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Oral Presentation Title: Modelling the Economic Benefits of Inter-city Connectivity

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There is a high level of current interest in investing in inter-city connectivity schemes. The rationale for these schemes is improved economic performance through increased productivity, jobs and output. Many of the impacts are likely to take place over long timeframes which are currently modelled coarsely in many models and some of the more detailed modelling methods which take account of the micro-foundations of trade and specialisation and agglomeration effects are based on static rather than dynamic frameworks. Inter-city transport schemes require significant capital investment and without dependable methods to assess their impact it raises policy questions about whether it is beneficial to invest in improving links between places.

To investigate the economic impacts of inter-city transport a stylised stock and flow model of UK cities Leeds and Manchester has been developed. The model has two sectors and a 20-minute reduction in rail travel times is introduced to understand the dynamics and the extent of barriers to localisation benefits, and to understand the degree to which these can be unlocked through inter-city transport. The results show that when the employment and GDP per worker inputs are similar for each sector in each zone and capital is fixed, the transport improvement leads to productivity gains from increased economic density but there is only a marginal reallocation of labour between sectors. With mobile capital the model tends towards the corner solution with full specialisation but the speed of adjustment is slower and the new steady state is reached after several decades. The results show that the potential benefits from full specialisation may be significant and inter-city connectivity can contribute to these through the realisation of localisation impacts more quickly.