



The Sterling Depreciation in June 2016 and Regional Competitiveness in the UK

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Key depreciations (Jun 23/24, 2016) of the pound; 5.8% to €, 7.2% to RMB, 7.8 to US\$ and 10.9% to yen

“Why Donald Trump is RIGHT - a weaker pound IS GOOD news for Britain” (*Daily Express*, Jan 16, 2017)

“Corbyn to say lack of industrial plan means firms unable to profit from ‘competitive’ pound” (*The Guardian*, Jul 24, 2018)

Issues:

- In modern globalized economy, exports require imports
- Firms in UK regions also compete on domestic markets



Research question:

How different have the immediate price competitiveness effects of the referendum-induced depreciation of the pound sterling been across UK regions?

Method:

Value-Added Real Effective Exchange Rates (VA-REER, Bems and Johnson 2017, *AEJMacro*)

Data:

EUREGIO global input-output table for 2010: WIOD with geographical disaggregation to NUTS2 level for EU countries (Thissen *et al.*, 2018)



Global tables, with interregional detail (NUTS2) for EU countries (except CRO, ROU and BUL, and small countries); 14 industries

Constructed on the basis of

- World Input-Output Database (Timmer et al., 2015, *RIE*)
- Regional Economic Accounts (Eurostat, Cambridge Econometrics)
- Regional Supply and Use tables
- Transportation data (for interregional trade in goods)
- Business class travel data (for interregional trade in services)



Nominal bilateral exchange rate:

NER: number of euros per pound

Decrease: pound becomes cheaper, hence increase in competitiveness

Multiple trade partners (with different currencies):

Nominal effective exchange rates:

NEER: trade-weighted geometric mean of NERs

Price levels tend to differ across countries (*The Economist's BigMac-index...*), hence

Changes in price levels taken into account in *Real Effective Exchange Rates (REERs)*, including CPIs in the weights



How to determine weights?

Until recently: gross exports-based weights

Regional applications:

Clark et al. (1999, *JRS*): US regions

Yan et al. (2016, *CHN&WE*): Chinese provinces

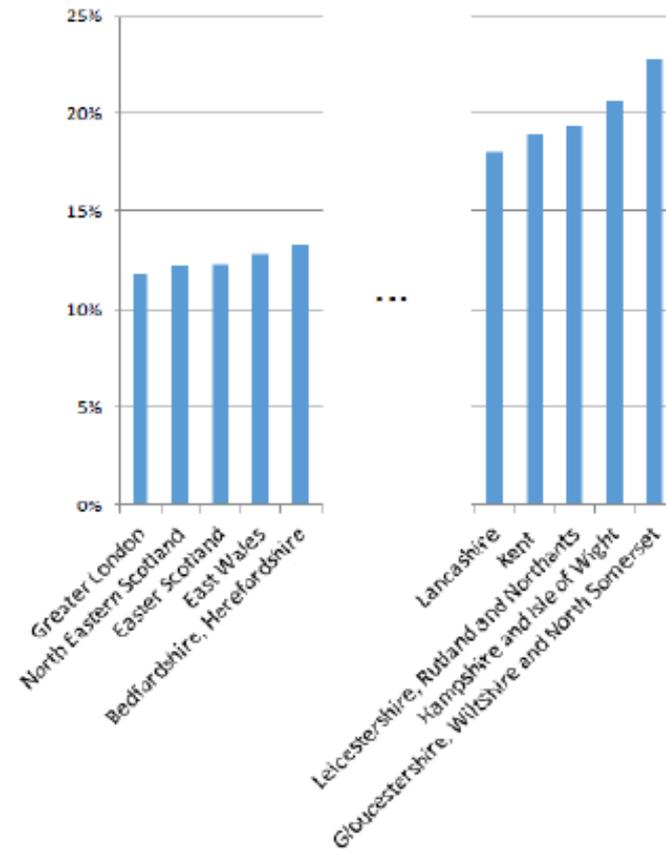
Important to bear in mind: Cornwall's exchange rate to Devon did not change, while its firms also compete for market shares in Devon...



According to EUREGIO data for 2010:

Gross exports as share of total regional sales (gross output) varied between 12% (Greater London; NE Scotland; E Scotland) to 21% (Hampshire) and 23% (Gloucestershire etc.)

(b) Gross Exports as Share of Total Regional Gross Output



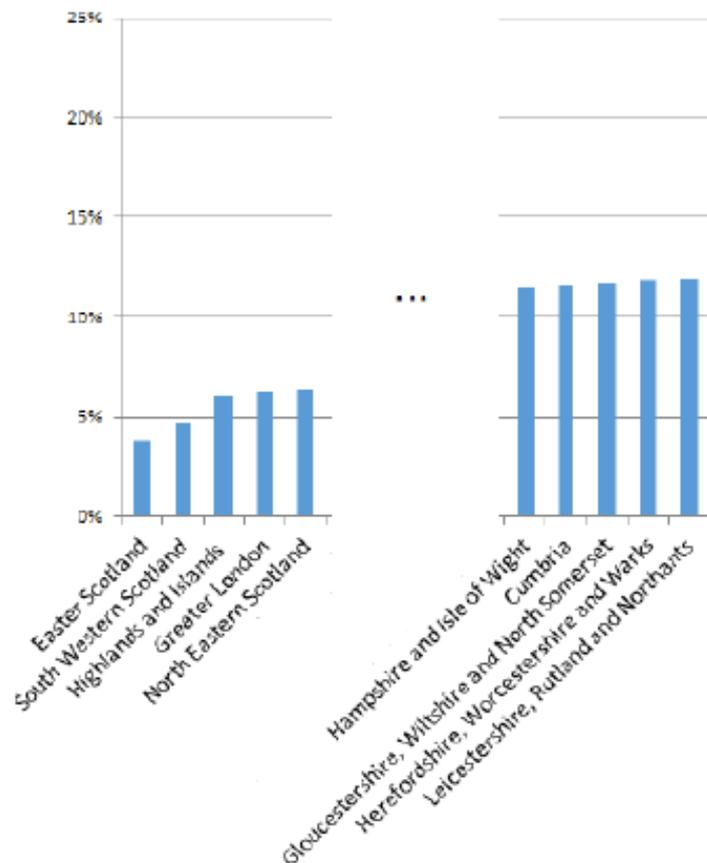


Bems and Johnson (2017, *AEJMacro*):

In a world dominated by GVCs, imports are needed to export, and *value added-based weights* should be used rather than gross-exports based weights. Price level corrections based on GDP deflators: *VA-REERs*



(a) Imported Intermediates as Share of
 Total Regional Gross Output



According to EUREGIO
 data for 2010:

Imported intermediates as
 share of gross output varied
 between 4% (E Scotland)
 and 5% (SW Scotland) to
 12% (Hampshire;
 Gloucestershire;
 Leicestershire)



Hats denote log changes

$$\widehat{\text{REER}}_i^{\text{va}} \equiv \sum_{j \neq i} \left[\frac{-T^{ij}}{T^{ii}} \right] (\hat{p}_i^{\text{va}} - \hat{p}_j^{\text{va}}).$$

Weights: Elasticities

Important: j 's VA can be a substitute for i 's VA, but also a complement (in VCs)

Change in price of VA in i relative to VA in trade partner j . Effects of depreciation, corrected by GDP price deflator (sourced from OECD).



$$T_x \equiv \sigma T_\sigma + \rho T_\rho + \gamma T_\gamma$$

σ : Elasticity of substitution between final goods from different regions/countries

ρ : Elasticity of substitution between intermediate inputs from different regions/countries

γ : Elasticity of substitution between intermediate inputs and value added

Main analysis: $\rho = \gamma = 0$ (structure of VCs cannot change), $\sigma = 1$ (price competition in final products).

VA-REER weights (selected UK regions):

	EU	NAFTA	BRIIC	UK
N-Ireland	35.3	11.0	8.1	42.8
Greater London	33.6	10.2	7.6	45.9
West Midlands	25.4	9.0	6.2	57.2
E Scotland	24.2	9.7	5.2	59.0
SW Scotland	23.3	10.1	5.2	59.3
Highlands and Islands	12.6	7.4	3.0	75.5



Table 4: Value-Added REERs for UK Regions

NUTS-1 Regions	NUTS-2 Regions	Log Change in Value-Added REER
South West	Gloucestershire, Wiltshire and North Somerset	-45,64
South East	Hampshire and Isle of Wight	-42,88
South East	Kent	-38,52
South West	Dorset and Somerset	-37,51
South West	Devon	-37,44
South West	Cornwall and Isles of Scilly	-37,08
East	Essex	-37,01
East Midlands	Leicestershire, Rutland and Northants	-35,86
Northern Ireland	Northern Ireland	-35,39
London	Greater London	-34,93

Gloucestershire gained 0.046% in price competitiveness.

Other main “winners” mainly in Southern England



Table 4: Value-Added REERs for UK Regions

North East	Tees Valley and Durham	-28,64
East Midlands	Derbyshire and Nottinghamshire	-28,62
Yorkshire and the Humber	West Yorkshire	-28,50
North West	Merseyside	-28,12
North West	Cumbria	-28,10
Yorkshire and the Humber	South Yorkshire	-27,27
Scotland	South Western Scotland	-26,88
Scotland	Easter Scotland	-26,84
Scotland	North Eastern Scotland	-18,80
Scotland	Highlands and Islands	-17,60

Highland and Islands gained just 0.018% in competitiveness

Other “relative losers” mainly in Scotland and Northern England



The overnight fall of the pound after the Brexit referendum

- has increased the price competitiveness of all UK regions, but to very low extents
- has increased the competitiveness of regions with an international output pattern more than regions mainly selling to UK markets
- has increased the competitiveness of richer regions a bit more than that of poorer regions, adding to regional inequality in the UK



$(\sigma = 1, \rho = \gamma = 0)$

$(\sigma = \rho = \gamma = 1)$

	Short run	Long run
Gloucestershire	-45.6	-43.0
N-Ireland	-35.4	-34.4
Greater London	-34.9	-34.3
West Midlands	-28.7	-29.9
SW Scotland	-26.9	-23.3
E Scotland	-26.8	-21.4
Highlands and Islands	-17.6	-18.3

(-45.6 implies a 0.046% increase in competitiveness)