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Market Potential in British Regions, 1871-1931

Nicholas F. R. Crafts

© Nicholas F. R. Crafts
Department of Economic History
London School of Economics

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involves more than one mode, distance has to be based on an equivalence between modes based on relative cost.

The notion of regional economic potential can also be thought of as representing market access or market potential. This last term has been adopted by the new economic geography which has led to renewed interest in the concept. In this tradition, the centrality of a location is expected to be a powerful influence on firms' decisions on where to locate. For example, industries with higher economies of scale may tend to concentrate in more central locations as may firms which are highly dependent on inputs of intermediate goods or firms which desire to be near their customers. These arguments tend to matter when transport costs are neither very high nor very low but are 'intermediate' (Midelfart-Knarvik et al., 2000).

Ingredients Of Market Potential

To estimate market potential requires data on GDP of home regions and foreign countries and also measures of distances based on relative transport costs between these locations. Each of these necessitates some choices about procedure on the part of the investigator.

Until recently, there have been no data on regional GDP before 1971. Geary and Stark, 2002 set out a proxy method for using information on employment and wages which they used to obtain estimates for Ireland, Scotland and Wales for 1871-1911. These results are extended to the remaining British regions and refined by using income tax assessments to allocate non-wage income in Crafts, 2004. For 1921 and 1931, the Geary-Stark method can again be employed but for these years it is not possible to make any adjustment to incorporate evidence from the geography of income tax assessments since these

were no longer published. The resulting estimates of regional GDP are shown in Table 1.[1]

GDP of European countries and big trading partners, India and the United States, will also be considered as relevant to market potential. This could be measured in £ using either current or purchasing power

of tariff barriers to trade.[3] The paper by Estevadeordal et al., 2002 facilitates a way to convert tariffs into an equivalent shipping cost. These authors estimate a gravity model for trade which has a distance elasticity

potential. Four points should be noted. First, if 1985 distances are used, then in both 1911 and 1931 relative market potential in North, Scotland and Wales looks much worse and very similar to 1985. Second, conversely, if 1911(1931) distances are used to calculate 1985 market potential, then relative to London & South East outer Britain looks much like its 1911(1931) level. Third, it makes little difference to the relative position of the northern industrial regions (North West, Yorkshire & Humberside) which year's distances are used. Fourth, for the midlands regions, the use of 1985 rather than 1911 or 1931 distances strengthens their relative position appreciably, and virtually all their improved relativity in 1985 compared with 1911 can be attributed to the replacement of historical distance equivalents with their modern counterparts.

Taken together, these results suggest that developments in relative transport costs have been much more important than shifts in the spatial distribution of GDP in accounting for

costs as trade becomes ever more complex, where data on trade flows permit, it may be preferable to estimate

interwar period stemmed from the difficulties of the Victorian staple industries rather than lack of accessibility to markets (Great Britain, 1940).

Conclusions

This paper has used the concept of regional economic potential or market potential, as defined by Keeble et al, 1982, to examine the changing centrality of British regions over time. Two main conclusions have emerged with respect to the questions posed in the introduction.

1) Compared with the early twentieth century in 1985 the North, Scotland and Wales were much more 'peripheral'.

2) The driving force of changes in the 'peripherality' of these regions was the rise of road transport and the demise of coastal shipping whereas changes in the spatial distribution of GDP played little part.

At the same time, it seems likely that for most of the twentieth century this had relatively little effect on regional competitiveness since market potential appears to have little effect on the location of industry.

Previous research in this area has been focused on the recent past where perhaps relative transport costs have been more stable than over the long run. At the same time, an important message from this paper is that calculations of market potential can be quite sensitive to changes in transport costs and this may be a valuable point to bear in mind as we confront the so-called 'death of distance' in the new era of globalization.

The resulting pattern of regional GDP in the years 1871 to 1911 is, however, rather different from that of the income tax assessments. In that period income tax was levied essentially on non-wage incomes. A refinement of the Geary-Stark method, which has been adopted in obtaining the estimates given in Table 1 of this paper, is to use their procedure to allocate wage income across regions and the tax data to allocate non-wage income. Details of this procedure are given in Crafts, 2004.

Table 1. Regional GDP, 1861-1931, £ mn current

	1871	*1881*	*1891*	*1901*	*1911*	*1921*	*1931*
UK	1208	1307	1495	2049	2330	5134	4359
London	203.7	231.8	298.4	423.9	500.0	949.8	775.9
Rest South East	133.4	139.3	157.2	231.8	279.3	590.4	688.7
East Anglia	40.7	38.0	36.5	43.0	47.1	118.1	95.9
South West	85.7	87.2	86.5	108.8	125.2	267.0	248.5
West Midlands	77.2	84.0	89.0	125.2	137.3	410.7	344.4
East Midlands	71.7	76.4	84.5	112.1	130.7	333.7	265.9
North West	146.6	166.5	194.6	262.1	297.4	775.2	605.9
Yorks & Humb	83.0	94.5	109.9	151.6	170.4	462.1	374.9
North	61.4	66.2	78.6	106.4	119.2	318.3	231.0
Wales	51.4	56.6	70.8	93.7	116.6	261.8	200.5
Scotland	123.9	141.0	163.4	240.8	260.0	646.9	527.4

Source: Crafts, 2004. For 1871 to 1911

Table 2. Foreign GDP (£mn current).

	1871	*1881*	*1891*	*1901*	*1911*	*1921*	*1931*
Austria-Hungary	403.5						

Table 3. Shipping Rates per ton (current price in shillings).

	Terminal Component (Constant)	Per 100 Miles (Coefficient)
1872-4	13.264	0.3815
1879-80	11.040	0.2500
1888-9	8.708	0.1680
1898-9	6.572	0.1520
1911-3	5.810	0.1680
1921-2	11.677	0.2300
1926-7	7.908	0.2160

Source: Kaukiainen, 2003: average of estimates for grain and coal.

Table 5. Relative 'Distances' from London in 1911, 1931 and 1985

	1911	***1931***	***1985***
East Anglia	60.7	60.7	101.1
South West	105.4	105.4	105.6
West Midlands	100	100	100
East Midlands	109.8	109.8	111.9

Table 7. Market Potential Relative to London & South East, 1911, 1931 and 1985: the Impact of Changes in Relative Transport Costs

	1911	*1911*	*1931*	*1931*	*1985*	*1985*	*1985*
Distances	**1911**	**1985**	**1931**	**1985**	**1911**	**1931**	**1985**
East Anglia	64.8	45.8	59.1	44.3	72.2	63.6	55.6
South West	73.5	53.5	66.4	54.1	81.9	64.8	61.4
West Midlands	57.6	63.2	68.2	69.0	59.7	60.5	71.5
East Midlands	54.0	61.7	62.9	64.0	55.3	57.8	66.7
North West	84.6	86.2	94.5	92.6	77.6	76.1	79.3
Yorks & Humb	67.0	67.8	74.8	72.9	67.2	66.1	70.9
North	70.6	43.3	57.6	44.6	78.2	58.0	47.5
Wales	75.1	49.2	63.5	48.8	81.0	62.8	53.6
Scotland	66.6	36.6					

References

Anthony, R. (1993) The Scottish agricultural labour market, 1900-39: a case of institutional intervention, *Econ. Hist Rev*. **46**, 558-74.

Armstrong J. (1987) The role of coastal shipping in UK transport: an estimate of comparative traffic movements in 1910, *J. Transp. Hist.* **8**, 164-78.

Bairoch P. (1993) *Economics and World History* Harvester Wheatsheaf, London.

Cain P. J. (1980) Private enterprise or public utility?: output, pricing and investment on English and Welsh railways, 1870-1914, *J. Transp. Hist.*

O'Grada, C. (1994) *Ireland: a New Economic History, 1780-1939*. Oxford University Press, Oxford.

Prados De La Escocura L. (2000) International comparisons of real product, 1820-1990: an alternative data set, *Exp. Econ. Hist.*, **37**, 1-41.

Scott, P. (2002), British railways and the challenge from road haulage: 1919-39, *Twentieth Century Brit. Hist*., 13, 101-20.

Sivasubramonian, S. (1997) Revised estimates of the national income of India, 1900-1 to 1946-7, *Indian Econ. and Soc. Hist. Rev*., **34**, 113-168.

Walker, G. (1942) *Road and Rail*. Allen and Unwin, London.