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| Institution: University of Edinburgh | | |
| Unit of Assessment: 16 Economics and Econometrics | | |
| Title of case study: Informing the Public and Policy Debate in the UK and Spain About the Effects of Trade on the Incomes of Regions and Countries | | |
| Period when the underpinning research was undertaken: September 2012 – 2020 | | |
| Details of staff conducting the underpinning research from the submitting unit: | | |
| Name(s): | Role(s) (e.g. job title): | Period(s) employed by submitting HEI: |
| José V. Rodríguez Mora Robert Zymek | Professor of Economics Lecturer in Economics | Since 1 st September 2008 Since 1 st August 2011 |
| Period when the claimed impact occurred: August 2013 – July 2020 | | |
| Is this case study continued from a case study submitted in 2014? N | | |
| 1. Summary of the impact | | |
| <p>Research by José V. Rodríguez Mora and Robert Zymek explores the effect of trade on the incomes of regions and countries. Analyses and projections based on this research have informed the public and policy debate about the state of subnational economies, and the impact that Catalan, Basque and Scottish independence would have on trade and incomes. The research and its implications have received wide media coverage, stimulated economic discussions in regional parliaments in both Spain and the UK, and helped shape the priorities of the UK Industrial Strategy Council.</p> | | |
| 2. Underpinning research | | |
| <p>Since September 2012, Rodríguez Mora and Zymek have been working on a research programme that examines the effects of trade on the income of regions and countries. This programme combines Rodríguez Mora's experience in macroeconomics and political economy with Zymek's expertise in international economics. The research aims to quantify the contribution of trade to a region's or country's measured per-capita GDP. It explores how changes in trade ties affect local incomes. Rodríguez Mora and Zymek address these questions by combining insights from modern quantitative models of international trade with novel data on the value of trade flows within and across countries.</p> <p>One strand of the research, led by Rodríguez Mora, starts from the observation that the value of trade flows between regions within countries is many times larger than the value of trade flows between regions across country borders. This observation can only be reconciled with trade models if political borders have a large negative effect on trade over and above the effect of directly observed tariffs and trade barriers (the "border effect").</p> <p>Rodríguez Mora (together with David Comerford, Strathclyde) uses a combination of economic theory and data to make predictions, under different scenarios, about the likely effect of the break-up of a country – resulting in a new border – on the trade and income of the country's former constituent regions. To do this, a counterfactual experiment is considered in which trade frictions from the new border match those in the data from a suitably chosen pair of countries. For example, for the case of a hypothetical border between Scotland and the rest of the UK (rUK), the observed border friction between the Republic of Ireland and the UK is chosen as a benchmark. With the Irish-UK friction at its new border, the long-run GDP of an independent Scotland would be 8.4% lower than it is currently.</p> <p>The other strand of the research, led by Zymek, shows how to assess the contribution of trade to currently observed income differences between regions and countries. The previous literature on "development accounting" had sought to attribute such income differences only to differences in regions' endowments of productive resources, and their productivity. Zymek's work (together</p> | | |

with Alejandro Cuña, Vienna) uses recent advances in trade theory to incorporate the role of countries' trade linkages into the traditional "development accounting" framework. It then shows how to measure these linkages consistently across countries using detailed information on countries' trade and production patterns from the World Input-Output Database.

The research makes a methodological and a quantitative contribution to the academic literature. It shows how to measure the portion of international income differences that can be attributed to differences in countries' trade linkages in a way consistent with modern trade theory. It then applies this methodology to the countries covered in the World Input-Output Database. In doing so, the paper demonstrates that differences in international linkages may be as important as differences in countries' productive resources for explaining why some countries are rich and others poor. It also finds that ignoring the role of trade may have caused earlier studies to overstate the magnitude of productivity differences between countries.

Although the two research strands resulted in separate outputs, Rodríguez Mora and Zymek collaborated both formally and informally throughout their work on these projects. After Zymek joined the UoA in 2011, Rodríguez Mora acted as his mentor, creating the space for two-way exchange on the shared central themes of the research. They jointly supervised three PhD students, developed a joint research proposal and organised two conferences to build an academic network around their work together. The first was a two-day conference held in June 2014 that involved 12 speakers from Europe and the US with keynote lectures from James Anderson (Boston College) and Enrico Spolaore (Tufts University). The second conference in June 2020 was an online event involving 12 speakers and discussants. Rodríguez Mora and Zymek presented work on trade, macroeconomics and regional economics at both events [3.1].

Rodríguez Mora's was invited to present his research at the April 2018 panel meeting of *Economic Policy*, a leading journal for the dissemination of academic insights to policymakers [3.2], where the results were subsequently published [3.3]. Zymek presented his research at the prestigious, invitation-only conference of the World Bank's International Comparison Programme (ICP) at Georgetown University in Washington DC in May 2018 [3.4]. It is published in the CESifo working paper series and a revision has been requested at the *Journal of the European Economic Association*, a leading general-interest journal in economics [3.5].

3. References to the research

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- [3.4] PPP/ICP Conference 2018, Georgetown University, Washington DC, USA; on 24th-25th May 2018.
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4. Details of the impact

Rodríguez Mora and Zymek have informed the debate about the economics of regions and countries by disseminating their research to non-academic audiences through non-technical publications, media appearances and engagement with key stakeholders in the UK and Spain.

Rodríguez Mora has contributed significantly to the debate surrounding the economics of an independent Catalan state. Alongside other Spanish experts from a range of disciplines, he contributed a chapter to a general-audience book on the political and economic costs of a break-up of the Spanish state. The book sold approximately 6,000 copies in Spain and the launch event was watched by 2,000 people online. In another prominent public intervention, he co-authored an article on Catalan independence in *El País*, Spain's second most circulated national newspaper. The article, which cites insights from Comerford and Rodríguez Mora's research, was shared 160 times by social media users on Twitter – including some prominent political figures, such as the current Spanish Minister for Health [5.1].

The Scottish independence referendum in September 2014 triggered interest in Rodríguez Mora's research in the British media. His findings on the economic impact of a possible Scotland-UK border were cited prominently in the *Daily Mail* and *Daily Telegraph*. He has since been invited to give comments in the UK media (including the BBC and *The Scotsman*) on more than ten occasions – most frequently on the economics and politics of regional independence. In the wake of the un-authorised and tumultuous Catalan independence referendum, Rodríguez Mora and his research were prominently cited in a *New York Times* article in October 2017. The article was shared over 250 times on Twitter alone [5.2].

The dissemination of Zymek's research on the appropriate measurement of economic activity has focused on engagement with relevant stakeholders in the national and international policy community. Between January 2016 and May 2018, Zymek presented his research to economists at the International Monetary Fund, the German Institute for Research in Economics (DIW), the World Bank, and the Bank of England. A non-technical summary of Cuñat and Zymek's research was published on VoxEU, a website for the dissemination of research to economists in government, international institutions and the private sector. VoxEU records half a million page views per month, and the post by Cuñat and Zymek had received nearly 4,000 reads within four days of its publication in October 2017 [5.3].

As part of the 2014 conference on "Country Size and Border Effects in a Globalised World" mentioned above, an evening panel discussion on "The Economics of New Borders: Implications for Scotland" was held in central Edinburgh to showcase the methods economists use to evaluate the costs and benefits of independence and discuss the experience of other countries and the implications for Scotland. The panellists were Anderson (Boston College), Spolaore (Tufts University) and Stephen Farrington (HM Treasury), who at that time was responsible for the Treasury's analytical work on the Scotland independence. The lively debate attracted an audience of about 80 participants including members of the public. Video recordings of the contributions by the two US-based economists received a further 200 views online [5.4].

Beyond broad dissemination, there is evidence that insights based on the research by Rodríguez Mora and Zymek reached political decision-makers in Spain and the UK. Based on his research, Rodríguez Mora was invited to provide expert testimony in the Basque Parliament on the economic impact of Basque independence. He appeared before Parliament on 11th February 2015 and received 30 minutes to explain the contents of his research and its implications for the Basque Country in depth [5.5]. After the Spanish central government refused to provide an estimate of the economic cost of Basque independence, opposition parties in the

Basque parliament used Rodríguez Mora's independent evidence to argue in favour of the Basque country's current self-government arrangement in August 2015. Based on their statement, figures from Rodríguez Mora's research were reported by Europa Press, a Spanish news agency, and re-printed by regional media with a combined physical circulation of at least 300,000 copies [5.6].

Zymek was approached by the David Hume Institute, an Edinburgh-based think tank, to contribute his expertise on the international comparison of income and productivity for an independent report on the state of the Scottish economy. The opening chapter of the report measures Scottish productivity and attributes Scotland's comparative performance in an international context to a range of productivity drivers. Key calculations performed for this analysis rely directly on the methods developed by Cuñat and Zymek. The report was published on 6th September 2018 and its contents were covered by the BBC, *The Financial Times*, *The Times*, *The Scotsman* and *The Herald*, among others [5.7]. Both main opposition parties in Scotland released press statements about the report, and it was discussed in the Scottish Parliament during First Minister's Questions on 13th September 2018 [5.8].

Following his involvement with this report, Zymek was offered a secondment at the UK Industrial Strategy Council, to assist with a review of the evidence on UK regional productivity differences. The evidence review was presented to the public in February 2020 by the Chairman of the Council together with Zymek at an event attended by 70 high-profile delegates from government, think tanks and the private sector [5.9]. The event was prominently covered by *The Financial Times*, *The Times*, *The Guardian*, *The Telegraph*, *Reuters* and *Bloomberg* [5.10]. The report highlights a possible mismeasurement of UK regional productivity differences, based on the arguments developed in the research of Cuñat and Zymek, resulting in a crucial evidence gap. It identifies filling this gap as a strategic priority for the Industrial Strategy Council. Zymek was subsequently invited to discuss the implications of the report and his research for the UK Internal Market Bill in a small-group meeting with the Chancellor of the Duchy of Lancaster on 22nd June 2020 and in a private phone call with the Scottish Finance Secretary on 22nd July 2020 [5.11].

5. Sources to corroborate the impact

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