

Road versus rail: Facts sheet No 7: Capital costs of track

Updated September 2008

During the inquiry into the West Coast Main Line Modernisation Programme the cost rose from £5.7 billion to £13 billion. It now stands at £8.1 billion. At that inquiry it was said that expenditure was to be concentrated on the core 1,000 km of track. Hence, if the £8.1 billion is to be believed then the cost is £8.1 million per km of track.

The main East Coast high-speed rail proposal was to cost £36 billion. There were to be 4 tracks over 495 miles. Hence the unit cost was **£11 million per track-km**. The cheaper alternative costs £8 billion and provides 200 miles of double track. That yields a unit cost of **£12.5 million per track-km**. (Source is the SRA).

Alternatively, consider the cost of Railtrack's original modernisation programme. It ranged from £50 billion to £70 billion (at decade old prices) excluding today's high-speed line proposals. Probably the expenditure was concentrated on not more than one quarter of the track length. At any rate during the Inquiry into the West Coast Main Line Modernisation Programme Railtrack said the costs were concentrated on only 1,000 km of the 2,800 km of track. On that basis the cost of the national programme had the range £(6.25-8.7) million per track-km.

In contrast to that the Independent of 17th February 1999 reported a Treasury study which estimated the replacement cost of the M1 as £2.1 billion for all works and land, or £2.5 billion at 2007 prices. The lane length, assuming 6 lanes all the way from the M25 to Leeds, is 1800 km. Hence the cost is £1.5 million per lane-km.

Alternatively consider the Highway Agency's estimate for a dual 3-lane motorway complete with hard shoulder of £25 million per mile. That included a 45% optimism bias and VAT. Stripping those out yields £1.18 million per lane-km. If hard shoulders and central reserves are included as potential lanes then unit cost per lane falls to £0.8 billion per km. Those costs include land, 12%, earth works, 20% and structures, 45%.

Against that background new motorway construction appears to be 6-7 times less costly than mending and modernising the West Coast Main Line, 10 times less costly than the East Coast High Speed line, and 5 to 7 times less than the somewhat speculative estimate of the cost per track-km of Railtrack's original network-wide rail modernisation programme.

Furthermore the motorway and trunk road network is used 2.5 to 3 times as intensively as is the national rail network despite the latter having the advantage of serving the hearts of our towns and cities. That widens the cost advantage of road by a factor in the range 12.5 to 30.

Some readers may object to the stripping out of optimism bias from the Highway Agency's estimate of costs. We defend that on the grounds that the high optimism bias is unreasonable in view of the well established costs and procedures for building roads. However, even if the bias is added back to the cost of motorway construction the cost advantage of road would remain overwhelming.

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