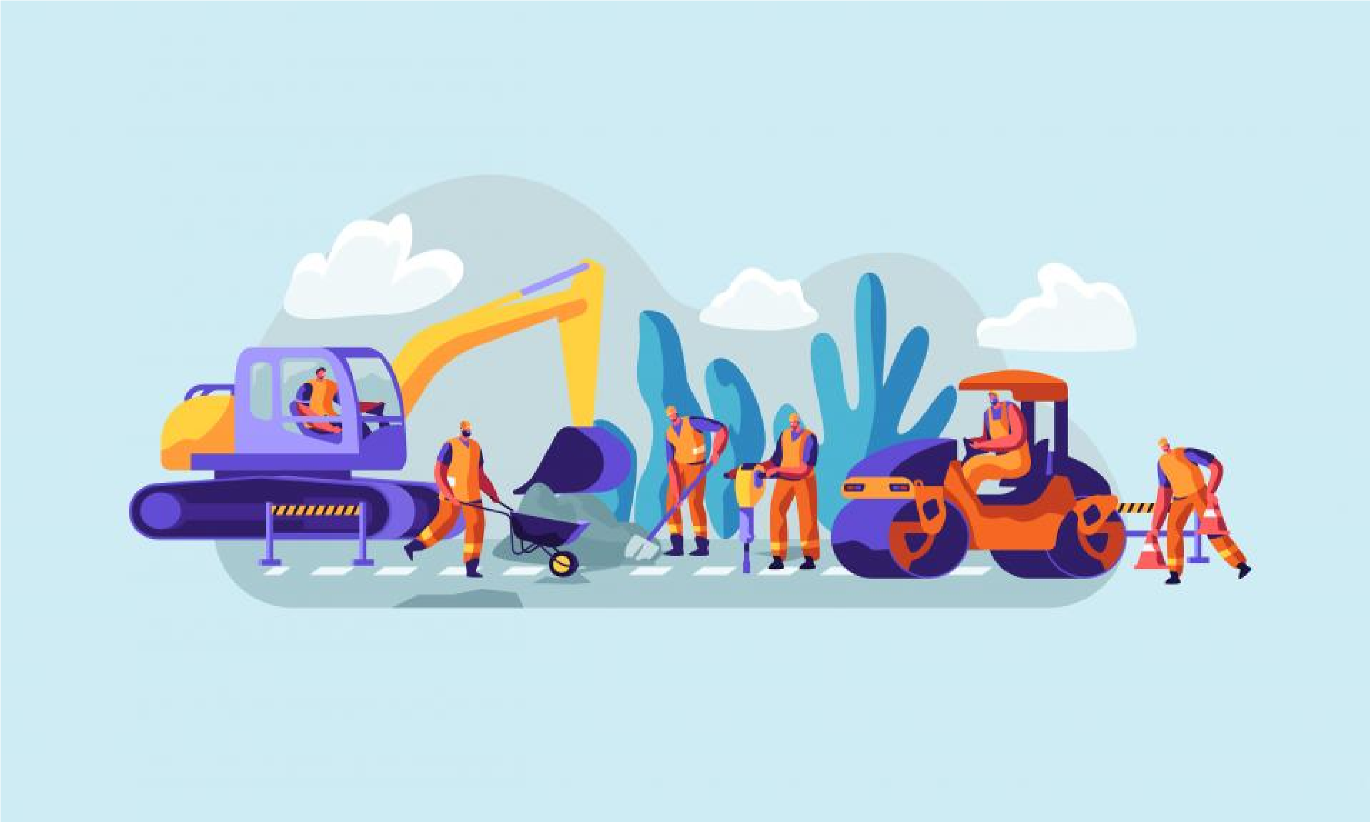
Are new roads worth the money?



Written by

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Investment in new road infrastructure is abundant, but the economic benefits remain undefined

In September 2019, the UK Government announced a new phase in its ongoing road development project. This will see 18 new roads constructed on the back of a £100 million investment. The announcement also set out the government’s intention to extend its Road Investment Strategy for another five years with an investment of £25.3 billion, following the completion of the 2015-20 phase that has seen £15.2 billion put towards the renewal and enhancement of 100 different road schemes.

In theory, at least, this is positive economic news: new roads and transport network improvements are commonly assumed to be a boon for the market. Highways England, for example, claims in its economic growth plan that road network improvements will "increase productivity, reduce costs, improve access to job opportunities and improve access to suppliers", among other benefits.

> The consideration of the wider economic benefits of road investment was ignored or minimised

Finding evidence to support these assumptions, however, is another matter. The environmental impact of new roads is relatively clear, both in terms of construction impacts and in terms of an ongoing increase in the number of polluting vehicles using those roads.

Economic impact, on the other hand, is less tangible; the UK has a highly developed transport infrastructure, and there is little strong evidence that additions to this network bring the positive market changes they are held to. Until recently, post-opening evaluation was focused on road users’ experience (e.g. time reliability and reduction of traffic congestion) and the consideration of the wider economic benefits of road investment was ignored or minimised.

Even now, appraisals still focus on predicting economic benefits before new roads are constructed, without then evaluating whether or not those benefits actually materialise further down the line, and when they do, they are not very robustly assessed.

What are new roads good for?

Our research aims to address this information gap, providing the first in-depth study on the effects of additions and enhancements to the UK's road network on employment levels, production output and wages. Specifically, we looked at 31 major new road-building schemes between 1998 and 2007, and connected them with existing data on businesses and employees in the affected areas.

The key challenge was working out in what way to measure road developments as many of the proposed benefits are intangible. We accounted for this by focusing on an index of employment accessibility that measures how many workers can reach a location in a certain time.

> It's conceivable there might be more significant returns from projects such as public transport improvements

A further challenge was how to account for the fact that new roads tend to be placed strategically to address a particular issue such as congestion or a lack of accessibility. This meant a like-for-like comparison of places with and without new road links would not be particularly enlightening, and instead we concentrated only on locations close to new roads, measuring accessibility effects within a 20 kilometre radius of the new road and excluding the areas directly crossed by them. All these places experience substantial increases in employment accessibility following the opening of the road schemes, but this was not a particular aim of the road investment policy.

Overall, our findings showed positive benefits from the development of new road infrastructure. For example, we found a 10 per cent increase in accessibility using the aforementioned index resulted in a three to four per cent increase in employment and a 2.5 to three per cent increase in productivity and average wages. This is mostly a result of an increase in the number of local businesses, with the quantity of new firms potentially accounting for employment rises, and competition between them potentially accounting for wage and productivity rises.

Work to be done

However, while they suggest a somewhat positive impact from the construction of new roads, these findings do not prove that such investment is always a good idea. For one thing, there's the opportunity cost of investment in public services or other areas of infrastructure; the benefits we found are small, especially given the scale of investment involved, so it’s conceivable there might be more significant returns from projects such as public transport improvements.

We also noted that, in spite of an overall rise in employment within an area, existing businesses in the area tended to lose employees, possibly as a result of wage and productivity increases making workers either less affordable or less essential.

What’s more, the benefits we observed may not translate to a national scale. We focused on electoral wards with an average area of 24 square kilometres and an average population of 6,000 people; in so small a location, it’s possible employment and wage increases are displaced from other areas that are not near enough to benefit from a particular new road scheme. If this is the case, the benefits may be negated on a larger scale, though our research suggests displacement is not the primary channel for local improvements.

Ultimately, there is more work to be done in this area. Our findings open the door to a new angle on a conversation that has traditionally been seen in reverse; as Steve Melia put it in a 2018 piece for the Campaign for Better Transport: “Economic growth has certainly caused transport investment in the past; whether transport investment has caused economic growth remains uncertain.”

Taken over a longer period and a larger area, with environmental impacts also considered, this line of research will be vital in determining which investments generate the best return. As such major infrastructure projects as HS2 come to fruition, this work could not be more timely or necessary in determining the practical layout of the UK for the coming decade.

This article draws on findings from the paper “New Road Infrastructure: The Effects on Firms” by Stephen Gibbons (London School of Economics), Teemu Lyytikäinen (VATT Institute for Economic Research), Henry Overman (London School of Economics) and Rosa Sanchis-Guarner (Imperial College London).

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Rosa joined Imperial College Business School as a British Academy Postdoctoral Fellow in October 2015. She is also an Associate at the Urban Programme at the Centre for Economic Performance, London School of Economics.

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