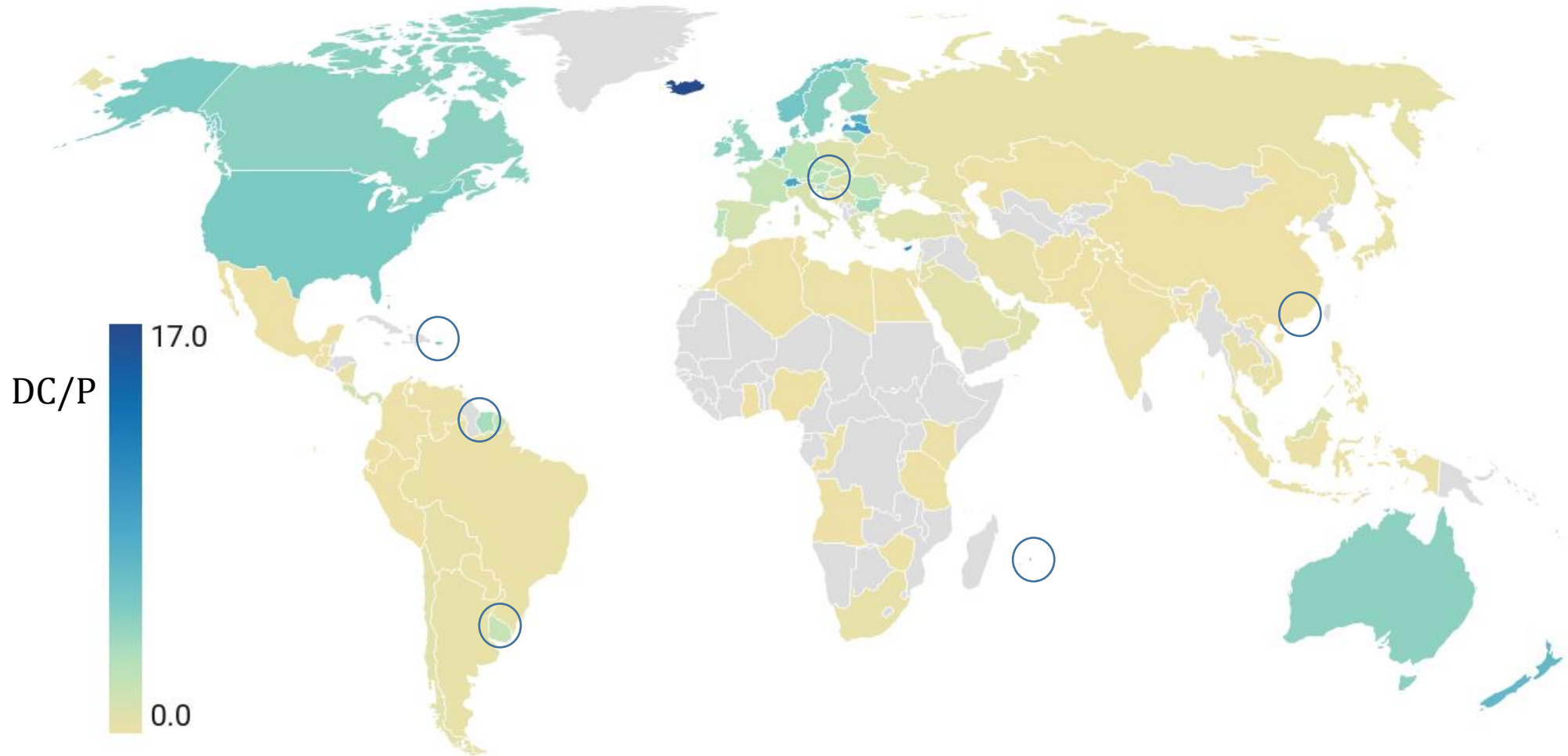
# Trade increasingly based on intangibles



# Implication

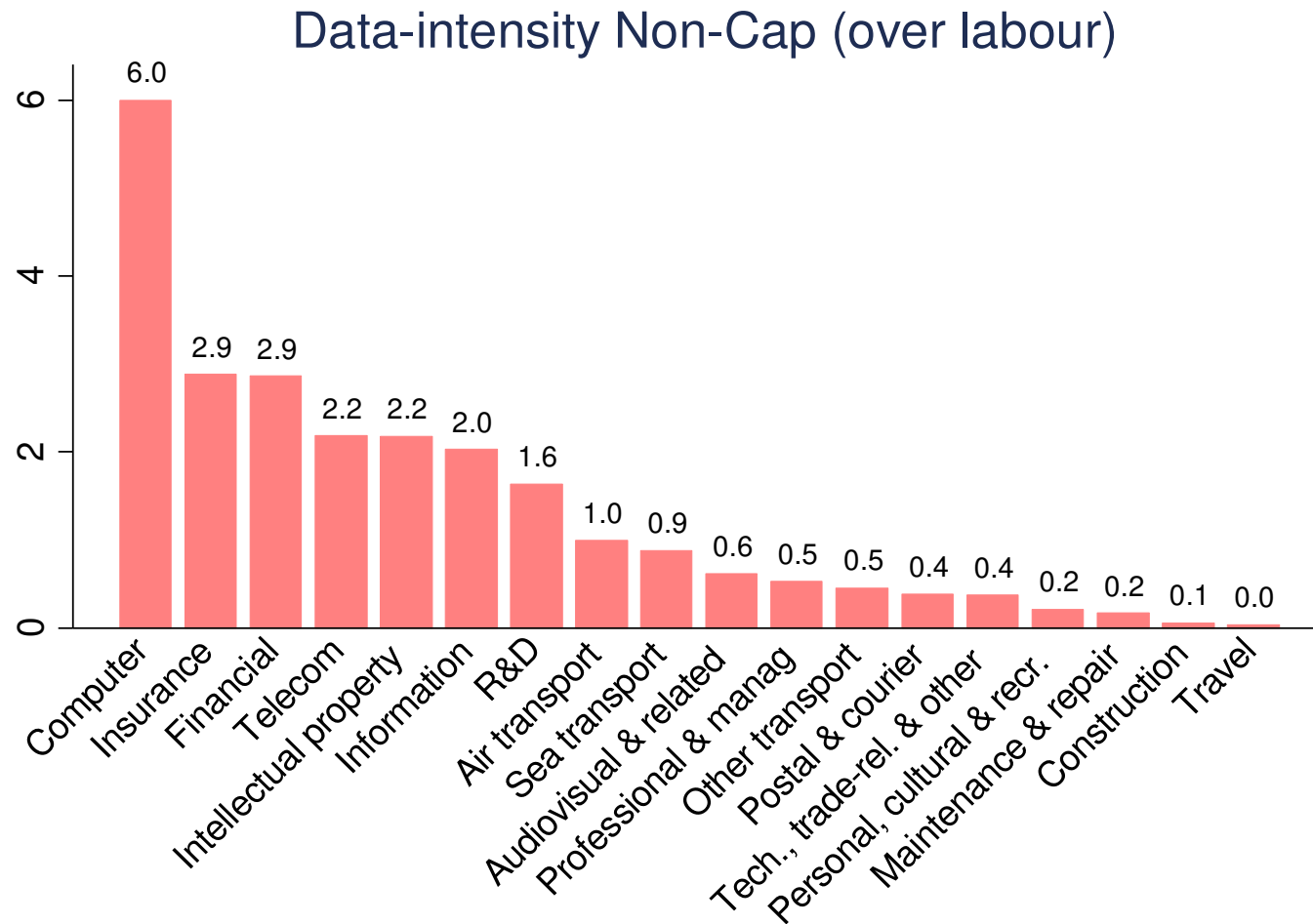
- New intangible “factors” giving rise to trade (HO)
- New technologies, new comparative advantages
  - MGI (2016): data as a flow. Data as a factor?

# Data centres (DC) (per 1 Mln population)

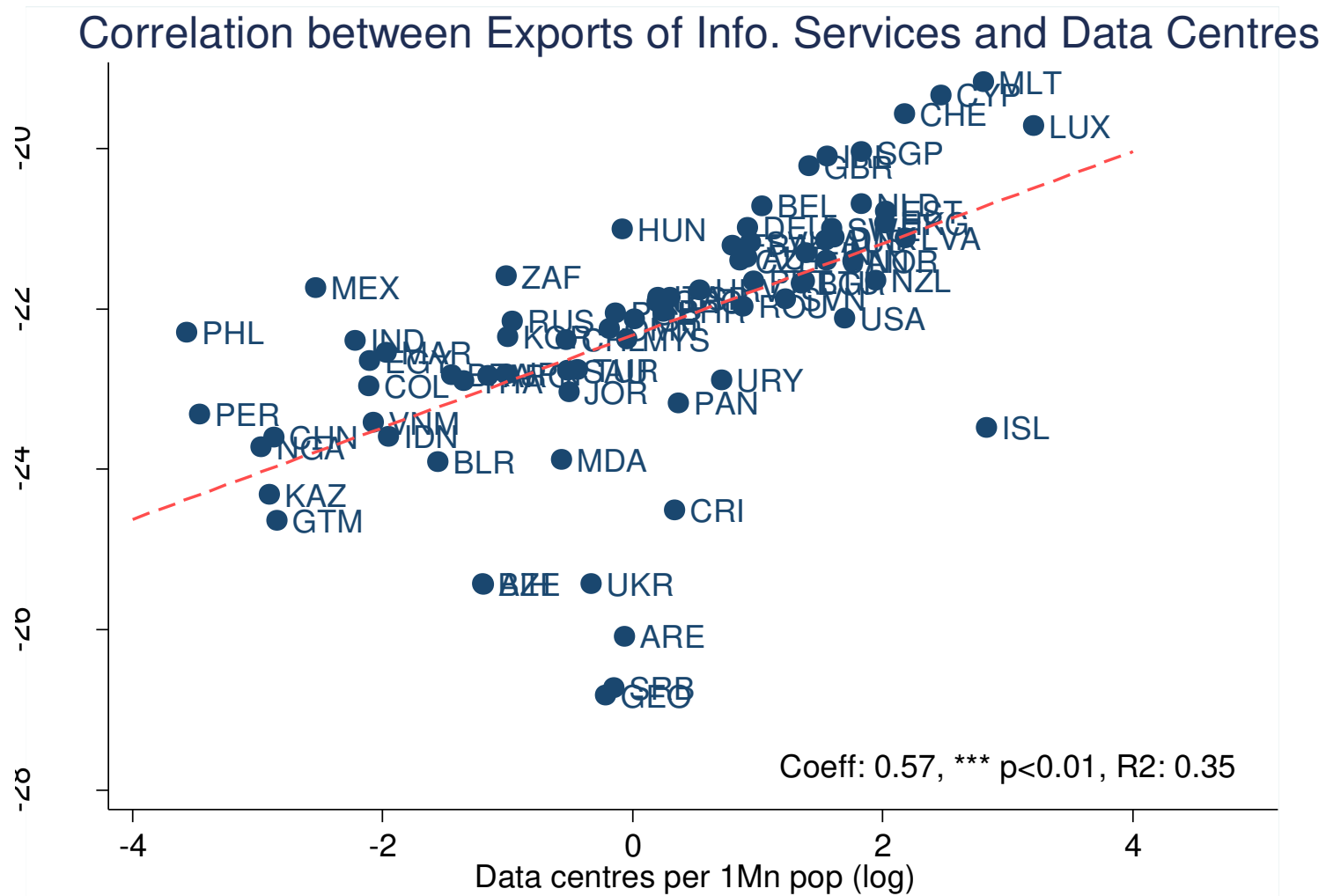


Source: Data Centre Map

# Software-intensities Ferracane and van der Marel (2021)



# Data centres and digital services trade



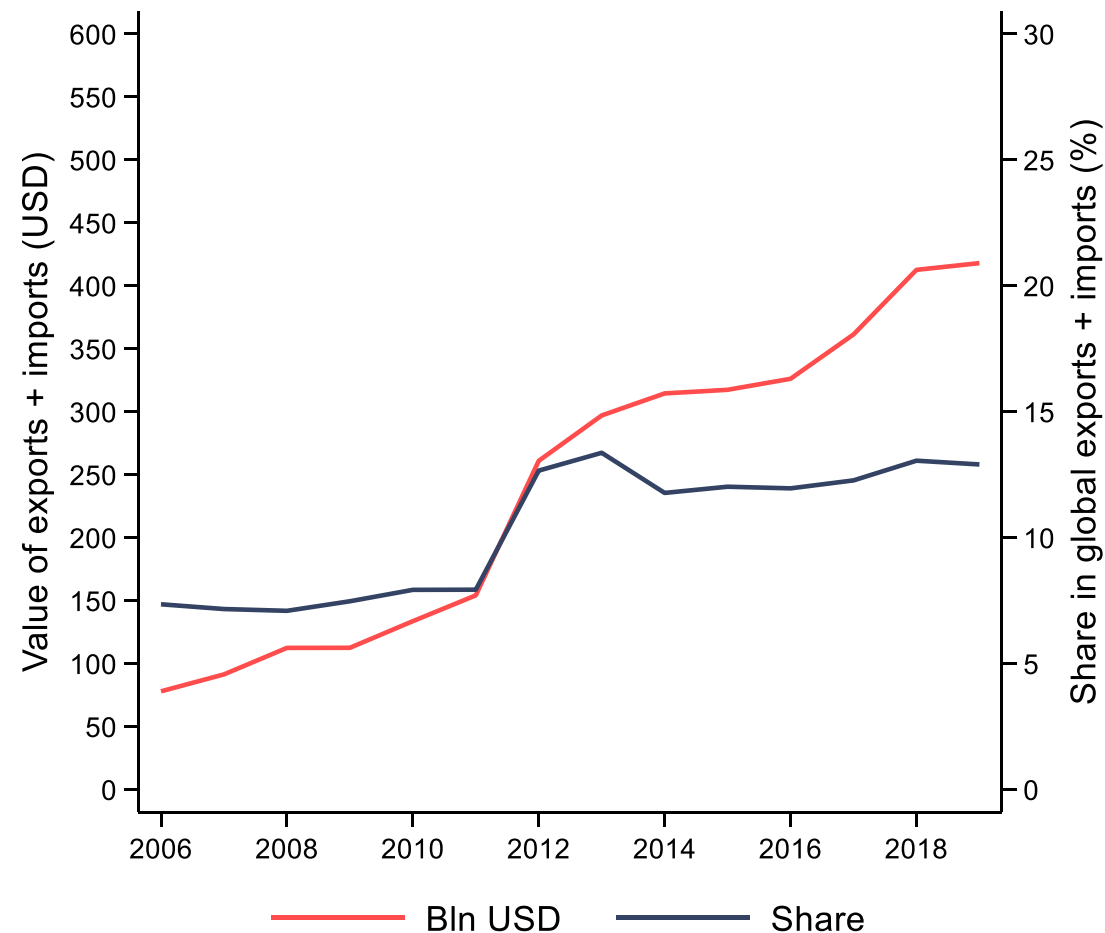
# Baseline results (data matters for comparative advantage)

	(1) $\ln(\text{SX})_{cj}$	(2) $\ln(\text{SX})_{cj}$	(3) $\ln(\text{SX})_{cj}$
$\ln(\text{D/L})_j * \ln(\text{DC/P})_c$	0.048** (0.047)		
$\ln(\text{D/L})_j * \ln(\text{IXP/P})_c$		-0.021 (0.328)	
$\ln(\text{D/L})_j * \ln(\text{SIS/P})_c$			0.042*** (0.003)
$\ln(\text{D/L})_j * \ln(\text{GDPpc PPP})_c$	0.049 (0.396)	0.194*** (0.001)	0.004 (0.926)
FE Exporter	Yes	Yes	Yes
FE Sector	Yes	Yes	Yes
Observations	1426	1071	1778
R2A	0.877	0.891	0.880
R2W	0.018	0.033	0.016
RMSE	1.218	1.035	1.302

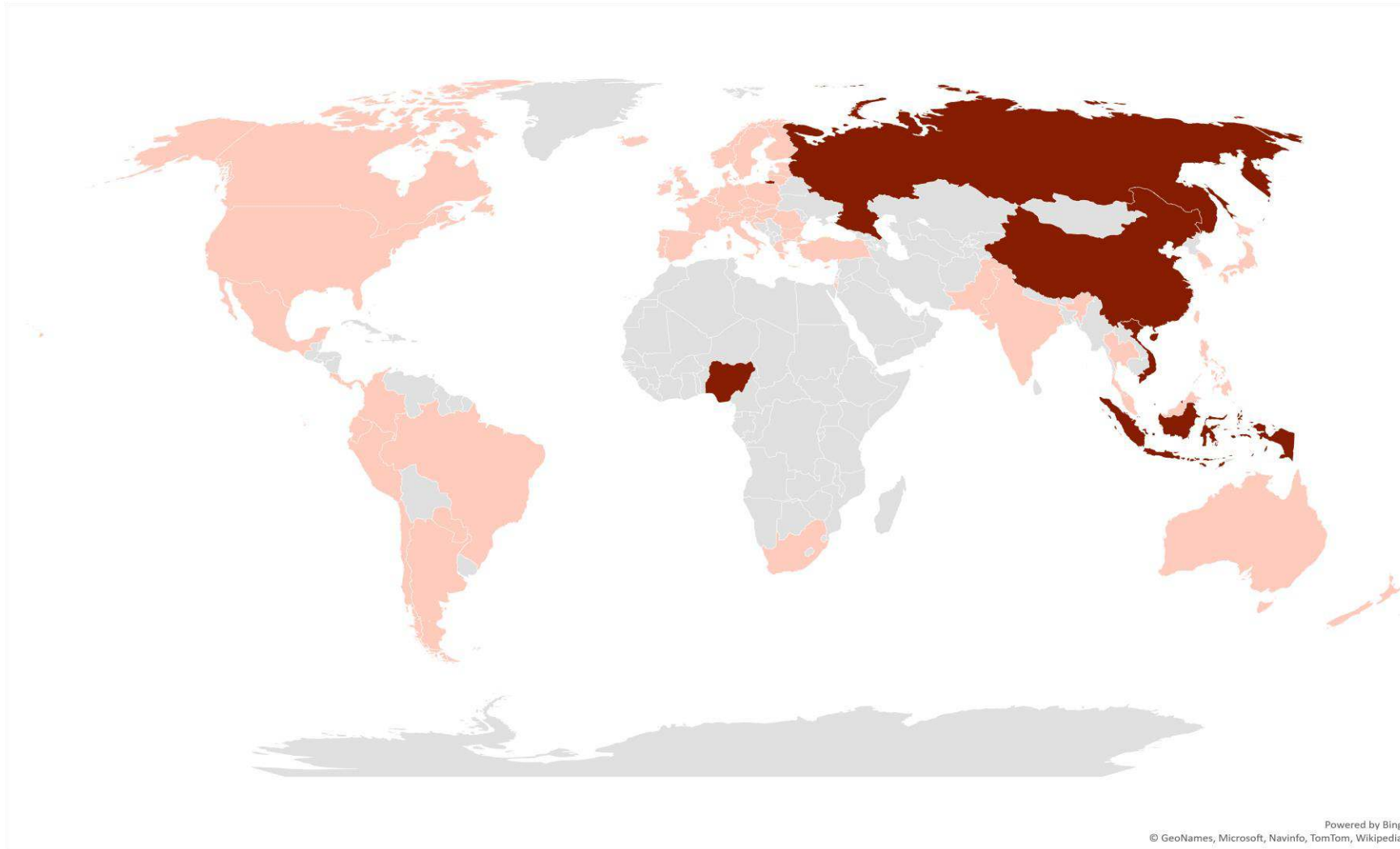


# Data restrictions

digital services trade covered by data localization

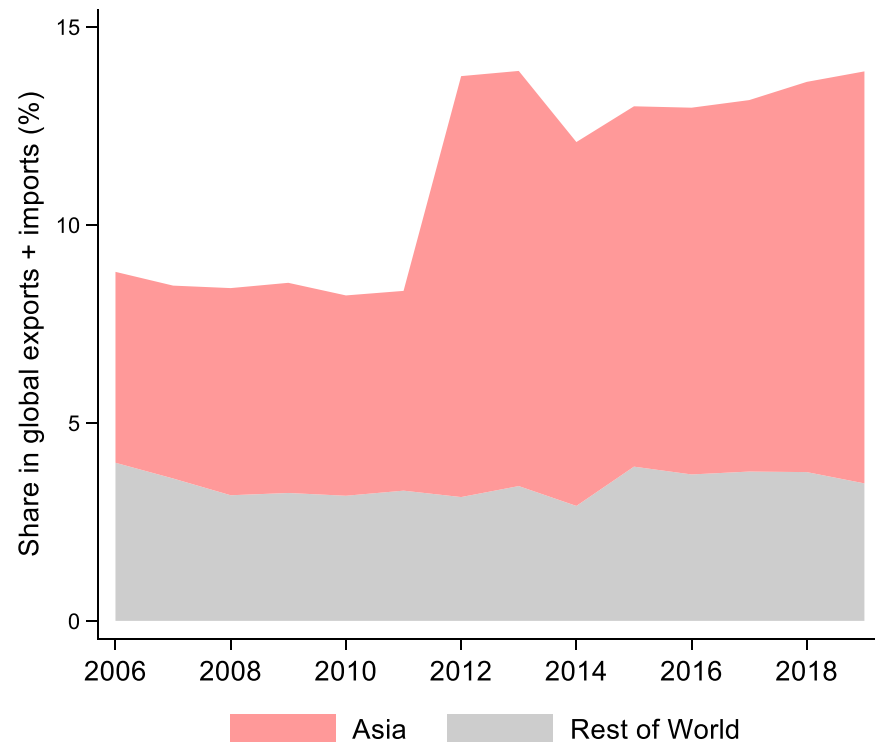


# Countries imposing data localization policies

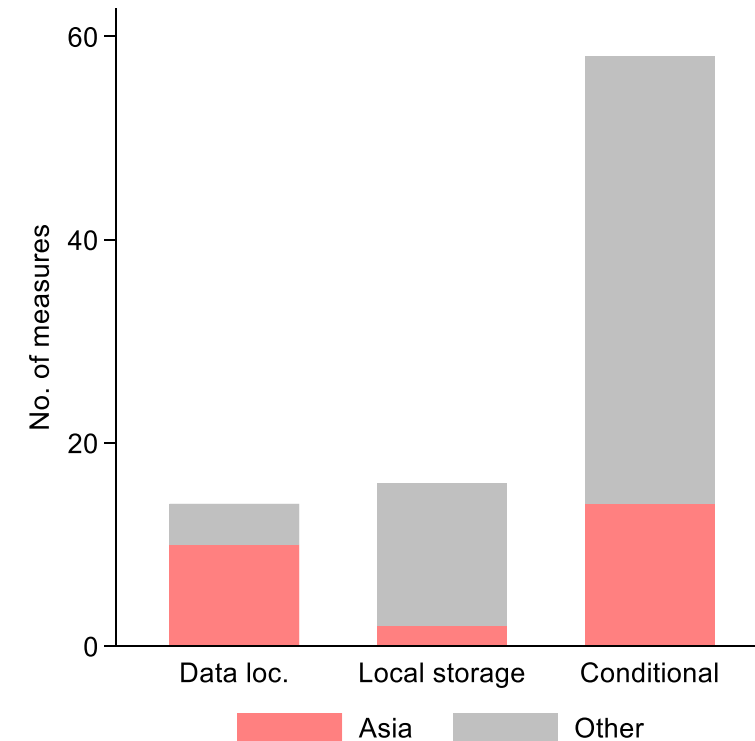


# Asia's role in digital services trade and policy

Share global digital services trade covered by countries imposing data localization policies by Asia and Rest of the World (2006-2019)



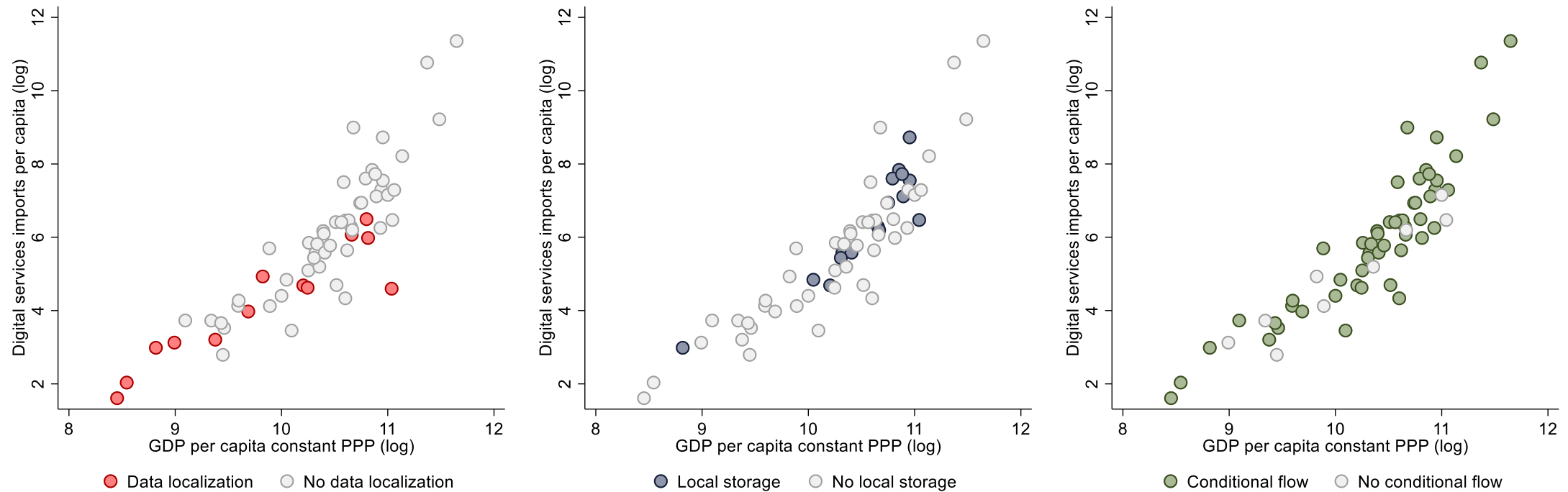
Number of data localization policies, local storage requirements, and conditional flow regime imposed by Asia and other countries (2019)



# Data-related policy restrictions

- Are data-related policy restrictions is burdensome?
- And if so, which ones are the most costly data-related restrictions?
  - **Data localization, local storage, and conditional flow regimes**

# Data-related policy restrictions



# Empirical research

- Ferracane, M., J. Kren and E. van der Marel (2020) "**Do Data Policy Restrictions Impact the Productivity Performance of Firms and Industries?**", Review of International Economics, Vol. 28, No. 3, pages 676-722.
- Ferracane, M. and E. van der Marel (2021) "**Do Data Flows Restrictions Inhibit Trade in Services?**", Review of World Economics, Vol. 157, Issue 4, pages 727-776.
  - Yes, they do in the aggregate using composite indicator

# Further baseline results Van der Marel & Ferracane (ongoing)

	(1)	(2)	(3)	(4)	(5)
	ln(SM)	ln(SM)	ln(SM)	ln(SM)	ln(SM)
Data localization	-0.763*** (0.000)	-0.411*** (0.000)	-0.687*** (0.000)	-0.415*** (0.000)	-0.464*** (0.000)
Local storage	-0.039 (0.675)	0.071 (0.406)	-0.025 (0.770)	-0.007 (0.936)	0.086 (0.430)
Conditional flow	0.043 (0.327)	0.466*** (0.000)	-0.086* (0.051)	0.275*** (0.000)	0.635*** (0.000)
Intensity	Int. 1	Int. 2	Int. 3	Int. 4	Int. 5
FE Country-year	Yes	Yes	Yes	Yes	Yes
FE Sector-year	Yes	Yes	Yes	Yes	Yes
Observations	12118	12118	12118	12118	12118
R2A	0.776	0.777	0.776	0.776	0.779

# Results so far

- Data localization ✕
- Data storage – not for lower developed countries (RCA, LMC, etc.)
- Conditional flow regime ?  
0

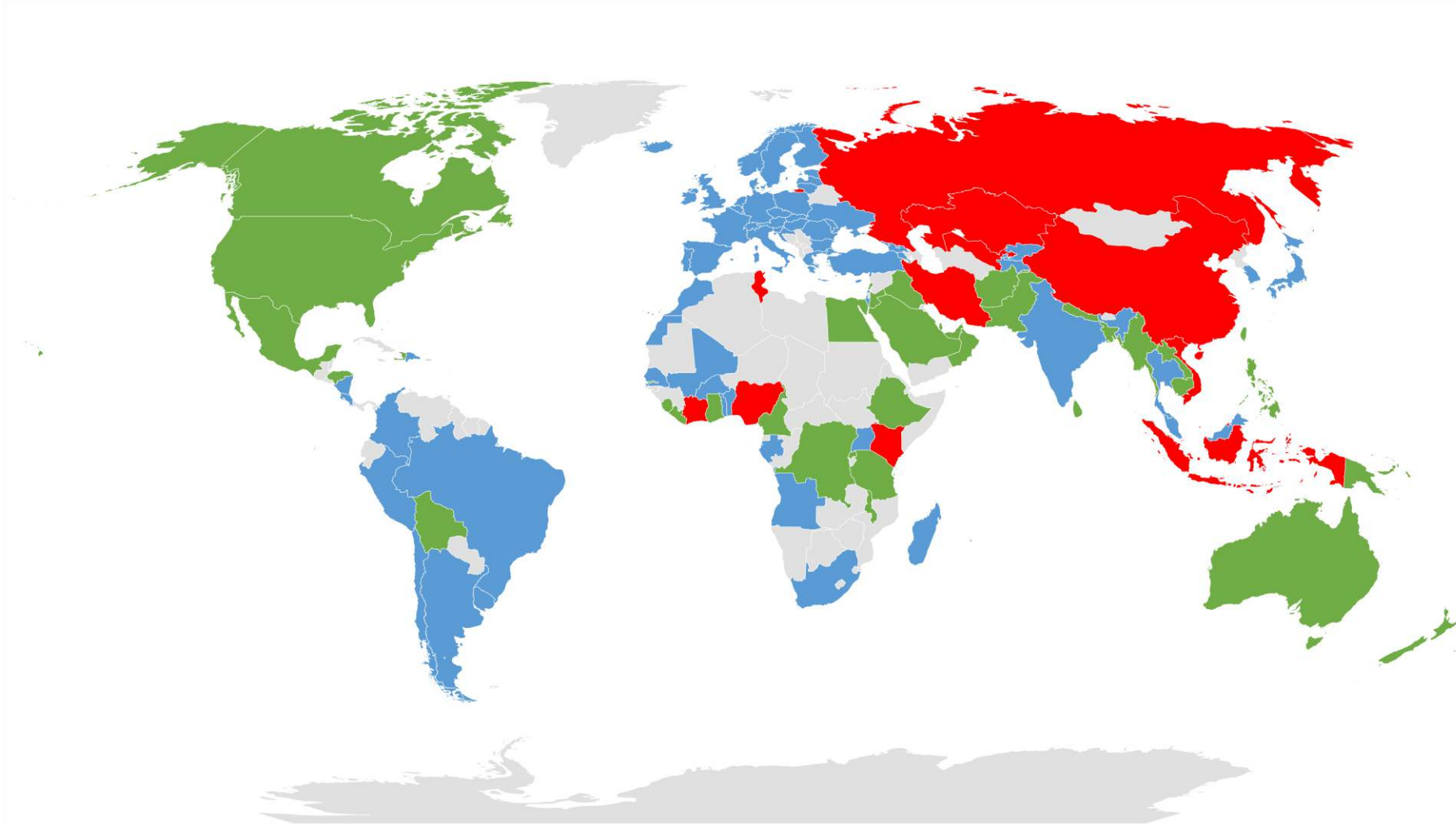


# Results so far

- Moreover, regulatory frameworks also matter
- Globally, three different data frameworks

# Models cross-border (pers) data transfers

Open model (green), Regulatory Safeguard (blue), Government control (red)

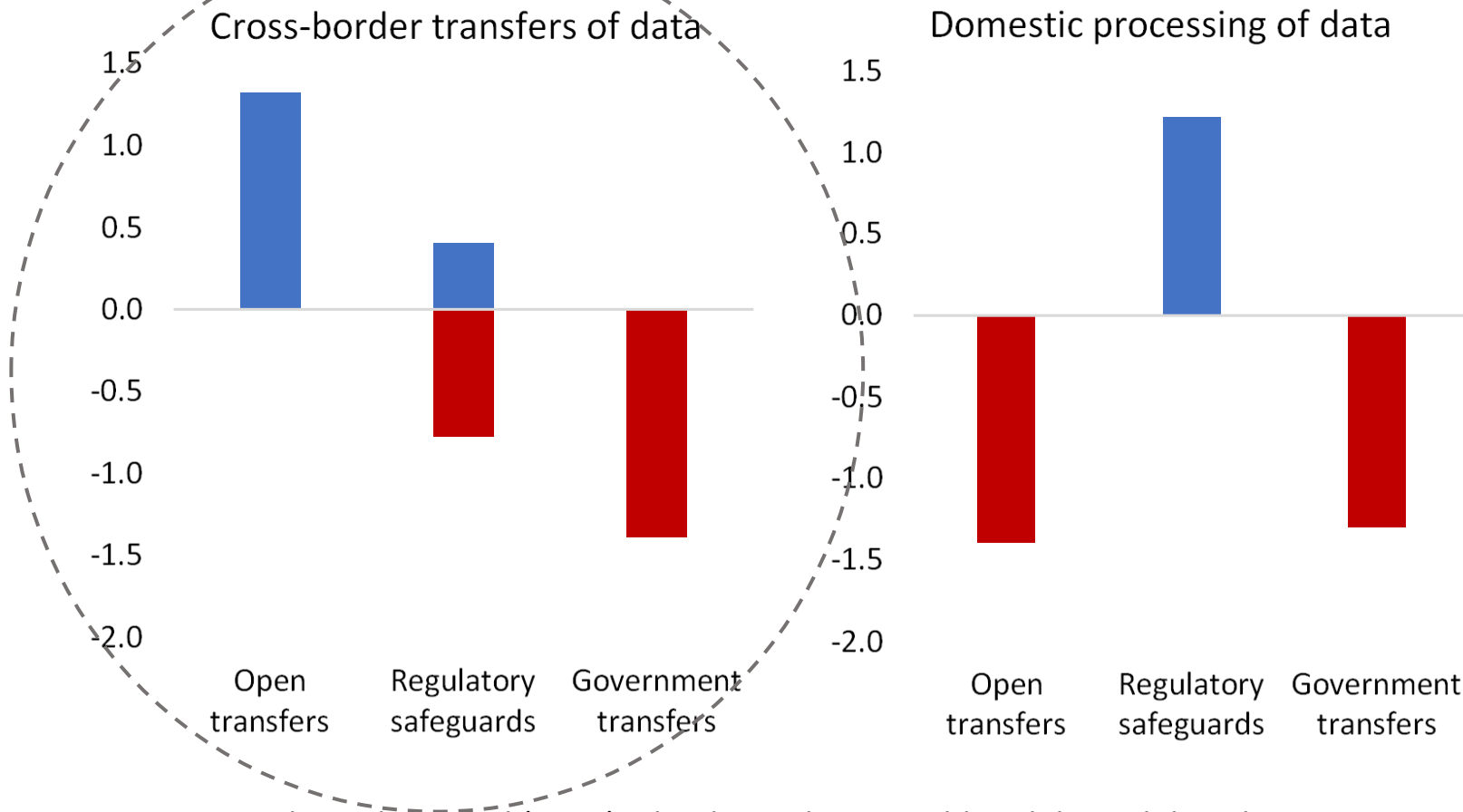


Source: Ferracane and van der Marel (2021b)

Powered by Bing  
© GeoNames, Microsoft, Navinfo, TomTom, Wikipedia



# 3 data models and digital services trade



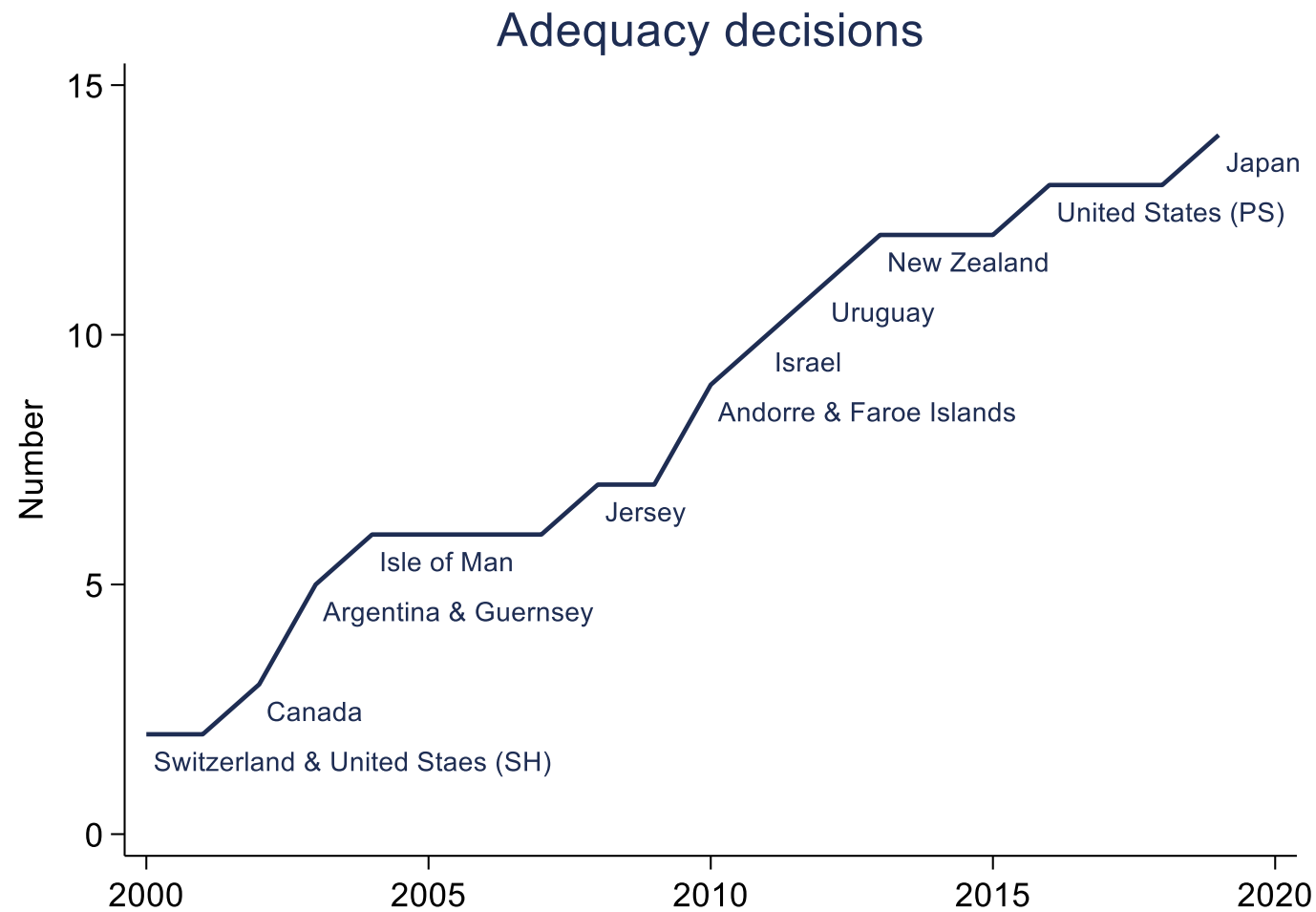
Source: Ferracane and van der Marel (2021). The dependent variable is bilateral digital services exports (DSX) using the underlying gross trade data from the TiVA database. Sector groupings for digital services trade can be found in the paper Annex Table A2, as well as other details of the econometric specification and methodology.

# Data protection

- EU's DPD 1998 & GDPR 2018
- *“Should offer guarantees ensuring an **adequate level of protection** essentially equivalent to that ensured within the Union, in particular where **personal data** are processed”*
  - Independent supervision
  - Cooperation mechanisms, with EU data protection authorities
  - Enforceable rights, to EU citizens (data subjects), including redress
  - Much more regulatory-driven than other countries granting “adequacy”



# EU adequacy decisions



# Adequacy's trade impact

- Benchmark **alternatives** without adequacy
  - Binding Corporate Rules (**BCRs**): within-multinationals data transactions
  - Standard Contractual Clauses (**SCCs**): for outside the firm (outsourcing)
  - Derogations / consent
- Practical business literature: alternatives are **costly** for trading firms\*

# Baseline results, *odt* fixed effects

	Specification 1		Specification 2		Specification 3		Specification 4	
	EXP	IMP	EXP	IMP	EXP	IMP	EXP	IMP
ADQ	-0.030 (0.103)	0.043* (0.080)	-0.014 (0.298)	0.035** (0.050)	-0.012 (0.401)	0.035* (0.052)	-0.023* (0.069)	-0.013 (0.525)
RTA	-0.023 (0.362)	-0.058 (0.153)	-0.000 (0.994)	-0.033 (0.143)	0.003 (0.869)	-0.032 (0.150)	0.006 (0.659)	-0.020 (0.271)
WTO	0.082 (0.302)	0.107 (0.175)	0.122** (0.014)	-0.030 (0.798)	0.126** (0.011)	-0.029 (0.800)	0.117*** (0.004)	-0.031 (0.762)
CON 181	-0.019 (0.488)	0.009 (0.841)	-0.005 (0.777)	-0.011 (0.655)	-0.004 (0.804)	-0.009 (0.725)	0.023 (0.132)	-0.005 (0.817)
CBPR	-0.035 (0.277)	0.084** (0.044)	-0.036 (0.242)	0.015 (0.606)	-0.035 (0.242)	0.015 (0.605)	-0.036 (0.135)	0.033 (0.182)
FE O-year	Y	Y	Y	Y	Y	Y	Y	Y
FE D-year	Y	Y	Y	Y	Y	Y	Y	Y
FE O-D-Trend	Y	Y	Y	Y	Y	Y	Y	Y
Obs	537704	525790	562475	555126	562655	555291	564035	560295
R2	0.995	0.987	0.996	0.993	0.996	0.993	0.996	0.992
Finance		•		•		•		•
Insurance		•		•		•		•
IT & Info		•		•		•		•
IPR		•		•		•		•
Travel				•		•		•
Cultural						•		•
Business								•

# Wider effects

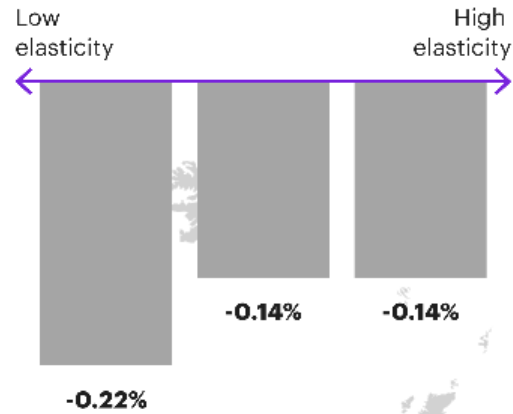
Recent Kearney report

Figure 9

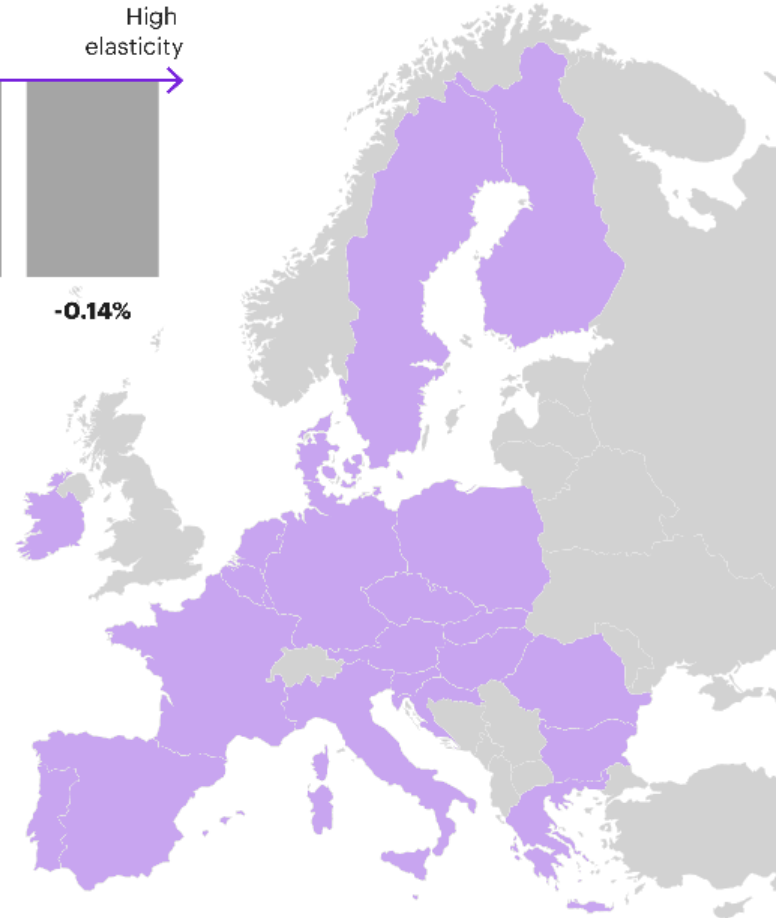
**An invalidation of an adequacy agreement between the European Union and the United States could have a major long-term impact on GDP**

Impact of an Adequacy Scenario on the EU GDP

## EU GDP impact



**€19 billion–  
€31 billion**

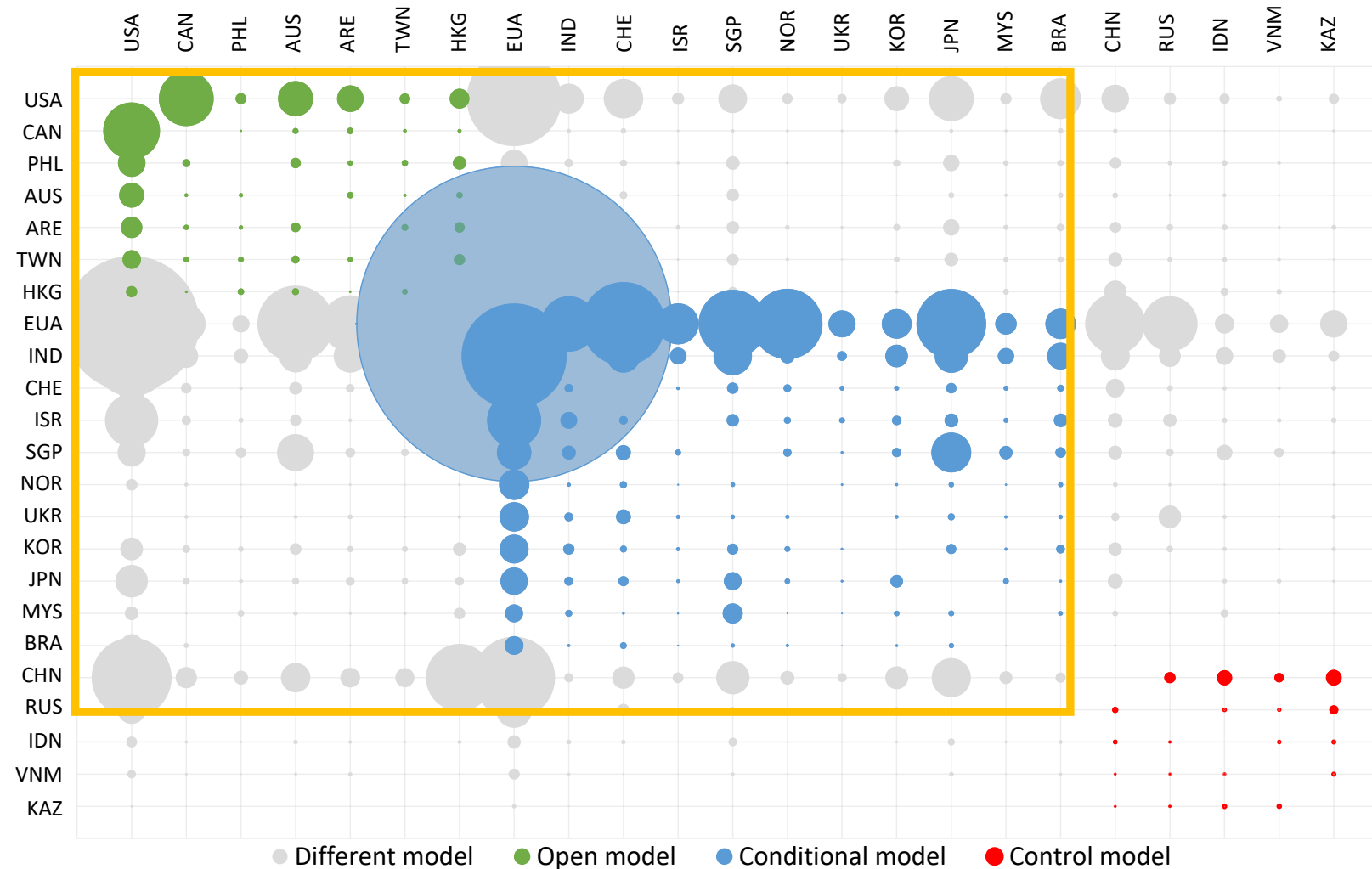


Sources: ECIPE and Kearney analysis



# 3 models of cross-border data transfers

1. Open model (green), 2. Regulatory Safeguard (blue), 3. Government control (red)

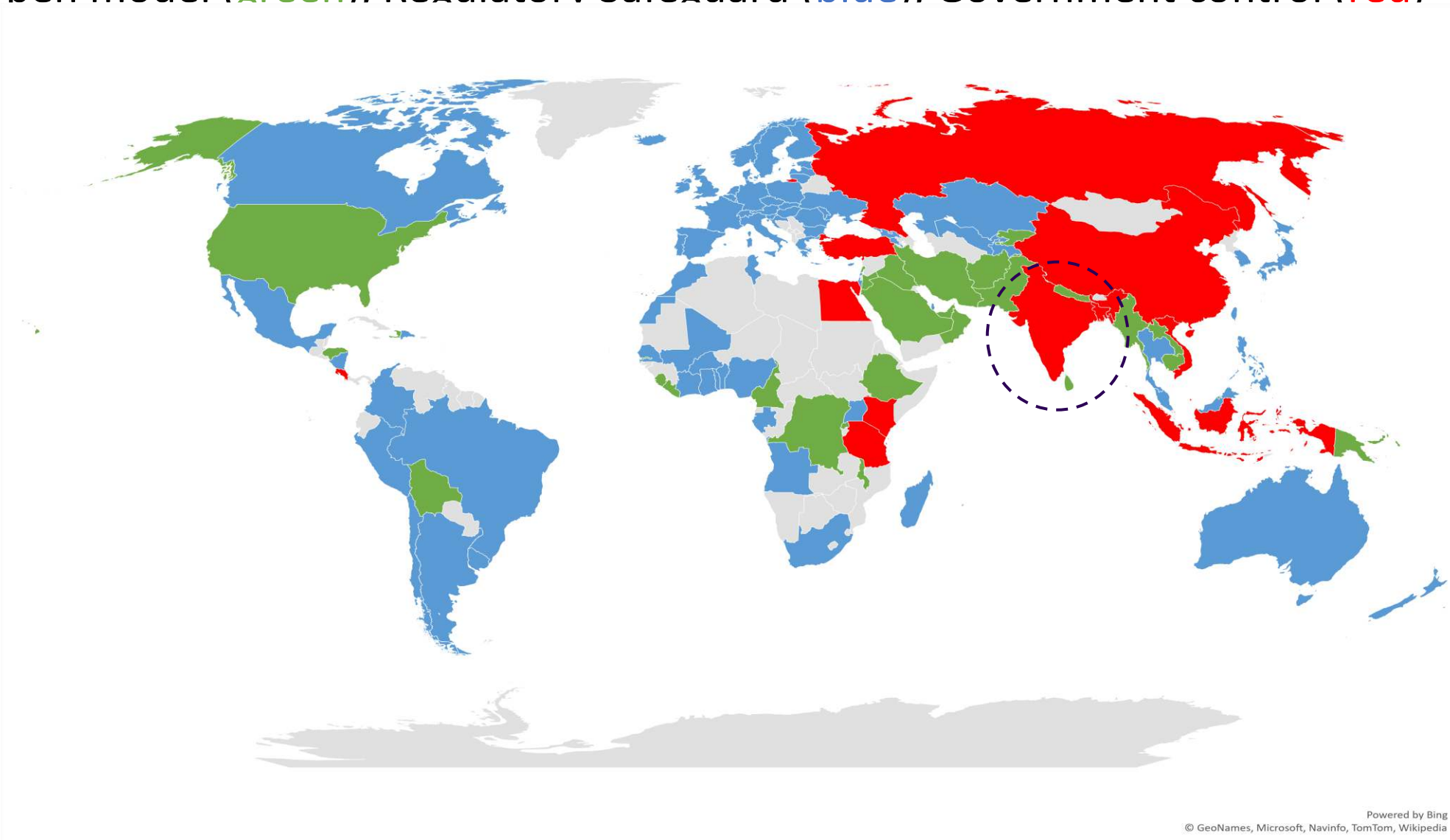


Source: Ferracane and van der Marel (2021b)

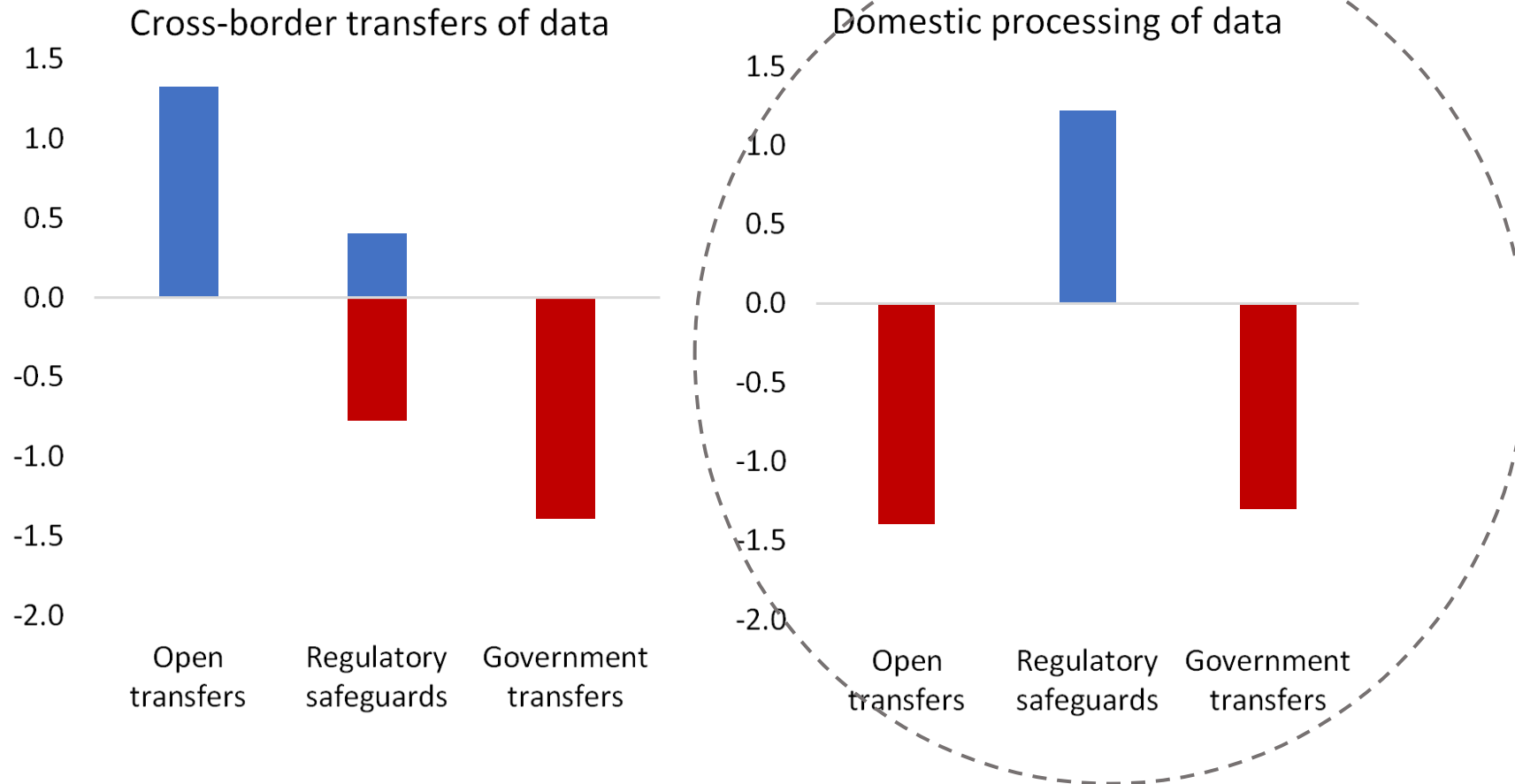


# Models of data processing

Open model (green). Regulatory Safeguard (blue). Government control (red)



# 3 data models and digital services trade



Source: Ferracane and van der Marel (2021). The dependent variable is bilateral digital services exports (DSX) using the underlying gross trade data from the TiVA database. Sector groupings for digital services trade can be found in the paper Annex Table A2, as well as other details of the econometric specification and methodology.

# Conclusion

- Digital-based services globalization going on (big)
- Intangibles such as data going to play a huge role
- Regulatory options best free of localization measures
  - How would India shift on localization and privacy issues?
  - How would it pivot to larger markets for digital services trade?

# Three data models: Taxonomy

	Cross-border data transfers	Domestic data processing
<b><u>OP</u></b> : Open Transfers and Processing Model	<b>Self-certification</b> ; <b>self-assessment schemes</b> ; <b>ex-post accountability</b> ; trade agreements and plurilateral/bilateral arrangements as only means to regulate data transfers.	<b>Lack of comprehensive data protection framework</b> ; lack of informed consent; privacy as a consumer right.
<b><u>RS</u></b> : Regulatory Safeguards Model	<b>Conditions</b> to be fulfilled ex-ante, including adequacy of the recipient country, binding corporate rules (BCR), standard contract clauses (SCCs,) data subject consent, codes of conduct, among others.	Wide data <b>subject rights</b> ; data subject consent; right to access, modify and delete personal data; establishment of data protection authorities (DPAs) or agencies; privacy as fundamental human right.
<b><u>GC</u></b> : Government Control Model	<b>Strict conditions</b> including bans to transfer data cross border; local processing requirements: ad hoc government authorization for data transfers; infrastructure requirements; ex-ante security assessments.	<b>Extensive exceptions</b> for government access to personal data; privacy vs security and social order.