INTRODUCTION

In March 2019 the UK government announced a £1.6 billion Stronger Towns Fund to be spent, over the next 7 years, to boost local economies in various parts of England through job creation and training of local people. In July 2019, under a new leader, a further £1 billion was added to the fund. Particular regions have been allocated specific amounts, the shares determined using a needs-based formula, accounting for productivity, income, skills, deprivation and the proportion of the population residing in towns. Accordingly, the North West, the West Midlands, Yorkshire and The Humber receive the largest shares. The East Midlands and the North East also receive substantial chunks, with less allocated to the more southerly regions of the South East, the South West, and the East of England. A portion of the fund has not been allocated to any particular region; any town in England can bid for a share of it, their chance of success dependent on their demonstration of need.

Some regions, such as the South East, are inherently stronger than others, but there is high intraregional inequality in economic strength. Knowing the rank of places within regions is required to allocate regional funding if it is to be distributed on a relative needs-basis. National ranking of places is also of interest for those wanting to demonstrate need for a share of the biddable funding.

METHOD

We used open data to construct a local authority (LA)-level Stronger Towns Index (STI) for England based on the Government's regional STF allocation criteria: productivity, income, skills, deprivation and the proportion of the population residing in towns. Productivity data was gathered as sub-regional estimates of gross value added (GVA), a measure of the value of goods and services produced in an area. The income component was derived from estimates of gross disposable household income. Proportion of persons with no qualifications or level 1 (secondary school) qualifications as highest qualifications as found in Census counts was used to construct the skills component of the STI. The deprivation component was constructed as the proportion of lower super output areas in the lowest decile of the Index of Multiple Deprivation. Data on the proportion of people living in towns was gathered from the Rural-Urban Classification. For the productivity and income components, a lower measure was given a lower rank. For the skills, deprivation and the proportion of the population residing in towns components, a higher measure was given a lower rank. The rank scores for each dimension were summed to give an equally weighted overall score which was converted to a rank value. We grouped LAs into deciles according to their index rank and examined the aggregate characteristics of LAs falling in each decile. Aggregate Linking deciles to the Office for National Statistics Longitudinal Study (LS), we investigated inter-decile migration patterns over a ten-year period, 2001 to 2011, including associations with LS members' characteristics.

RESULTS

All but one of the 32 LAs in the lowest decile, comprising the weakest LAs, were in the economically weaker regions; the Midlands and the North of England. Almost half were coastal.

With regard to inter-decile migration patterns over the ten-year period, 2001 to 2011, we found the vast majority of people (89%) to be in the same STI decile in 2011 as in 2001 (Table 1). Among those whose STI decile was 1 (the weakest) in 2001 who were in a different one in 2011 (N=5432), the majority (63%) moved to the 3 next weakest deciles (2-4), 8-9% moved to each of the 3 next stronger

(5-7) and fewest to the 3 strongest (8-10), around 4% to each. This may be due in part to housing costs. Also, most migration tends to be short-distance to nearby, similar places.

Figure 2 illustrates the population turnover between 2001 and 2011 for STI deciles, as indicated by the percentage of the 2001 population in a different decile in 2011 (leavers) plus the percentage of the 2011 population in a different decile in 2001 (newcomers). It can also be used to gauge the net change in population for each decile between 2001 and 2011, as the difference in the percentage of leavers in 2001 and newcomers in 2011. STI decile 1 had the lowest proportion of leavers in 2001. A fairly regular increase in leaving rate with rising strength reflected the greater mobility of stronger places. Similarly, STI decile 1 appeared to be the least attractive for newcomers. STI decile 6 was the most attractive, as indicated by the proportion of newcomers, with rate dropping off for strongest deciles, suggesting that stronger towns may be harder to enter. STI deciles 1-3 had the lowest 10-year turnover and net change. 10-year turnover was highest, at around 40%, for ST Index deciles 6-10. STI deciles 4-7 grew fastest, and 8-10 lost population.

Between 2001 and 2011 ST Index decile 1 had a net loss in younger people, 16 to 25 year-olds, (aged 6-15 in 2001) but net gains in people aged 46 years and over (data not shown). ST Index deciles 2 also had net gains in this age group. The strongest deciles (9 and 10), with the highest living costs, lost people aged 46 years and over to almost all other deciles.

Among those whose STI decile was 1 in 2001 who were in a different one in 2011, social renters were more likely than private renters and owner occupiers to move to Decile 2. Individuals were more likely to change housing tenure if they changed decile than if their decile was the same in 2001 and 2011.

CONCLUSIONS

The linked census data of the ONS LS allows the analysis of 10-year address changing, enabling longterm trends to be identified. For example, change between 2001 and 2011 can be compared with change between 1991 and 2001, and between 1971 and 81. Classification codings, such as the STI, can be attached to the relevant geographies stored for LS members' usual addresses at each census. In contrast to migration data from each census, which only has after-move details, the linked census data of the ONS LS allows migration to be analysed in terms of change in people's characteristics. For example, change in housing tenure of movers can be compared to that of non-movers.

Next we will examine the effect of leaving or entering a weaker decile on change in qualifications of LS members between 2001 and 2011.

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2001 decile	2011 decile										Total
	1	2	3	4	5	6	7	8	9	10	2001
1	41882	1020	1602	778	484	448	454	231	204	210	47313
2	1000	37412	1187	940	630	415	719	377	265	258	43203
3	1584	1218	47770	1219	836	663	947	574	365	487	55663
4	722	913	1017	31499	954	743	792	676	370	397	38083
5	440	623	839	972	28683	569	963	602	457	408	34556
6	384	430	721	800	568	23612	825	820	504	407	29071
7	432	695	826	940	962	1042	31849	946	1030	702	39424
8	298	475	615	814	740	1125	1223	27368	1289	797	34744
9	312	471	572	649	773	896	1586	1538	31124	2259	40180
10	217	405	464	475	526	620	1038	1127	2948	26626	34446
Total 2011	47271	43662	55613	39086	35156	30133	40396	34259	38556	32551	396683

 Table 1 An origin-destination matrix based on 2001 and 2011 deciles of the ST Index for all LS members identified both the

 2001 and 2011 Censuses (N=396,683, highlighted cells are same decile in 2001 and 2011). Source: ONS Longitudinal Study.



Figure 1 A bar chart showing destination decile of those whose STI decile 1 in 2001 but in a different one in 2011 (N=5432). Source: ONS Longitudinal Study.



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Figure 2 A bar chart showing proportions of leavers in 2001 and newcomers in 2011 by STI decile. Source: ONS Longitudinal Study.