LSE Spatial Economics Research Centre

Friday, 12 October 2012

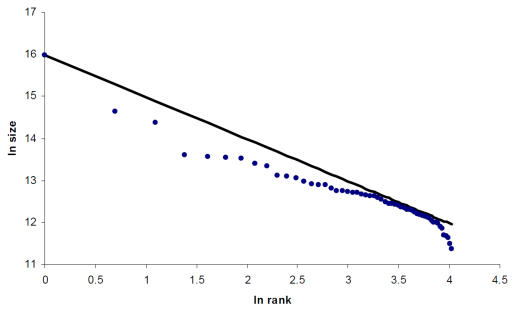
Are Britain's 'Second Tier' Cities too Small?

Interesting to see The Economist arguing that America's big cities help make it richer than Europe. The basic idea is that big cities deliver productivity benefits so that restricting growth of cities makes us poorer. As The Economist points out (based on research by my colleagues Christian Hilber and Paul Cheshire) the planning system certainly acts to restrict such growth in Britain.

As I've discussed that particular issue many times before, let me instead flag something else: These kind of arguments imply that the problem with Britain's urban system is *not* that London is too big. Instead, if anything it's that our cities are too small. As it turns out, this is an argument that applies particularly strongly to our 'second tier cities'. Drawing on Zipf's Law this is an argument that Pat Rice and I made back in 2008 in SERC's first ever pol paper. As we explained:

"Many factors contribute to determining the size of different cities in different countries at different times. Despite this diversity, statistical analysis for a wide range of countries suggests that the relative size of cities often satisfies an empirical regularity known as Zipf's law. A version of this law which is particularly easy to understand is known as the rank-size rule. In a group of cities that obey the rank size rule, the second largest city is half the size of the largest city, the third largest city is a third the size of the largest city etc. An easy way to see whether a group of cities obey the rank size rule is to draw the scatterplot of the (natural) logarithm of city size against the (natural) logarithm of its rank. Starting from the point on the vertical axis that corresponds to the largest city, we then draw a line with slope -1.If the group of cities obeys the rank size rule then all the cities in the group will lie alor this line.

Figure 1: Zipf Plot for English Cities Showing England's "Second Tier" Cities are Undersized



The figure shows such a Zipf plot for English Cities. Medium size cities in England are, roughly speaking, about the size Zipf's law would predict given the population of London, the largest city. As can be seen from the plot, the right hand end of the line sits just above points for this set of cities. But England's "second tier" of cities appear to be too small, as can be seen from the fact that their points lie some way below the Zipf line (a similar point c be made for a few smaller cities at the far right hand side of the figure). It is important to note that this feature is not a consequence of London being 'tc large'. If we had predicted the population of England's largest city by drawing the Zipf line through the medium size cities and projecting to the y-axis th we would obtain a figure not much different from that of the actual population of London. Of course, such a simplistic exercise comes with a number of important caveats (not least the fact that Zipf's law need not necessarily hold for English cities and that the exact definition of urban areas will affect the relative size of urban areas). But, the Zipf plot is at least indicative of the fact that, for England, second tier cities may be too small."

I don't think you should take this analysis too seriously, but I do think it's important to recognise that debates about London being too big may not just b wrong, but may also distract us from the equally important issue of how we ensure some of our second tier cities get bigger.

It's worth finishing by spelling out a couple of things that are likely to make that debate particularly difficult. First, cities can move up the ranking, so the best 'candidates' for big second tier cities could currently be quite small. Second, even if growth is going to come in some of our existing second tier cities, this arguably needs to be at the expense of other similar size cities rather than at the expense of London. You can see why the politics might favour avoiding that particular debate and focusing instead on London 'bashing'.

Posted by Prof Henry G. Overman on Friday, October 12, 2012

2 comments:

mike shupp said...

Intriguing... but I see geographical effects. The UK is basically one large island plus some smaller stuff. The island has a particular coastline, there are mountains in the interior in some places, there are not equal distributions of lakes or tin mines or forests or ... You get the idea. It doesn't seem surprising in retrospect that "second tier" British cities fall short of the size that might be expected in a more spacious setting.

Well... one can imagine a setting whewre the math applies but something else has gone wtong so second tier cities have their "proper" size and London is much reduced.

Alternately, one might imagine an imaginary UK in which London did not absorb its suburbs politically -- in which a London of say one million people is ringed by suburban cities which have a million or two million inhabitants of their own, a sort of blown up version of pupulation disributions in the 1850's. How would this fit Zipf's Law?

It strikes me Zipf's law would work quite nicely in an environment whre resources are distributed fairly evenly, where features like distance to the sea are ignorable, where finite size is not a constraint. Etc. It might apply to continental entities such as Germany or Poland rather more than to Britain or Italy, I suggest. It'd be an interesting idea to test Zipf's Law aginst city size distribution in those places. Or -- for extra credit! -- test Zipf's Law against Australia and New Zealand, or the USA and Canada...

13 October 2012 at 01:58

Mark said...

You also have a governance system that biases money flows towards London. Obvious to those outside of London & the Home Counties. Remove that bias then maybe these smaller cities might be more viable.

13 October 2012 at 19:15

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