

Estimating interregional trade in the UK: available options

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Our project

Improving the quality of regional economic indicators

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Overview

The first part of the project will focus on improving inter-regional trade flows data.

Lead: [Steve Gibbons](#) (LSE)

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Expected end date: Q4 2018/2019

Objectives: It is clear there is an increasing focus and attention on regional economic performance and the devolution of powers in the UK. Scotland is at the forefront of devolution and we believe provides a useful case study to begin developing new regional indicators.

We plan to undertake two projects, to take forward a stream of work to improve the quality and usefulness of regional economic statistics. The first of these focuses on improving inter-regional trade flows data. The second area of work, which would take place beyond the project end date shown, is to further improve the quality and robustness of regional fiscal data

Project code: 3.4

Outline

- Overview of our project and conclusions of scoping and feasibility study so far
- Next steps

Motivation – devolution and regional policy across UK

- Scotland Act (2016): Around 2/3 of exp. controlled by Holyrood; 50% of devolved budget depends on Scot revenues;
- Wales: Wales Act (2014 & 2016): stamp duty land tax, landfill tax and (from April 2019) partial devolution of income tax
- Northern Ireland: Devolution of corporation tax(?)
- English Regions: Northern Powerhouse & City Deals

Inter-regional trade: why?

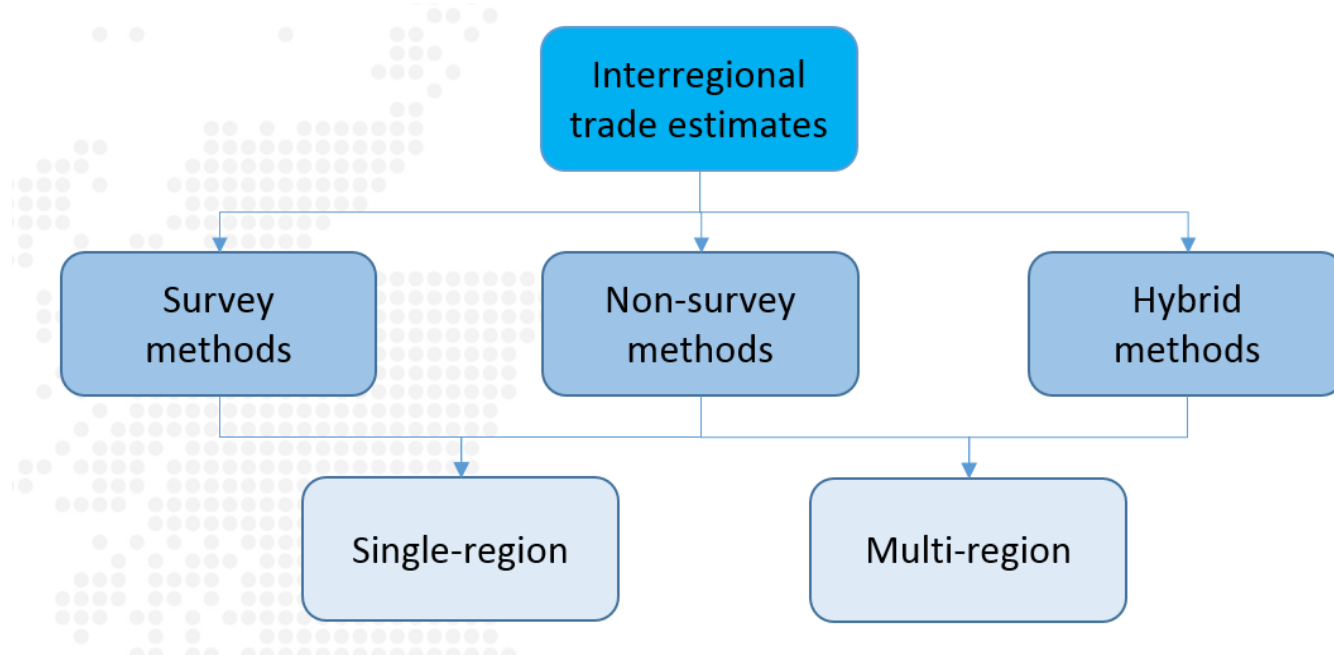
- Economic policy
 - Regional impact of national policies – e.g. Brexit;
 - Regional spill-overs
 - Value of policies: e.g. infrastructure, industrial policy etc.

Ultimate goal of project

		Importing region....		
		Region 1	Region 2	Region N
Exporting region...	Region 1	$r_{1,1}$	$r_{1,2}$	$r_{1,N}$
	Region 2	$r_{2,1}$	$r_{2,2}$	$r_{2,N}$
	Region N	$r_{N,1}$	$r_{N,2}$	$r_{N,N}$

- Consistent set of interregional trade flows within the UK
- Consistent with National Accounts
- Using available official statistics as much as possible

Possible methods



Possible methods

- Surveys
- Location Quotients (ignoring distance in allocating trade)
- Gravity (fully incorporating distance in allocating trade)
 - Parameterised estimates for destination/origin by distance and sensitivity
- “Optimisation” Methods (using data as “inputs”)
 - Origin and destination data to allocate interregional trade

Our approach

- Regional economic accounts estimation
 - Supply and use estimates for each ‘region’ of UK;
 - Fortunate to have mix of region-specific estimates and regionalisation of national data.
- Taking four nations of UK as a starting point –
 - Both Scotland and N. Ire produce regional accounts;
 - Last IO tables for Wales produced by Welsh Economic Research Unit for 2007;
 - No single-region SUT (or IO) produced for England - could, in theory, be generated as ‘residual’.

Possible methods

		Region A		Region B		Final Demand				Total
		Products	Industries	Products	Industries	Domestic uses	Exports			
							Region A	Region B	Rest of World	
Region A	Products		Intermediate demand			Consumption and GFCF		Interregional exports	International exports	Total use
	Industries	Output								Total output
Region B	Products				Intermediate demand	Consumption and GFCF	Interregional exports		International exports	Total use
	Industries			Output						Total output
Value Added			Regional GVA		Regional GVA					
Imports	Region A			Interregional Imports						
	Region B	Interregional Imports								
	Rest of World	International imports		International imports						
Total		Total supply	Total output	Total supply	Total output					

Our approach

- Origin and Destination Estimation
 - Little data of where goods and services may go to or come from.
 - Businesses themselves do not often know where products are ultimately sold. And this is also true for trade within a firm
 - Instead use inference from data on potential trade flows
 - Need to make distinction between direct trade (which moves directly from origin to destination) and indirect trade (transshipment)

Our approach

- Origin and Destination Estimation (contd)
 - Where have known information use this – suggest some areas focus upon specific surveys
 - For goods
 - Focus upon transport statistics
 - For services
 - Business travel statistics
 - For some large national services more appropriate to use employment vs. consumption comparisons

Required data

- Supply-Use Tables by region
 - Regional production and consumption (consistent at national level)
 - Trade volumes to the rest of the UK and the rest of the World by region
- Destination and origin statistics
 - By sector, including value (and volume), e.g.
 - Goods - Freight data
 - Services – Business travel
 - Bank transactions?

Exploitable data – freight statistics

Distribution of total freight lifted by origin and destination, 2016

		Destination				
		England	Wales	Scotland	Northern Ireland	Total
Origin	England	80.2%	1.4%	1.2%	:	82.7%
	Wales	1.5%	3.0%	:	:	4.5%
	Scotland	1.0%	:	8.3%	:	9.3%
	Northern Ireland	:	:	:	3.3%	3.3%
	Total	82.7%	4.3%	9.5%	3.3%	

Source: [DfT](#), NISRA

Exploitable data- maritime statistics

Outward destination of interregional UK coastwise freight by country port origin and country port of destination

		Destination				Total
		England	Scotland	Wales	Northern Ireland	
Origin	England	18.3%	5.5%	1.6%	9.7%	35.1%
	Scotland	17.2%	2.1%	2.4%	10.1%	31.8%
	Wales	5.7%	0.1%	1.9%	2.8%	10.4%
	Northern Ireland	13.8%	6.7%	0.3%	1.9%	22.7%
Total		55.0%	14.4%	6.1%	24.5%	

Source: [DfT](#)

Services data

- Business class travel as a “fail safe”
- Range of other sources applicable to services (on a sector-by-sector basis)
 - Energy Grid data
 - TV subscriptions (BBC license fee) for telecoms
 - Post Office information
 - Etc
- For some sectors, location quotient analysis is more appropriate

Conclusions and next steps

- Clearly demand for inter-regional trade statistics in the UK
- Our work suggests that be-spoke UK estimates are feasible
- First estimate of results for Scotland, Northern Ireland and England/Wales: September 2018

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