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RESEARCH INFRASTRUCTURE FOR SCIENCE
AND INNOVATION POLICY STUDIES

Institutional barriers to participation in EU framework programs: contrasting the Swiss and UK cases

Published on [Scientometrics \(2020\)](#)

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RISIS Seminar

10 February 2021



This project is funded by the European Union under Horizon2020 Research and Innovation Programme Grant Agreement n° 824091

- 7-year funding programs for supporting research and development activities throughout Europe :
 - FP7 (2007-2013)
 - Horizon 2020 (2014-2020)
 - Horizon Europe (2021-2027)
- Different types of projects, e.g. :
 - Individual grants : ERC, MSCA Ind. Fellowships, SME Instrument
 - Collaborative projects : Research & Innovation Actions, Innovation Actions, Coordination and Support Actions, etc.
- ~ 40% of participations from Higher Education Institutions (HEIs)

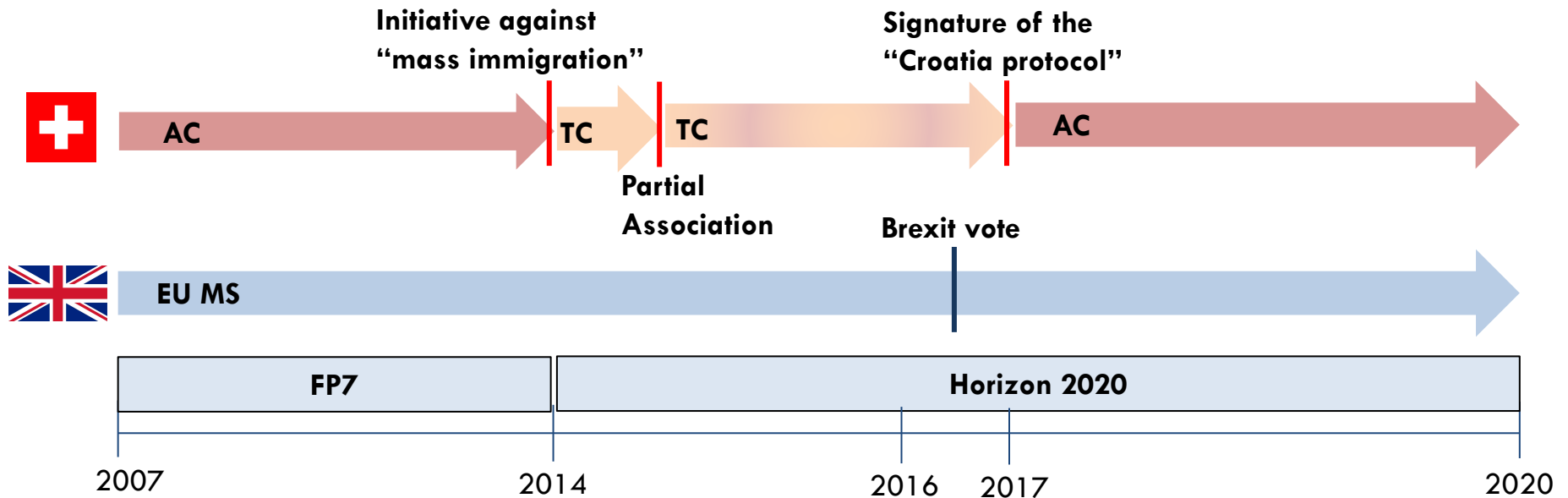
- Literature on EU-FP participation :
 - Convergence at the European level : country effects are limited (Lepori et al. 2015)
 - Highly correlated with organisational characteristics, e.g. network centrality, size and scientific reputation (Enger 2018)
 - EU project participation is highly skewed (Geuna 1996)
 - Prior collaborations and thematic proximity play key roles in the selection of partners and in the stabilisation of collaboration networks (Paier and Scherngell 2011)
 - Croatia accession to EU-FPs in 2006 : no major changes in the number of projects acquired (Mataković and Novak 2013)

EU-FPs : Modes of access

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Status	Access to EU funding	Participation ERC - MSCA	Participation Collab. projects
EU Member State (EU MS)	✓	✓	✓
Associated Country (AC)	✓	✓	✓
Third Country (TC)			✓



Swiss and UK cases compared RISIS



- Different levels of access :
 - CH : Restricted access to EU funding (2014-2016)
 - UK : No restrictions
- Different levels of uncertainties :
 - CH : Short-term shock quickly absorbed by political diplomacy
 - UK : Uncertain future of EU-UK relations in terms of research collaboration, researchers' mobility, trade, etc.

Goal of the paper :

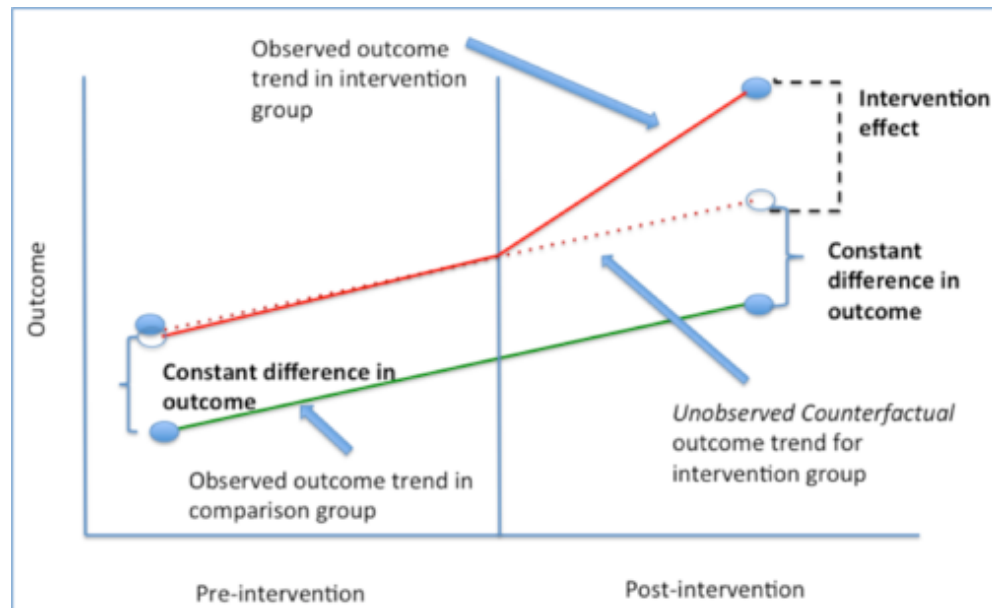
Compare the impact of formal and informal barriers on the participation of CH and UK HEIs in Horizon 2020

RISIS datasets :

- [EUPRO](#) (complemented by the [EC Horizon Dashboard](#))
 - Nb. of EU projects per HEI
- European Tertiary Education Register ([ETER](#))
 - Nb. of academic staff
 - Nb. of students per discipline
- [CWTS Publication Database](#)
 - Nb. of publications per HEI

Difference-in-differences (DiD) :

- Comparison of changes in outcomes over time between:
 - A population affected by an event (**treatment group**)
 - A population that is not (**control group**). (Lechner 2010)



Difference-in-Difference estimation, graphical explanation.

[Columbia Public Health](https://publichealth.columbia.edu/)

- Treatment group : Swiss & UK HEIs
- Control group : Selected European HEIs similar to the treatment group in terms of experience in EU-FPs, reputation and size
- Timeframe : 2011-2019

Variables :

- DiD : $\text{SwissHEI} * \text{SwissVote}$; $\text{UKHEI} * \text{BrexitVote}$
- Centrality : Eigenvector centrality in FP7 (2007-2010)
- Centrality * DiD
- Size
- Subject specialisation

CH :

$$\ln(\text{Participations}_{it}) = \beta_0 + \beta_1 \text{SwissHEI}_i + \beta_2 \text{SwissVote}_{it} + \beta_3 \text{DiD}_{it} + \beta_4 \text{Centrality}_i + \beta_5 (\text{Centrality} * \text{DiD})_{it} + \beta_6 \ln(\text{Size}_{it}) + \beta_7 \text{LIF}_{it} + \beta_8 \text{ICT-Eng}_{it} + \beta_9 \text{SSH}_{it} + \varepsilon_{it}$$

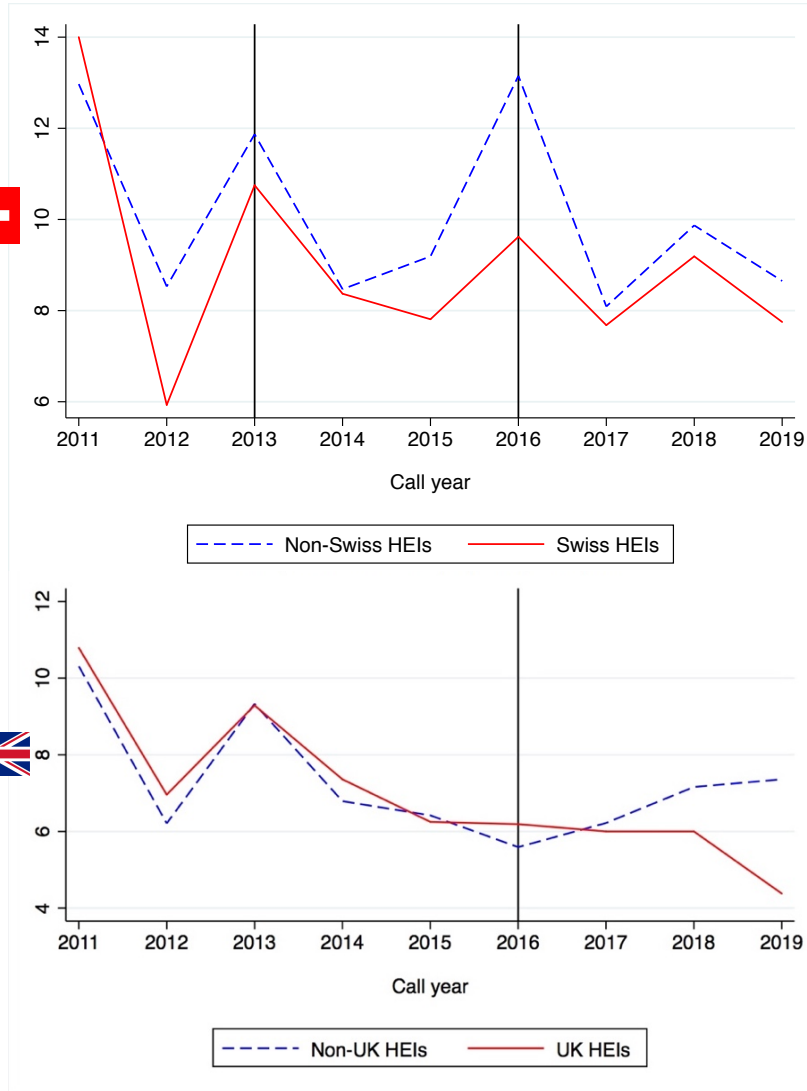
UK :

$$\ln(\text{Participations}_{it}) = \beta_0 + \beta_1 \text{UKHEI}_i + \beta_2 \text{BrexitVote}_{it} + \beta_3 \text{DiD}_{it} + \beta_4 \text{Centrality}_i + \beta_5 (\text{Centrality} * \text{DiD})_{it} + \varepsilon_{it}$$

Types of EU-FP projects considered :

- Collaborative projects
 - Participation
 - Coordination
- European Research Council grants
- Marie Skłodowska Curie Actions

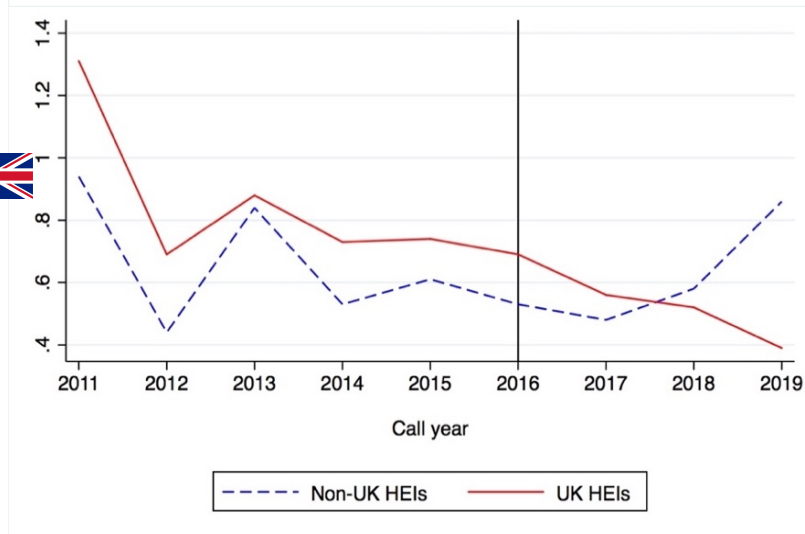
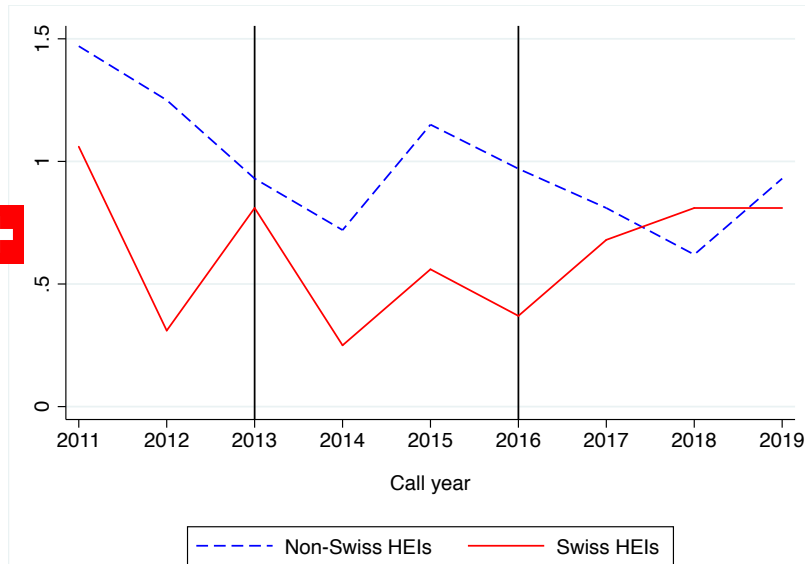
Descriptive analysis



Collaborative projects (avg)

- CH : No clear effect of the status change
- UK : Downward trend after the Brexit vote, while increase in the control group

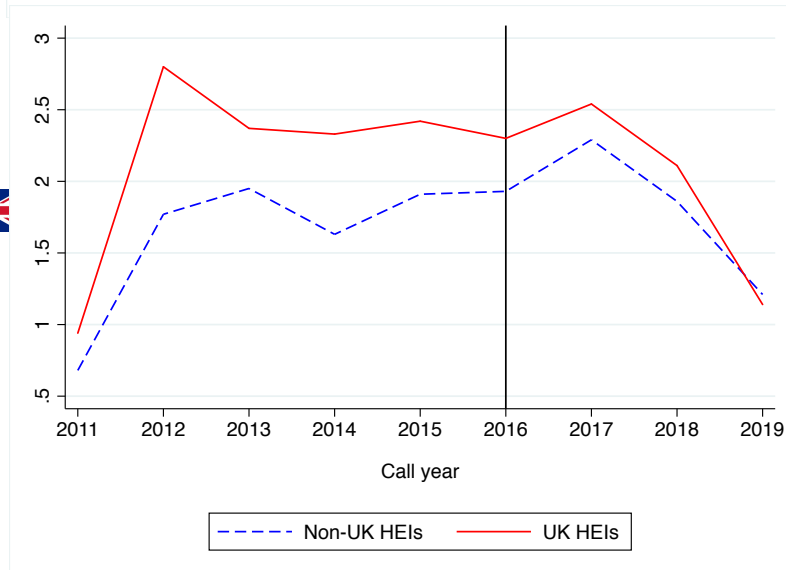
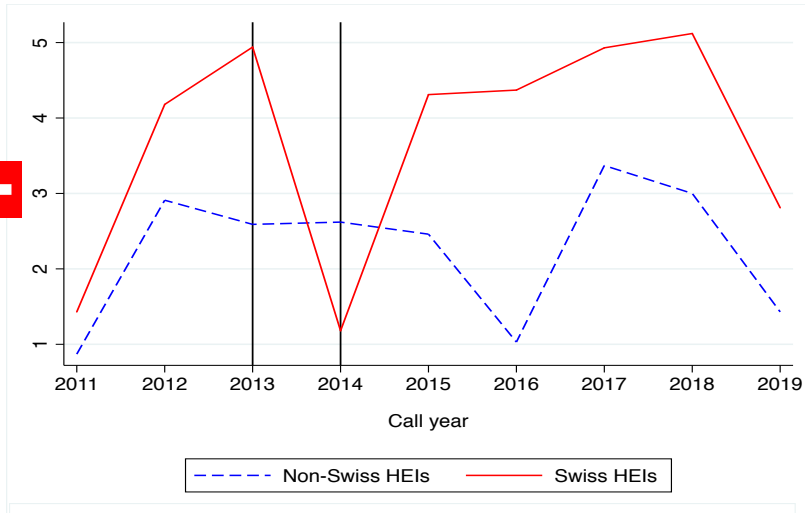
Descriptive analysis



Coordinated projects (avg)

- CH : Negative effect of the status change and rapid recovery after regaining access in 2017
- UK : Downward trend after the Brexit vote, while increase in the control group

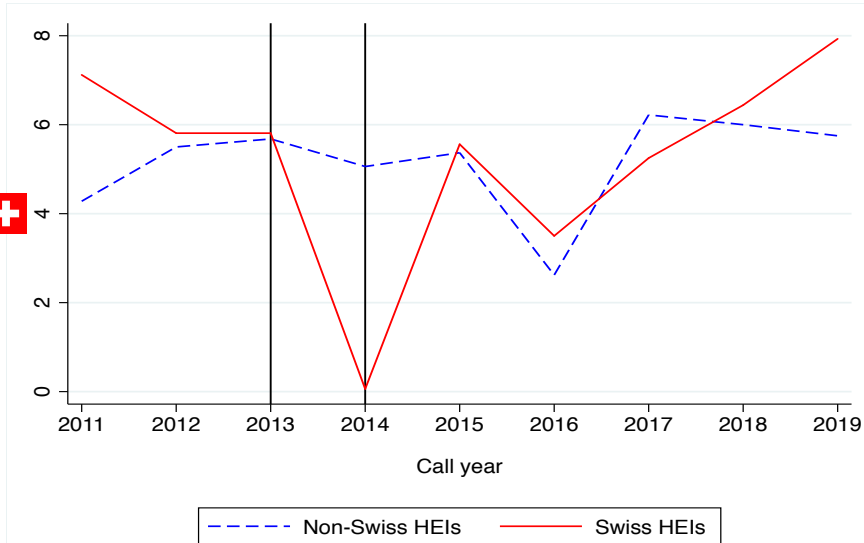
Descriptive analysis



European Research Council (avg)

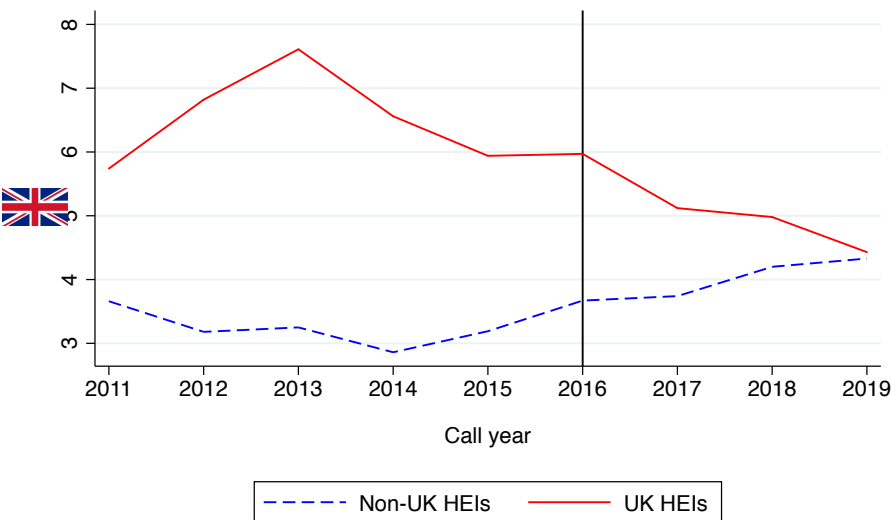
- CH : Rapid recovery after regaining access in late 2014
- UK : Similar tendencies between UK and non-UK HEIs

Descriptive analysis



Marie Skłodowska Curie Actions (avg)

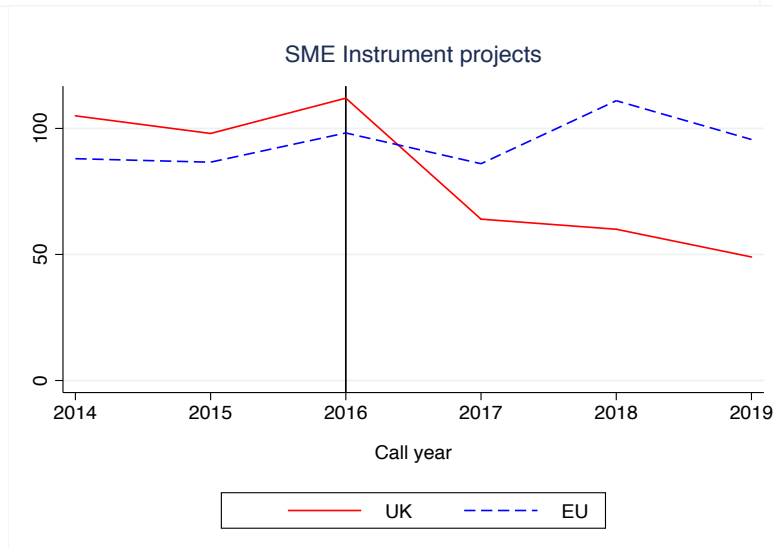
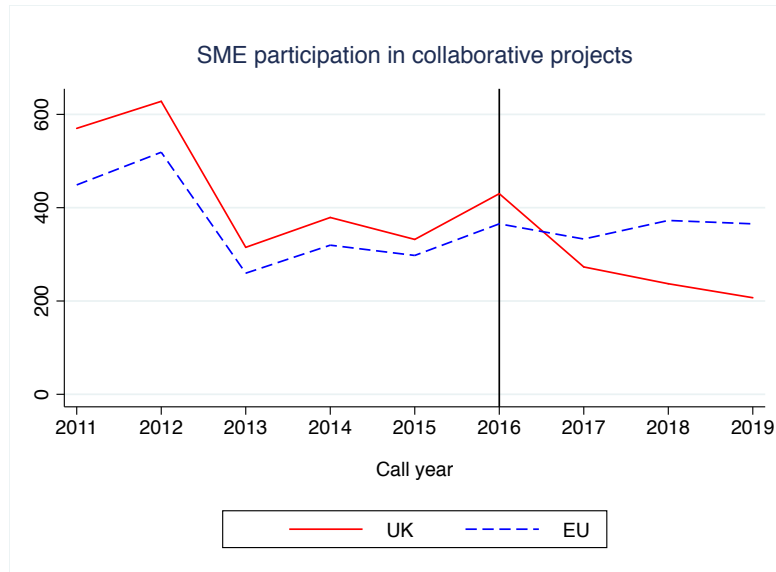
- CH : Rapid recovery after regaining access in late 2014
- UK : Downward trend after the Brexit vote, while increase in the control group



- Collaborative projects (participation and coordination) :
 - Stronger negative impact in the UK case
 - Central HEIs more affected in both CH and UK cases
 - Network centrality strongly correlated to participations and project coordination
- ERC and MSCAs :
 - No significant impact on ERC participation
 - Strong negative impact on MSCA participation in the UK case
 - Network centrality strongly correlated to both schemes

- More severe impact of (informal) barriers in the UK
 - Viable financial situation of HEIs and clear rules for foreigners are very important for attractiveness of HEIs
 - A new agreement, even with less favourable participation conditions, may damage UK HEIs participation in EU-FPs to a lesser degree than such a situation of uncertainty
- Research collaboration requires stable relationships oriented to the long-term
- Foreseen immigration limitations and other Brexit-induced uncertainties may affect UK's attractiveness as research destination

What about UK SMEs ?



- Comparison between UK SMEs and average participation of EU SMEs from DE, FR, IT, ES and NL
- Strong negative effect of Brexit on UK SME participation
- Post-Brexit uncertainties :
 - Access to EU Market
 - Capital investment
 - IP rules between EU and UK

- Effect of Brexit on UK participation in the first years of Horizon Europe
- Thorough analysis of the effect of Brexit on participation of UK SMEs
- Other cases of country status changes, e.g. Israel in 1996, Switzerland in 2004, Ukraine in 2015

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THANK YOU !

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