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Will HS2 create jobs?

The Government claim that building their proposed new high speed rail line from London to Birmingham (HS2) will create around 40,000 jobs. Even if that estimate is accurate though, they are planning on spending around £17 billion to achieve that objective. This research note looks at the opportunity cost of that spending, and whether the line is likely to produce net new jobs.

Earlier TaxPayers' Alliance research, produced by senior railway executive Chris Stokes, looked at the broader weaknesses of the business case for HS2.¹

The key findings of this research are:

- The existing net capital stock in the UK economy was around £103,000 per workforce job in 2009, the most recent year for which data is available.
- At a cost of £17 billion, **the London to Birmingham portion of HS2 will cost well over £400,000 for each of the 40,000 jobs created.** That investment would create over 170,000 jobs – more than the working population of Coventry – if it achieved the same cost per job as in the wider economy.
- That implies **HS2 will cost four jobs for every one created.**

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¹ That research note is available here: <http://www.taxpayersalliance.com/highspeedrail.pdf>

Analysis

An increasing number of major projects are promoted on the basis that they will create jobs. The number of jobs claimed can be impressive, such as the purported 40,000 jobs that will be created by a new high speed rail line – cited in the Department for Transport consultation document,² but they can be very misleading. There are two issues:

- The estimate of jobs created may be inaccurate in itself. For example, the estimate of jobs created by HS2 may be based on overly optimistic demand assumptions, like the wider estimate of costs and benefits.
- There are opportunity costs to any major investment, in the form of foregone opportunities to make other investments. Any investment on the scale of the £17 billion the Government plans to spend on the London to Birmingham high speed link would create jobs. But if that investment is not made, other investments, elsewhere in the public or private sectors, could lead to greater gains in employment.

For the purposes of the calculations in this research note, we will assume that the 40,000 jobs estimate is accurate. There are a number of reservations about that figure though:

- 9,000 of the jobs are in construction, and therefore likely to prove impermanent.
- Regeneration benefits may well come primarily from shifting economic activity around the country. Jobs created may therefore not represent higher employment, but come at the expense of fewer jobs elsewhere.

The second concern is particularly critical, as the Financial Times put it in a leader, 28 February 2011:

“To govern is to choose. Would the benefits of a shiny new high-speed line outweigh the less visible but valuable things that could be done with the limited funds available?”

To test whether high speed rail is an efficient way of promoting employment, we can use a method deployed by two recent studies, which assessed the opportunity costs of major investments in the energy sector.

The paper *Study of the effects on employment of public aid to renewable energy sources*,³ produced by a team led by Dr. Gabriel Calzada Álvarez at the Universidad Rey Juan Carlos in Spain, pioneered an attempt to understand this issue by comparing the capital stock per worker across the broader economy with the cost per worker of the investment.

² Available here: <http://highspeedrail.dft.gov.uk/sites/highspeedrail.dft.gov.uk/files/hsr-consultation.pdf>

³ Available in English here: <http://www.juandemariana.org/pdf/090327-employment-public-aid-renewable.pdf>

There has been criticism of that paper, but that criticism has mostly argued either that the estimate of jobs created by renewable energy support was wrong (Dr. Calzada used an estimate produced by a European Commission initiative) or that a better measure would be to look at the amount of employment produced for every dollar of investment in different sources of energy (which is obviously inappropriate when projects entail significantly increasing investment in a sector not previously promoted primarily as a source of employment). In the case of HS2, the estimate of jobs created comes from the DfT.

It was followed up by a study by Luciano Lavecchia and Carlo Stagnaro for the Istituto Bruno Leoni in Italy.⁴ The researchers in that study summed up what the results imply:

“The only scope, and we dare to say the only result, of our study is to show that green investments are an ineffective policy for job creation.”

To produce a similar estimate for HS2, the first step is to calculate capital stock per worker in the broader economy. The Office for National Statistics put the total net capital stock of the UK – the total cost (at current prices) of replacing all capital assets in their current condition – at £3.182 trillion in 2009.⁵ They also recorded the total number of workforce jobs at nearly 31 million.⁶ That implies net capital stock per worker of £102,655.

By contrast, the proposed high speed rail line from London to Birmingham is expected to cost £17.8 billion and create 40,500 jobs – 9,000 in construction; 1,500 in operations and maintenance; and 30,000 from wider economic regeneration. That is nearly £440,000 per worker.

Calculation	Wider Economy	Amount
A	Net capital stock, 2009	£3,182,000,000,000
B	Employment, 2009	30,997,000
C (A/B)	Capital stock per job	£102,655
HS2 - London to Birmingham		
D	Cost	£17,800,000,000
E	Jobs created claim	40,500
F (D/E)	Cost per job	£439,506
Comparison		
G (D/C)	HS2 opportunity cost, jobs	173,396
H (G/E)	Ratio, opportunity cost/jobs created	4.3

For every one job supposedly created by HS2, we could expect four jobs to be created in the wider economy for the same amount of money.

⁴ Available in English here: http://brunoleonimedia.servingfreedom.net/WP/WP-Green_Jobs-May2010.pdf

⁵ Office for National Statistics *Capital Stocks, Capital Consumption and Non-Financial Balance Sheets*, 2 August 2010

⁶ Office for National Statistics *DYDC: UK Workforce Jobs SA : Total (thousands)*



The fact that the wider economy generates more than four times as many jobs for every pound in capital stock suggests high speed rail is a deeply inefficient generator of new employment, and there is a significant opportunity cost to investing in it. High speed rail is capital intensive, not labour intensive, and for the Government to promote it as a means to increase employment is misleading.