

Extended Abstract

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Paper/Poster Title	Discussion Paper – An assessment of analytical options for estimating regional impacts of UK trade agreements on agriculture
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Abstract prepared for presentation at the 96th Annual Conference of the Agricultural Economics Society, K U Leuven, Belgium

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Abstract	<i>200 words max</i>
<p>This discussion paper assesses the options for apportioning United Kingdom-level outputs from trade modelling onto sub-national regions, at country level (England, Wales, Scotland, Northern Ireland) and below. While standard trade models operate at a national level, producing UK-level outputs, production impacts of trade agreements tend to exhibit strong regional concentration. As such, the question of how to most robustly apportion consumer and producer impacts onto regions is crucial. This paper discusses the merits and limitations of multiple approaches. One proposed approach involves using welfare outputs from trade models. For consumption impacts, this would involve apportioning Consumer Surplus impacts onto regions through a measure of either population or consumption. For production impacts, this would involve apportioning Producer Surplus impacts onto regions, through indicators of production concentration including livestock numbers or estimates of regional incomes for a given sub-sector. Other approaches, including using gross output, price and quantity changes, or operating models at a sub-national level, are also discussed.</p>	
Keywords	Trade, regional impacts, modelling, welfare
JEL Code	Agriculture Q1, Welfare Economics D6, Trade F1, General Regional Economics R1, Regional Government Analysis R5 see: www.aeaweb.org/jel/guide/jel.php?class=Q)
Introduction	<i>100 – 250 words</i>
<p>The UK is in the process of signing major Free Trade Agreements, with potentially large ramifications for domestic agricultural sectors. In Defra, we use a variety of trade models to establish the costs of benefits of such policies on UK consumers and agri-food producers. However, all our models aggregate impacts to the UK level, while we expect production impacts in particular to be highly regionally concentrated. A variety of approaches could be adopted to estimate these impact, from the more</p>	

rudimentary to the more resource intensive. The costs and benefits of these approaches will be discussed.

Methodology

100 – 250 words

We have simulated various Free Trade Agreement scenarios in Defra's trade models, estimating impacts on disaggregated agricultural sectors. Standard outputs from the modelling include changes in trade flows, prices and output. The proposed approach involves apportioning consumer and producer surplus outputs from a Partial Equilibrium trade model. The precise mechanism for this apportionment of Consumer Surplus (CS) and Producer Surplus (PS) will be explored, given data limitations at greater regional disaggregation. An ambitious approach could involve attempting to build a regional trade model of UK agriculture, by estimating input-output relationships between regions and regional trade elasticities. A more rudimentary approach could involve apportionment of UK output changes onto regions through estimates of regional production. All approaches will be assessed for their potential costs and benefits throughout the paper.

Results

100 – 250 words

The purpose of this paper is to assess both the proposed approach and alternative approaches to estimating regional impacts of the UK's FTAs. As such, results are at an exploratory stage. Results will be segmented into separate categories, with each approach assessed on its merits in different sections. Firstly, we'll assess how effectively impacts of FTAs can be distinguished between regions, for example the relative costs and benefits of an FTA on Scotland compared to England. Secondly, we'll assess to what extent the data underpinning the analysis is robust. Further, we'll examine how easily a direct assessment on consumer and producer impacts in a given region can be estimated – for example is a given region likely to disproportionately experience consumption effects, while another region might disproportionately experience producer effects? And finally, to what level of sectoral disaggregation can the methodology be applied – is it to a country level (England, Scotland, Wales, Northern Ireland) or to a lower regional level? Our overall conclusions will weigh up the merits of each approach according to these criteria.

To conclude, our modelling demonstrates potentially substantial impacts of Free Trade Agreements on domestic agricultural sectors. A full examination of significant changes to domestic sectors should incorporate a regional analysis of impacts. This paper explores the options available to undertaking this analysis. The paper recommends the use of welfare outputs from trade models to assess both the consumption and production impacts on a given sector, allowing a fuller picture than a simple apportionment of GVA impacts. This involves the use of Partial Equilibrium modelling outputs. The limitations of this approach, and those of other explored approaches, are also set out. Nonetheless, this approach should develop the comprehensiveness and quality of the analysis of UK trade policy.