

AN ECONOMIC ANALYSIS OF THE WESTERN RAIL CORRIDOR

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Kevin Pilkington examines the economic case for funding the development of the Western Rail Corridor. Externalities, cost-benefit analysis and the alternatives are all considered before reaching the verdict that three out of four sections of this project do not justify investment while one section deserves further analysis.

Introduction

The Government's ten year transport investment plan, entitled Transport 21, was announced in November 2005. Among the projects included for funding was a stretch of railway from Ennis, Co. Clare to Claremorris, Co. Mayo. This is part of what has become known as the Western Rail Corridor (WRC). Incredibly, the Transport 21 plan amounts to little more than lines on a map, and it has proven exceedingly difficult to get concrete information on the costs and benefits of the various projects in the plan, including the partial WRC re-opening (Irish Times, 2006). This essay will examine the economic case for the restoration of the WRC, focusing on the literature available on the project itself and Irish railways more generally. Adjuncts of the WRC project, such as direct Galway-Limerick-Cork rail services will also be examined. Finally, potential alternatives to the WRC (i.e. bus services) will be assessed.

Background

The WRC is a 114 mile, single-line track from Ennis to Collooney, Co. Sligo (McCann *et al*, 2005). It links the National Spatial Strategy (NSS) 'gateways' of Sligo, Galway and Limerick as well as the 'hubs' of Ennis, Tuam, Castlebar and Ballina (West-on-Track, 2004). The line has been closed to passenger traffic since 1976 and freight traffic since 2001. Since the cessation of passenger services on the line, there has been a consistent effort by local lobby groups and campaigners to have the WRC re-opened. The primary arguments put forward in support of the WRC are "balanced regional development" (City and County Development Boards, 2001: 3) and

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the potential for commuting by rail into Galway, Sligo, Ennis and Limerick (West-on-Track, 2004). In economic terms, it is difficult to quantify the concept of 'balanced regional development'. However, economics does have the tools necessary for examining the 'spillover effects' (externalities) that the use of railways can confer on society. These effects can include accident, time, congestion and road infrastructural costs that arise in the absence of rail services (Barrett, 1982).

Balanced Regional Development

The concept of balanced regional development is one of the central elements of the arguments in favor of the WRC. The perception that the East is receiving a disproportionate amount of public expenditure is emphasized in the statement of the public transport expenditure between 2000-02, spending in the BMW (Border, Midlands and West) region was 51% of what was forecast in the National Development Plan (NDP), while in the South and East region it was 174% of forecast (West-on-Track, 2004). This apparently contradicts the stated aims of the NDP, which "acknowledges the critical need to promote and foster more regional development to offset the disparities evident between the S&E and BMW regions" (Northern, Western, Mid-West and Southern City and County Development Boards, 2001: 3). The subsequent publication of the National Spatial Strategy (NSS) in 2002 emphasised the need for better transport links between the 'hubs' and 'gateways' envisaged in the strategy. A primary argument in favor of reopening the WRC, therefore, appears to be the belief that will result in a more balanced level of development between Dublin and the eastern counties and the West. This is a somewhat weak and vague argument. In the past it has been argued that road links to Dublin are more likely to attract industry (National Economic and Social Council, 1980). The effective dismantling of the NSS through the government's decentralization programme (which ignores the concept of 'hubs' and 'gateways') and the relaxation of rules on one-off house building in rural areas (decreasing the chances of towns reaching a size that would make rail links economical), further weakens the argument that the WRC will fulfill a useful role.

The Rail Problem: Externalities, CBA and Alternatives

One of the most striking elements of the WRC debate is the relative lack of economic analysis concerning the project. This is most obvious in the

McCann Report on the WRC to the Minister for Transport, which omits cost-benefit analysis (or even probable passenger numbers), mainly referring to the potential for regional development. However, this ‘ladybird book’ analysis of the project (Irish Independent, 2005) does make reference to the costing for the WRC in the Strategic Rail Review (SRR) of 2003, which rejected its re-opening. In analysing railways more generally, it is important to understand the reasoning behind rejections such as these, and the problems face more generally in making a net contribution to society. There are a considerable number of problems that Irish railways face. Usage is low compared to other countries in Europe, with only about eight journeys per capita annually (Barrett, 2003). Once suburban journeys are accounted for, this falls to about three journeys per head on inter-city routes (Ibid). This is presumably due to the low population density and small geographical size of the island. The gradual liberalisation of the Irish transport market, exemplified by the vast increase in bus services between Dublin and Galway (Barrett, 2003), will undoubtedly put further pressure on Irish railways. Railways also face significant costs, with a high level of labour required for tasks such as signaling and track maintenance. These high costs in turn lead to considerable problems regarding pricing policy. Costs such as those mentioned above were once regarded as fixed. However, research by Foster and Joy in the 1960s led to a substantial shift in how railway costs are perceived. A distinction can be made between fixed and variable costs (e.g. thresholds at which savings can occur should be identified, such as simplified low-cost signaling), leading to a new approach in railway pricing (Barrett, 1982). Instead of maximising revenue, railways should maximise profit, seeking to bring marginal costs equal to marginal revenue. If this cannot be achieved, “services must be paid for by the government or withdrawn” (Barrett, 1982: 86).

The policy of government subsidy, which is the norm for most passenger railways around the world, in turn raises the question of externalities, the positive spillover effects outlined earlier. These form the main justification for the subsidisation of the railway. The main externalities that the WRC could bring are reduced congestion, environmental benefits and social inclusion (Northern, Western, Mid-West and Southern City and County Development Boards, 2001). These effects are quantified through cost-benefit analysis (CBA). This differs from a company’s financial analysis in that it assigns monetary values to externalities and aims to use the resources of the whole community effectively (Booz Allen Hamilton, 2003). In constructing a CBA, a discount rate (which reduces the monetary value of future costs and benefits back to a common time dimension – usually the base year) must also be determined. This is important as immediate income/benefits are preferable to future income/benefits, and there is an

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opportunity cost attached to capital investment (Booz, Allen Hamilton, 2003). The Department of Finance uses a 5% discount rate when evaluating public sector transport projects. Changing the discount rate or other factors can have a considerable impact on the benefit/cost ratios of a proposed project, a process known as sensitivity analysis. This is an important element of CBA, given that there can be considerable uncertainty about the various parameters included, such as patronage, economic growth and running costs. There has been criticism of some values in the SRR, which in turn were used to construct CBAs of various rail projects, including the WRC. An example of this is the valuation of non-working time at €6.53. Given the fact that the valuation for this is generally 25 per cent of earnings, the SRR “gives annual earnings of €60,000 per train passenger at 2002 prices, or twice the national average” (Barrett, 2003: 16). This in turn calls into question the benefit/cost ratio for the WRC, given as 0.88 from Sligo to Cork (Booz Allen Hamilton, 2003). An even more extreme example can be found in the West-on-Track publication on the WRC. It gives a valuation of €20 per hour for congestion per capita for congestion in Galway City, concluding that it costs the city €93.6m per annum (West-on-Track, 2004). This is utterly bogus economics, vastly inflating the value of both working and non-working time. While there is congestion in Galway, it is nowhere near as bad as portrayed in the West-on-Track report. Alternatives to alleviate congestion such as Quality Bus Corridors are omitted.

Incorrect evaluations in the SRR further weaken the case for the WRC. The other arguments for the WRC in terms of positive externalities must also be called into question. The social equality argument that railways can serve as a means of transport for lower income groups is flawed on three grounds. Firstly, those without cars require local stopping services, which negate one of the railways main advantages, namely its speed. Secondly, it is argued that buses would be both cheaper and more cost effective at providing services, due to their flexibility. In fact “though speeds may be higher by train, actual origin-to-destination journey times are often lower by bus” (National Economic and Social Council, 1980:49). Thirdly, it is a fallacy that rail, as a form of public transport, aids the poor and helps redistribute income. Expenditure on train fares rises with income in Ireland (National Economic and Social Council, 1980), as well as with income as a percentage of total household expenditure. Bus subsidies are viewed as being slightly more effective as a means of redistributing income (Ibid.). The potential for environmental benefits is also limited, given the overall dominance of road transport. As well as this, the WRC runs through a largely rural area, where the air pollution costs are lower (Barrett, 1982), perhaps due to the low population density. Many other negative

environmental externalities, such as H.G.V.s passing through town centres are being mitigated by the building of new motorways and by-passes.

Freight and the WRC

The potential for using the railways as a means of transporting freight is a recurring theme among advocates of the WRC, illustrated in statements such as: “We believe that freight has a vital contribution to make to the future success of the WRC” (West-on-Track, 2004: 23) and the belief that a reopened WRC will “promote efficient and environmentally sustainable freight transport” (Northern, Western, Mid-West and Southern City and County Development Boards, 2001: 13). These arguments fly in the face of evidence that rail freight is in decline in Ireland, and has been for many years. As far back as 1980, it was noted that “recent economic trends in Ireland do not appear to have favoured rail freight” (McKinsey, 1980: 20). This situation has continued to worsen in the intervening decades, with the railway share of total freight now standing at around 4 percent, down from 10 percent in 1980 (Barrett, 2003). The low level of rail freight by international standards is perhaps unsurprising, given the scarcity of products that are best suited to transport by rail (such as steel or minerals), the highly competitive road haulage market, and the relatively short distances that Irish rail freight travels by international standards (McKinsey, 1980). The SRR recommends that government should calculate the net societal gains from rail freight and then identify a means of support, such as subvention or capital grants (Booz, Allen, Hamilton, 2003). As seen earlier, the negative externalities from road freight (e.g. noise and pollution) are being mitigated through new road schemes. Other externalities such as emissions can be negated through tighter regulations. Ultimately, if government is concerned about the negative societal impact of road freight, it can recoup the social cost through a Pigovian tax.

Rail freight is, in almost every area of haulage, not suited to Ireland, given our services-led economy and small geographical size. In freight markets where it can compete, Iarnród Éireann should concentrate traffic where marginal revenue equals marginal cost. This is most likely to be bulk point-to-point traffic such as Tara Mines where freight does not have to be unloaded onto lorries for further distribution. The WRC is not needed for the passage of freight from the West. Functioning rail lines exist in Clare, Galway, Mayo and Sligo, and have existing links to Dublin and Waterford ports. An example of this can be seen in the recent decision of Norfolk Line to run a liner (container) train between Ballina and Waterford (Western People, 2006). The view that carrying freight on the WRC will free up rail

capacity in Dublin (McCann *et al*, 2005) is nonsensical, given that most freight movements take place at night or at off-peak times. Perhaps the most damning indictment of the freight argument in the context of the WRC is that the McCann Report mentions the potentially substantial unmet rail freight demand, yet is unable to name one manufacturer that would avail of freight services on the WRC.

Conclusion/Recommendations

As has been shown, most of the arguments for the WRC do not stand up to any rational economic analysis. If fully reopened between Sligo and Limerick, and under the timetable proposed by West-on-Track of 3 services a day (West-on-Track, 2004), the line would be a white elephant, requiring a subvention of €35.3m annually (Barrett, 2003), not paying its way through positive externalities and would be basically comparable to the branch line between Limerick Junction and Rosslare, effectively recommended for closure by the SRR (Booz Allen Hamilton, 2003).

However, the most interesting feature of the McCann Report is the division of the WRC into four sections, which allows analysis of which sections of the WRC might be viable. The section between Claremorris and Collooney (an area of low population) can be instantly discounted, with capital costs of €197.4m, perhaps a conservative estimate given the presence of numerous level crossings, “two of which alone would cost €24m” (McCann *et al*, 2005:6). Indeed, the McCann Report does effectively dismiss this section, except on the grounds of “balanced regional development” (McCann *et al*, 11), which has been shown to be a very weak argument. The sections between Athenry-Tuam and Tuam-Claremorris are recommended for restoration by McCann (2005:6), and have a combined capital cost of €93.6m. Again, there is little real justification for its restoration. There is a small potential for commuting from Tuam to Galway, but given Tuam’s size (c. 7,000), buses would undoubtedly be a better alternative, especially given the lack of congestion.

The rail line between Ennis and Athenry is the only section of the WRC that merits real attention. It has a capital cost of €74.7m (McCann, 2005:6), and provides a link between the second, third and fourth-largest cities in Ireland. There is a considerable discrepancy here with the figures for a Galway-Cork project in the SRR, costing €290m (Booz Allen Hamilton, 2003). This makes little sense, given that the line from Ennis to Cork is in good condition. This is also noted by Barrett, who writes that the line could be opened with little investment (Barrett, 2003). Ultimately, the

line between Ennis and Athenry does require renewal, for train times to be at all competitive.

In an increasingly contestable transport market, a Galway-Cork service would have to emphasise its superiority over cars and buses through factors such as speed, comfort and frequency, allowing it to charge a premium (Barrett, 2003). The experience of other inter-city services however suggests that marginal revenue would be unable to cover marginal costs. The level of positive spillover effects (justifying subvention) then comes into question. This will also be relevant to the provision of commuter services, such as those announced for Athenry-Oranmore-Galway in Transport 21. The potential for commuting from Ennis (population 25,000) to Galway exists and the introduction of a greatly enhanced service between Ennis and Limerick in 2003 increased passenger numbers from approximately 40,000 (estimate from Ennis station master) to 130,000 (McCann, 2005:3) and introduced a commuter service. Externalities such as time savings, reduced road infrastructural costs and reduced congestion may or may not justify the reopening of Ennis-Athenry. I would recommend that a full-scale CBA be done of this section of the WRC, with a more rigorous analysis than the SRR, in such areas as the proper evaluation of shadow prices (e.g. the valuation of time) and the presence of alternatives, such as buses and road improvements. The reopening of the WRC as far as Claremorris in Transport 21 is little more than a political gesture, although the lack of economic analysis (in the public domain at least) is a common theme throughout that particular plan. Increased bus services in the West along the WRC route (certainly north of Athenry) would be more cost-effective and would arguably deliver greater time-savings, given the maximum speed on the WRC would be 60-70mph (Northern, Western, Mid-West and Southern City and County Development Boards, 2001) and also given the fact that buses can provide a more flexible service.

Bibliography

Barrett, S. 1982. *Transport Policy in Ireland*. Dublin: Irish Management Institute

Barrett, S. 2003. 'The Strategic Rail Review: a Critique'. *ESRI Quarterly Economic Commentary* 2003:3

Booz Allen Hamilton. 2003. *Strategic Rail Review: Report to the Department of Transport*. Dublin: Booz Allen Hamilton

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Curran, Richard. 'Ladybird' WRC Report a one-track journey into madness'. *Irish Independent* 16/05/05

McCann, Pat *et al.* 2005. *Report to the Minister for Transport on the Western Rail Corridor*. Viewed at www.transport.ie accessed on 21/03/06

McDonald, F. 'Department refuses to release data on metro'. *Irish Times* 10/01/06

McKinsey and Co. Inc. 1980. *The Transport Challenge: The Opportunity in the 1980s*. Dublin: Stationery Office

National Economic and Social Council. 1980. *Transport Policy*. Dublin: Stationery Office

Northern, Western, Mid-West and Southern City and County Development Boards. 2001. *Western Strategic Corridor – Rail Link Project*. Viewed at www.westontrack.com accessed on 21/03/06

West-on-Track. 2004. *Introduction to the WRC*. Viewed at www.westontrack.com accessed on 21/03/06

Western People 'Ballina freight movement to resume within two months'. *Western People* 08/02/06

Western Dedicated Freight Corridor (DFC) is a broad gauge corridor under construction that will connect Delhi and Mumbai, the national and business capitals of India. In October 2006, the Indian Government established a dedicated body, the Dedicated Freight Corridor Corporation of India (DFCCIL), to carry out the project. The western DFC will separate freight and passenger traffic to increase the speed of freight movement. The axle load of the track will be 32.5t compared to the existing 25t axle load used on Indian rail tracks. Construction on a 320km stretch of the project began in January 2016. It will be completed in two phases, with the first phase constructing a 186km-long segment, and the second building a 134km-long stretch between Sachin and Vadodara. The Western Rail Corridor encompasses a series of railways built by various companies throughout the late 19th century, forming a south-north line from Limerick to Sligo. Towns along the WRC include Ennis, Gort, Athenry, Tuam and Claremorris. The reopening of the Western Rail Corridor has raised debate in Ireland, with opinion divided on the benefits of the scheme. Arguments in favour of reopening the corridor A cost-benefit analysis report prepared by Goodbody Economic Consultants for the Department of Transport in 2006 stated that passenger numbers on the soon to be opened Ennis-Athenry section of the WRC would be in the order of 200,000, requiring an annual subvention of €2.4m, with a negative Net Present Value of -€137m.