HS2 Policy Briefing
October 2013

Context

High Speed Two was proposed by the Labour Government in 2008 with the key aim of addressing the capacity shortages on the West Coast line. In 2009 the Government established High Speed Two Ltd. to manage the HS2 project. The company has proposed a two-stage implementation strategy. Stage one will connect London to Birmingham, creating the link between the two largest cities in the UK and thus helping to meet high demand for travel between them. Stage two will extend the line to Leeds and Manchester, creating a Y-shaped network. Since 2009 the scheme was supported by all three major political parties. In January 2012 the Department for Transport (DfT) confirmed that it would go ahead with the scheme.

A “NO to HS2” campaign led by environmental groups and residents of areas that would be affected by the new line has been running since the project was first proposed. But since the summer, after the Department for Transport (DfT) announced an £8 billion increase in project costs, and reports by the National Audit Office and the Public Accounts Committee pointed out weaknesses in the case for HS2, the pendulum of public opinion seems to have swung in favour of those with concerns about the project. The change in the nature of the debate over the summer of 2013 was largely driven by influential figures such as Alistair Darling, Peter Mandelson and Lord Ashcroft expressing concerns about the scheme. With more and more politicians doubting the merits of the scheme the broad political consensus behind HS2 is now in question.

3. ‘HS2 costs could mean rail nightmare, says Darling’, BBC 23 August 2013 http://www.bbc.co.uk/news/uk-politics-23808993
4. Pickard J ‘Mandelson fears HS2 will prove an “expensive mistake”’, Financial Times 2 July 2013 http://www.ft.com/cms/s/0/5be0c442-e31d-11e2-bd87-00144feab0d0.html?siteedition=uk&siteedition=uk
This policy briefing looks at the arguments at the core of the HS2 debate, assesses the evidence currently available to support them and identifies questions that need to be answered before the decision on whether HS2 is a worthwhile investment can be made. It also explores the issues that need to be addressed in order to make the most of HS2 for UK cities if the scheme goes ahead.

The briefing focuses on the economic aspects of the HS2 project as city economies is our core area of focus. We recognise that environmental and social considerations also form a part of the decision-making process and should also be analysed and considered in full to inform the debate.

The current debate

Over the last couple of months the debate around HS2 has become extremely heated. Whilst there are strong opinions about the project, the relative weakness of the available evidence means that key arguments presented by both sides often directly contradict one another, even when using the same evidence.

The Government’s case for HS2 is broadly based on the following arguments:6

- The Visit Britain report shows that HS2 is needed to support future economic growth across the UK by facilitating trade and travel to work through improving the transport connections between major UK cities
- HS2 will provide a long-term solution to capacity shortages on the West Coast Mainline.
- A North-South high speed rail link will help rebalance the economy.
- HS2 will help reduce carbon emissions by shifting people from roads to rail.

The main arguments against HS2 are:

- The economic and financial cases for HS2 are not strong enough to justify the scale of investment.7
- HS2 is a stand-alone project and is not a part of a strategic vision for the future of infrastructure in the UK.8
- A proper environmental impact assessment has not been completed for the scheme (15 councils and resident associations have tried taking HM Government to court over this).9
- Expensive ticket prices mean that HS2 will serve the interests of a relatively small number of wealthy individuals and will not be accessible to the broader public, meaning that large public investment is not justified.10

Key questions to address

Over time the HS2 debate has become surrounded by inaccuracy and myths, which have been reproduced and amplified as the debate grows more partisan. In order to bring clarity to the debate we need to explore some of the key questions and issues raised by the international experience and academic research.

Question 1: Can the decision to invest in High Speed Rail be taken purely on economic grounds?

Recently the debate has focused on the big numbers. The Government and HS2 Ltd. have commissioned a series of value for money assessments. These have been critiqued by the National Audit Office (NAO), the Public Accounts Committee (PAC) and experts such as Professor Henry Overman11. While opponents continue looking for flaws in the assessment techniques, those in charge of taking HS2 forward continue to look for new ways to capture the benefits in numbers. The big question is whether this war of numbers and methodologies actually actually means very much?

6. David Cameron on HS2: “It is an example of what we need to equip us to succeed in the global race, secure economic prosperity, rebalance the economy and support tens of thousands of jobs”, from ‘Political leadership defend high speed rail plans’, 2013 Transport Times
To date, three approaches have been used to assess the economic benefits of HS2:

- The first used traditional cost-benefit analysis techniques and assigned weight to time-saving benefits.12
- The second study, conducted by KPMG, took a broader look at the economic benefits and focused on potential business relocations, concluding that HS2 would boost the economies of areas along the network as well as away from it. However, critics argued that this study had methodological flaws and failed to account for alternatives to HS2.13
- The most recent economic case for HS2 published on 29 October 2013 has changed the focus back to the benefits of delivering additional capacity and has used upgraded forecasting and evaluation techniques.14 As a result the benefit-cost ratio (including wider economic benefits) is estimated at 1.7 for phase one and 2.3 for the full network. This represents a decline from values of 1.9 and 2.5 reported previously.15

Long-term cost benefit assessments like this are always extremely difficult. In the HS2 case we need to look at least 50 years into the future to account for costs and benefits, which is almost impossible to do accurately. A NAO review of the economic benefits of HS1 is an example of how difficult and prone to error these assessments are. The report concluded that total ridership on the network was three times lower than originally forecasted. Current evidence suggests that the project has not delivered on value for money and it is unlikely to do so even if broader economic benefits are included.16

Large infrastructure projects require long-term strategic vision and commitment, which can only be informed by cost-benefit analysis up to a point. This is particularly relevant for a project of the scale of HS2, which may have benefits that go far beyond those that can be picked up by traditional techniques.17 The 100-mile Victorian sewer network built in 1860s cost London an equivalent of £430 million in modern prices, and would have most probably failed any cost-benefit test.18 Nevertheless it was instrumental in supporting London’s growth from the late 19th century and all the way through the 20th.

This confusion is not unique to HS2. Today there is no consensus on how decisions on large infrastructure projects should be made. The balance between traditional cost-benefit approaches and wider economic impact assessments is yet to be found and both academics19 and transport practitioners are far from finding a consensual solution.20

International experience shows that the development of high-speed rail networks are, in most cases, driven by political aspirations and commitments rather than economic considerations. This was the case in France, Japan and Spain where rail improvements were a part of the Government’s wider commitment to modernisation.21 Such political considerations could play a part in UK decision-making.

**Question 2: Will HS2 rebalance the economy?**

The Government believes that HS2 can be a catalyst for economic rebalancing, by enabling businesses in regional centres such as Birmingham and Manchester to benefit from quicker access to the London market, thus helping to reduce the North-South divide. However, the international evidence on the rebalancing potential of high-speed rail is relatively weak.

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15. HS2 (August 2012) ‘Updated economic case for HS2’
18. "Does London need a £4.2 bn 'super-sewer'?", BBC 12 September 2013
Economic theory presents arguments for and against high-speed rail as a rebalancing tool:

- The basic principles of New Economic Geography (NEG) suggest that better connections between central places (i.e. London) and other areas (i.e. elsewhere in the country) could widen the disparities between their economies. This could happen because businesses from the capital would be able to access other city markets, which would increase competition and drive local businesses out. On the other hand, the traditional framework of NEG does not fully account for imperfect labour mobility, disbenefits of agglomeration and other factors that can strengthen centrifugal forces.

- The Government’s Local Growth White Paper, which laid down the principles behind the localism agenda of the current government, is largely based on NEG principles. Most references to transport as a factor of local growth are in the context of intra-urban transport systems and rail is only mentioned with reference to Crossrail, a city-region scale project that aims to allow further concentration of economic activity.

- The alternative to NEG suggests that if travel times are improved, businesses may relocate away from the centre to take advantage of cheaper offices and labour as the High Speed connection will allow them to access core markets from remote locations.

- In reality the geographic shift of economic activity as a result of improved connections will also be determined by a breadth of additional factors. For instance a small differential in wages or rents between central areas and elsewhere would limit the incentive for businesses to move out. And even if the differential is high, there may be fewer people with the skills needed to run the business in a peripheral location meaning relocations would be unlikely.

- Additionally, new high-speed networks can have a negative effect on cities located away from the network, as businesses may choose to relocate to cities along the rail line. This could lead to greater centre-periphery segregation at a sub-regional level.

- Several empirical studies of the economic effects of high-speed rail have been conducted in the past, yet the evidence is inconclusive overall.

- Most empirical studies show that high-speed rail usually has a centralising effect at a national scale. This is often the result of the network shape. A hub-and-spoke network centred around the capital city naturally offers it the greatest connectivity gains. This was observed in France and in Spain where the connection of struggling peripheral cities to Madrid has fuelled the rapid growth of the capital since the late 1990s. By contrast, in Germany, where no single city stands out as the dominant centre, the introduction of a high-speed network has resulted in very little geographic shifts in economic activity.

- Studies of regional impacts of the Shinkansen high-speed rail network in Japan have shown that regions connected to the network have seen higher population and GDP growth than those bypassed by it. However, the network was designed to connect the most dynamic cities in the country to start with, which suggests that the impact of high-speed rail might be overstated.

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• In Korea a high-speed line between Seoul and Busan was opened in 2004 with an objective of rebalancing a heavily centralised national economy. However, as of 2010 the evidence suggests that so far this target has not been achieved.34

• At the urban and city region level the areas around new stations tend to benefit the most from improved transport links.35 Often, as in the cases of Lyon and Lille, this can be a result of regeneration schemes linked to station development which incentivise businesses to relocate from elsewhere in the sub-region.

• The study of the impact of the previous West Coast Main Line (WCML) upgrade, finished in 2008, showed that while key urban centres on the network benefited from faster connections, regional disparities widened during and after the completion of the upgrade.36

• Benefits to the city-wide economy of high-speed rail are less clear and, as the Lyon case study illustrates (Box 1), individual researchers tend to come to rather contradictory conclusions.37

Box 1: The story of two high speed connections: Lille and Lyon

Lyon was connected to Paris by the first TGV high-speed rail line in 1981 and its impact on the city economy is still debated. Some reports claim that early fears that Lyon would grow more dependent on Paris were exaggerated and that the new line has helped local medium-sized businesses expand into new markets.38 Other reports suggest that the overall impact on Lyon’s economy was negative as headquarters relocated to Paris and the rapid development of the area surrounding the new station caused businesses to relocate from elsewhere in the city region.39

The Paris to Lille high-speed link was completed in 1993 and was later expanded to connect Lille to Brussels and London. In this case, high-speed rail appears to have played a significant role in facilitating a structural transformation in a declining industrial city and its hinterland.

Between 1990 and 2006, Lille’s knowledge-intensive sectors expanded at 7.2 per cent per annum, which was almost one percentage point higher than the national average. In Lille the high-speed rail project was combined with extensive regeneration investment and improvements to local transport networks which were supposed to spread the benefits of high-speed rail across the region. Yet detailed analysis reveals that while several secondary centres located on the new line benefited from connection, areas away from the new line continued to experience below national average jobs growth. Out-migration from these places increased and there was no evidence of a structural change towards knowledge-intensive services.40

• The bottom line is that the evidence base makes it very difficult to predict how the spatial distribution of economic activity will change in response to HS2. However, the evidence we have suggests that the extent of the rebalancing between regions (North and South) that the Government is pursuing is highly unlikely to be achieved. Manchester and Birmingham are likely to gain, but that may come at the expense of other midland and northern cities and towns. London is likely to gain even more, but it is almost certain that there will be places that will lose out, and they are more likely to be the smaller cities of the midlands and the north than their relatively better performing southern counterparts.

References:
Question 3: Is HS2 the best way to support economic growth?

When David Cameron talks about HS2 as the means of keeping the UK in the “global race” he is not implying that Britain must compete with the rest of the world on train speeds. The real competition is on quality of business environment and investment climate. There is no question that transport infrastructure improvements decrease travel and transportation costs, ease access to markets and improve productivity overall. But is HS2 the best way to use limited resources to deliver growth?

- The Eddington review – a benchmark review of the UK’s strategic transport investment needs commissioned by the Government in 2006 – suggested that High Speed Rail is not a high priority for Britain. The report said: “Although care should be taken with generalisations, the UK’s economic geography means that the principal task of the UK transport system is not, in comparison to the needs of France or Spain, to put in place very high-speed networks to bring distant cities and regions closer together, in order to enable trading and facilitate economies of scale. Instead, because the UK’s economic activity is in fact densely located in and around urban areas, domestic freight routes and international gateways, the greater task is to deal with the resulting density of transport demand.”

- One of the arguments deployed by HS2 supporters is that if the project does not go ahead the money will be lost for transport. Theory suggests this would not be a problem provided that alternative non-transport investment delivered higher public benefit. In reality, there is a possibility that if HS2 does not go ahead then the money will not be reallocated, whether to alternative transport or non-transport projects, but will instead be ‘kept’ by the Government to reduce the deficit. This uncertainty limits the scope of identifying alternative uses that can be considered and gives some credibility to the argument about ‘money being lost’ if the Government decides to cancel the project.

- Opponents of HS2 often stress that other rail improvements should be given a much higher priority than high-speed rail. These schemes, such as the Northern Hub and the electrification of the Great Western Main Line, were included in the recently published draft determinations of Office of Rail Regulations. This means that they will get funding in 2014-2019 regardless of what happens with HS2 and should not be presented as HS2 alternatives or opportunity costs.

- A different approach is to think of HS2 benefits not in terms of additionality but in terms of avoiding a major loss. Such a loss may occur if the national rail network becomes dysfunctional due to congestion. Such a doomsday scenario appears unlikely, but its effect on the national economy would be considerable. If HS2 is the best way to avoid it, then the calculation of the benefits needs to change again. Thus the argument about inevitable capacity shortages is central to the HS2 debate.

Question 4: Is HS2 the best solution for the capacity shortage?

Until recently the evaluation of HS2 was predominantly focused on the time-saving benefits that the line will deliver. Yet the Transport Minister recently confirmed that the time-saving argument is secondary to the need for additional rail capacity. The looming capacity shortage on the line between two of the country’s largest cities is one of the most prominent arguments in support of HS2.

- The need for “very substantial additional capacity” on the West Coast Main Line (WCML) by 2024 was first identified by the Department of Transport in 2007.
• Lord Adonis, one of the most vocal advocates of HS2, claims that there are only two ways to address the capacity shortage on the WCML – upgrade the existing line or build a new one. “The first option will be extremely disruptive for current services and will only deliver a short term solution. And if we go for the second there is not a huge difference between building a normal line or a High Speed one, so we should go for the best technology available”.

• A number of alternative ways to address the capacity shortage by utilising existing lines have been proposed. The two most feasible direct alternatives are Rail Package 2 (RP2)\(^48\) and 51M.\(^49\) Both propose enhancing the WCML capacity through different combinations of introducing longer trains, replacing first class carriages and minor infrastructure upgrades. Another alternative proposal known as Scenario B also suggests upgrades on East Coast and Midlands Main Lines thus suggesting a broader approach to addressing North-South connectivity.

• A Network Rail report has looked at these alternatives and disregarded all three as RP2 and 51M fail to meet capacity increase requirements and the upgrades across two other lines are deemed inferior to HS2 on value for money.\(^50\)

• A new report by Atkins has proposed and evaluated 5 new alternatives upgrade packages. The report concludes that the proposed alternatives are likely to deliver better value for money than that associated with the HS2. Yet it shows that they will be associated with disruptions equal to up to 29 years of weekend closures.\(^51\) It is however surprising that the disruptions are not factored into the Benefit Cost Ratios. And that while the possible disruptions are widely discussed in the media, the better value for money of the alternatives is hardly mentioned.

• But the argument is not just about the ways to address capacity shortages it is also about whether there are capacity shortages at all. Opponents of HS2 argue that the capacity requirements are exaggerated. They argue that Euston is the least busy station in London and the West Coast Line is only busy between London and Milton Keynes.\(^52\)

• A Parliamentary review on rail demand forecasts has concluded that for the most realistic scenario that assumes a 2 per cent annual demand increase, RP2 and 51M proposals would be sufficient to meet capacity needs. However, it is not clear whether they will meet peak demand as well as demand for some local services and freight.\(^53\)

• Overall the capacity argument is not clear cut. Different interpretations of the demand forecasts are used to support or oppose the HS2 project. To date proponents on either side of the argument have failed to offer a comprehensive study that assess the benefits of HS2 as a means of delivering extra capacity against its alternatives with a consistent methodology.

• One of the underlying reasons for confusion around the ways to address the long term rail capacity problem is the absence of a long term rail network development strategy, which leaves a lot of room for speculation.

Making the most of HS2

While the debate around HS2 continues, work to deliver the scheme is already underway. So alongside debating the benefits and costs we need to be thinking about conditions that need to be in place to guarantee that the benefits from HS2 for cities are maximised. We recommend that the following issues need to be addressed:

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48. Atkins (March 2010) “High Speed 2 Strategic Alternatives Study: Rail Interventions Report” [http://www.51m.co.uk/about-51m/](http://www.51m.co.uk/about-51m/)
49. Network Rail (2011) “Review of Strategic Alternatives to High Speed Two”
• **HS2 should be integrated into local transport networks.** Current plans suggest that HS2 will not use main train termini in the cities it connects. In Birmingham, Curzon station will be used, which is 10 minutes away from Birmingham New Street. In Leeds, the terminal will be a kilometre away from the main station, and in Sheffield the station will be located out of town. This will mean that changing between HS2 and the local transport networks will be more inconvenient, and is likely to have a negative effect on ridership and broader benefits.

• **HS2 stations should be in city centres.** If the stations are located away from the city centre, businesses are unlikely to feel the benefits of improved access to markets, increased density and agglomeration. A report by Sheffield City Council has shown that the benefits of locating the HS2 station in the city centre are likely to outstrip the additional construction costs associated with it.54

• **HS2 fares should be affordable and season ticket schemes should provide significant benefits to commuters.** The fare structure should be planned so that most of the rail users would not choose traditional rail services over HS2 on a cost basis. The HS1 example shows that because of high costs, Kent residents commuting to London still preferred local trains to the high-speed line, even though the timesaving benefits are significant. As a result HS1 has so far failed to meet its ridership targets, which have a knock on effect for broader benefits.

• **The Government should assist Local Authorities in preparing for HS2.** Securing the benefits of HS2 at a city level will require planning ahead. Local authorities need to prepare their local transport systems and make land around the station available for development – but some may lack the expertise or capacity required to do that. Making sure that all of this is in place will require coordination between central and local government.

• **HS2 will not revive struggling places on its own.** Improved transport connections cannot produce economic benefits in cities if other economic fundamentals, such as skills, business premises, housing and other infrastructure, are not in place.

• **HS2 will have different impacts on different places, and there will be losers as well as winners.** A recent freedom of information request revealed that the KPMG study of regional impact of HS2 has identified some of these regions.55 However, the evidence suggests that this is not a zero sum game, and high-speed rail has the potential to have a positive impact on the national economy overall.

The debate surrounding the merits of HS2 has been characterised by claim and counter claim, study and counter study, as to the true nature of the economic benefits and environmental damage it could produce or inflict. The truth is that the kind of long term cost-benefit analyses undertaken for projects of this scale can never be perfect. Those charged with the responsibility of deciding whether to proceed with HS2 must of course weigh the evidence that has been produced, and do everything that they can to keep costs under control throughout. But decisions of this magnitude will ultimately come down to a series of political and economic judgements regarding the best way to support the British economy today and in the future.

Should the decision be taken to proceed, it is vital that far greater attention is given to helping those cities that the new line connects extract maximum economic benefit from it. HS2 can only successfully drive growth if it is integrated with existing local transport networks, stations are accessible from city centres, tickets are affordable for commuters, and critically, if it is not delivered at the expense of other, more incremental local transport improvements.

54. Sheffield City Council, South Yorkshire Passenger Transport Executive (February 2012) ‘Maximising the economic impact of HS2 investment in Sheffield’
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