

THE IRISH STRATEGIC RAIL REVIEW: A CRITIQUE

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1. Introduction

The *Strategic Rail Review* (SRR) undertaken for the Irish Department of Transport by Booz Allen Hamilton (2003) seeks to evaluate the long-term rail requirements from a national perspective in the light of emerging spatial planning and regional development trends and policies. In the next stage it is expected that the Government will establish a strategic policy framework for the future development of the rail passenger and rail freight sectors in Ireland. In a sector where previous reviews have found policy to be producer rather than consumer dominated and with a propensity for regulatory capture by the producer interest, the publication of the SRR is an important contribution to the policy-making process.

This paper sets out to provide a critique of the findings in the SRR and to highlight the limitations in the cost-benefit analysis underpinning the investment proposals. Section 2 looks at the previous reviews on the Irish rail system, while the main findings of the SRR along with a critique are set out in Section 3. An assessment of the investment plan contained within the SRR is set out in Section 4. Section 5 considers some of the alternative scenarios on the future funding of the Irish rail system not considered in the SRR, while Section 6 looks at the critical issue of the shadow prices used in project appraisal. Section 7 draws some conclusions and policy recommendations.

2. Previous Irish Rail Reviews

The SRR publishes a set of key conclusions of previous reviews including – Milne, (1948), Beddy (1957), McKinsey (1971 and 1980), and Attley *et al.* (2001). Remarkably the current SRR is silent on reviews of the Irish transport policy problem not commissioned by the Department of Transport and its predecessors. Missing from the SRR's summary of previous research on Irish transport are the reports of the National Prices Commission (1972, 1973); the National Economic and Social Council (1980); Barrett (1982, 1991);

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the Oireachtas Committee on State Sponsored Bodies (1995); the Competition Authority (2001); and the OECD (2001).

This overlooked research has a number of themes which are of value in assessing the Irish railway and wider transport problems such as: the regulatory capture of the Department of Transport by railway companies; the inefficiency of monopoly, the weaknesses in many of the traditional arguments advanced by the pro-railway lobby; the low productivity problem of the State owned transport company Coras Iompar Éireann¹ (CIE); the weak investment appraisal both in the Department of Transport and in CIE; the lack of relationship between the State subsidy provided to CIE and any measures of the spill-over benefits from the company's operations; the lack of a list of loss-making routes and any mechanism to ensure least-cost operation; and a general refusal to acknowledge any possible gains for consumers, taxpayers, and new market entrants from a more competitive and transparent transport policy.

The Oireachtas Committee (1995) pointed out the problem of engineer dominance in CIE with 59 engineers and only 16 persons with business or commerce qualifications at senior management level, while Attley (2001) developed this point further – *The history of Iarnród Éireann has produced a managerial culture that is strongly male-dominated and engineering oriented and one that still embodies many of the weaknesses of a non-commercial monopoly, with an ethos of administration rather than of management.*

The unwillingness to explore any implication for Irish railways of the massive gains to the Irish economy as a whole from free markets, or indeed the sectors of transport which have been deregulated, is a serious flaw in the SRR. Apart from a reference to the problem posed for the railways by the huge success of road freight deregulation, the SRR is silent on the massive success in Ireland of airline deregulation in 1986 and taxi deregulation in 2000.

In the taxi deregulation case, the Department of Transport's policy was to control new market entry with the emphasis on protecting existing licence holders. The policy was overturned by the High Court on the basis of the rights of persons to enter a business for which they had the requisite training and the rights of the public to the services of these producers. Reviewing this judgement and its impact on the bus sector the Competition Authority (2001) stated that *In the light of a recent court decision, it may actually be questionable whether quantitative restrictions on licensing such as those provided for by the practice of the Minister under the 1932 Act are constitutional or compatible with EC Treaty rules.*

It appears unwise for the Department of Transport to plan for railway investment to 2022 without taking into account that it may face a third imposition of deregulation upon it from either the courts or Parliament. Transport policy in Ireland has to face such a reality and the present SRR is poorer for neglecting a potentially rich vein of research in its narrow presentation of what it describes as

¹ CIE is the State holding company for transport providers that includes Iarnród Éireann for rail services with bus services provided by Bus Éireann and Dublin Bus.

3. Critique on the Strategic Rail Review Findings

the *key conclusions of previous reviews*. The Competition Authority (2001) found that ... *the Irish transport sector has been fraught with instances of regulatory interventions that were not always in the public interest*. Projecting such interventions forward is not an appropriate investment strategy.

The main findings of the SRR are critiqued in this section. However, it is first pertinent to indicate the key stylised facts about the Irish rail system. The service carried 34 million passengers in 2001 comprising 21 million on the Dublin Area Rapid Transit (DART) suburban system, 11 million in mainline rail and 2.5 million on outer suburban routes. Bus competition is rigidly controlled in the past but is likely to increase. Rail fares have fallen far short of costs. The mainline rail deficit rose from €34 million in 1998 to €59 million in 2001. The DART deficit rose from €9.9 million in 1999 to €26.1 million in 2001. Infrastructure expenditure rose from €85 million in 1998 to €219 million in 2001. Rail staff productivity has fallen as have freight volumes. The Independent Estimates Review Committee (2003) warned that: ... *the trading position of the CIE group is serious and will deteriorate unless appropriate action is taken*.

There are seven findings within the SRR report that are considered important in this critique:

- (a) Relationship between the State and the Railway – that there is currently no well-defined and effective relationship between the State and the railway;
- (b) The Investment Record – that the significant investment of the recent past will not be sufficient to stabilise the railway in a steady state;
- (c) The Increasing Railway Subvention – that the annual subvention of the railway has been increasing in recent years;
- (d) The Consumer Interest in Railways – while there is significant public interest in the railway but not necessarily a high level of satisfaction with the delivery of railway services;
- (e) The High Potential Demand – there is a significant contestable demand which can significantly add to rail's market share in the public transport;
- (f) Capital Investment Alone Will Not Deliver – that capital investment alone will not deliver the vision for the railway. But there must also be service delivery, quality, productivity gains and a lower cost to the State per passenger journey/passenger kilometre; and
- (g) Declining Role Of Freight – that rail freight is in a critical state of decline.

(a) RELATIONSHIP BETWEEN STATE AND RAILWAY

The relationship between the State and the railway is well defined in law and is seriously disadvantageous to competing forms of transport and therefore is open to question from the perspective of society as a whole. The policy combines restrictions on competition,

dating from 1932, with exemption from any bankruptcy constraint by access to State subventions and investment grants since 1958. These funds are not subject to any requirement that measured social benefits should exceed the costs and are not available to competing transport operators.

The 1932 Transport Act indicates that the Government, in order to protect the railways, strongly opposes independent bus operators entering the market. The Competition Authority (2001) states that this policy may not be sustainable in the aftermath of the taxi deregulation decision by the High Court in 2000. Nonetheless, the Nestor Bus case² in 2001 suggested regulatory capture by CIE of the Department of Transport to the considerable detriment of independent bus competitors.

The second instrument of public policy towards the railways is the financing of the railway deficit by the Government without any measure of corresponding social benefits. No other operator is eligible for these subsidies. There is strong support for railways to the detriment of an independent bus sector. The policy is quite clear but obviously inefficient in economic terms.

(b) THE INVESTMENT RECORD

The finding in the SRR that ... *the significant investment of the recent past will not be sufficient to stabilise the railway in a steady state is not accompanied by project analysis. If the first billion euro of rail investment has not been sufficient to stabilise the railway finances then some analysis of this problem should have been included in the SRR. Several examples suggest themselves. A rail safety investment programme costing €648 million over the years 1999-2003 is to be complemented by a next generation rail safety programme from 2004 to 2008. The SRR indicates that the scale and cost of this programme will be developed and quantified in 2003, but it is likely that it will be in excess of €500 million. The rail safety programme costing almost €1.2 billion over ten years should have been analysed in terms of accident cost savings, and compared with other safety programmes.*

Data from the Department of Health and Children indicate that railway fatalities in the years before the safety programme were as low as 1 and never above 5 and were 5 in 2000, the latest year for which data are available. The SRR states that there were eight deaths on the railways between 1991 and 2001. The expenditure of €1.2 billion to reduce railway fatalities from 8 per decade, based on the railway's own data, assumes a value of life of €150 million per fatality prevented if the programme were 100 per cent successful. The actual shadow price is therefore 109 times greater than the €1.357 million stated in the SRR's Appendix H to be the shadow price. The failure of the first 40 per cent of the five year programme of rail safety to achieve any reduction in fatalities in 2000, according to the Department of Health and Children's data, covers a period in

² Nestor Bus, a private bus operator challenged CIE/Bus Éireann's monopoly of the State's bus services. In an agreed settlement Nestor received extra licences.

which some €259 million of the €648 million safety programme was spent. The proposed €500 million rail safety programme for the years 2004 to 2008 should be reassessed.³

The controversial signalling programme extended mainline signalling to lightly-used lines was found by an Oireachtas Committee to have had a cost overrun from €17.8 million to €63.5 million. The *Abbeylara* case legal precedent⁴ precluded the Oireachtas from completing its review. The signalling programme should have been analysed at both the planned and outturn prices in the present SRR given the serious concerns voiced by the Oireachtas Committee. Instead the controversial project was bundled with other projects in a scenario approach.

An expensive programme of raising the heights of bridges over the railway in order to accommodate higher freight wagons on the railway was followed by a severe contraction of freight volumes even in a booming economy. Analyses of the route finances of the Irish railway system indicate that the highest losses are incurred on the lines in which the most investment has been made, a problem highlighted by Foster and Joy in Britain in the 1960s.⁵ There has been a minimal increase in train frequency on the Maynooth line following the doubling of the track whereas the cost factor for double track is 1.7 compared to single track. A new line bypassing Kilkenny built to facilitate freight traffic to Waterford port is little used. The Navan-Kingscourt line has lost its single industrial customer.

The need for an economics rather than engineering focus on investment in Irish railways requires that there be independent published project appraisal. In engineer-dominated organisations the emphasis is on projects rather than project appraisal because the incomes of those concerned are linked to carrying out the projects rather than the impact of the projects on the organisation's finances.

The combination of weak investment appraisal and heavy investment requirements is examined in the SRR in relation to proposed new routes. Most of these proposals are rejected such as railway lines from Derry to Letterkenny with a benefit/cost ratio of 0.35; Dublin to Navan (0.44); Sligo to Cork (0.88); Athlone to Mullingar (0.43); and Navan to Drogheda (0.70). The only additional line with a positive benefit/cost ratio is a reinstated spur from Middleton to the Cobh branch with commuter services extending also to Blarney on the Cork-Dublin route with a benefit/cost ratio of 1.11.

³ While the experience elsewhere indicates that serious infrequent large accidents may influence policy more than frequent individual accidents this does not justify the bias in Irish safety spending in favour of railways compared to other safety spending.

⁴ In the *Abbeylara* case members of the Garda Síochána (Irish police force) secured a court ruling that the Oireachtas could not investigate matters where individuals might be found culpable.

⁵ Foster and Joy (1967) argue that railway costs could be reduced by three-quarters by a low cost track over the 11,000 mile British network. The remaining three-quarters of costs should be allocated to the traffic that require them.

The SRR's "Recommended Investment Strategy" for a total capital expenditure of €8.5 billion over twenty years is therefore concentrated on the existing network. The failure of this network to either generate a commercial return on investment or reduce the subvention required therefore merits more emphasis than accorded to it in the SRR.

(c) THE INCREASING RAILWAY SUBVENTION

Mainline rail revenues are estimated to have increased by €5 million between 1998 and 2001 from €110 to €115 million. In the same period expenditure increased by €24 million from €144 to €168 million. The revenues of the DART increased by €13 million from €20 to €33 million but expenditure on the service increased by €39 million from €19 to €58 million. The cost of railway infrastructure rose from €85 million in 1998 to €219 million in 2002.

The economic analysis of the subvention would presumably be based on a market failure welfare model. Spill over benefits from rail travel would be seen to benefit those not participating in rail travel. These gains would be compared with the cost to society as a whole from rail travel funded mostly by taxpayers to cover the difference between the cost of production and the fares and charges paid by railway users. Thus the spillover benefits and spillover costs of the railways could be compared. The subvention to Irish railways is not based on such a welfare model but rather on the losses incurred on the operation of the railways. Since railway losses could be caused by a wide range of both producer and consumer factors, to equate them with social benefits is facile. Public policy has not quantified the social benefits from railways or related the subsidy to cost-effectiveness in generating social benefits.

(d) CONSUMER INTEREST IN RAILWAYS

The SRR does not emphasise sufficiently the importance of the consumer. The goal of all production is to satisfy consumer wants and the problem for Irish railways is that consumers have not been willing to cover even half the cost of producing railway services. Some of the projects examined in the SRR have even lower revenue/cost ratios. For example, the Sligo-Cork line would have revenues of €13.4 million but would incur capital costs of €572 million and an annual operating cost of €35.3 million in excess of its revenues.

A consumer model of the railway would presumably emphasise speed, comfort, on board food and drink service, ability to work on board and train travel being less tiring than driving a car. The model would then seek to recover the extra cost of providing train services over competing modes from the consumers. The exclusion principle operates. Railway operators can recoup the extra costs of the railway product over competing modes by charging a premium.

The current case where the railway is a premium product but that users should not bear the cost and that competing modes should be restricted is unsound. There is no market failure preventing railway companies from charging their customers.

The reality of railway travel may be somewhat short of the above model of a superior product. On speed, for example, the SRR notes that in summer of 2002 on only five of eighteen routes surveyed was rail faster than car. With an estimated 48 minutes saving by train compared to car, the Dublin-Cork route offers most time savings benefits. However, the Summer 2003 Aer Rianta timetable shows that three airlines offer 12 round trips per day between Dublin and Cork; 5 between Dublin and Galway; 4 between Dublin and Kerry; and 4 between Dublin and Shannon. In addition, there are also flights between Derry, Donegal, Sligo, Knock and Dublin. The recent growth of flight frequency between Dublin and Cork and Dublin and Galway has been rapid and these services have a significant speed advantage over Irish rail services. Rail has frequently failed to deliver promised time savings, notably between Dublin and Belfast in which the EU, UK and Irish authorities have invested heavily. The SRR notes that ... *current intercity (rail) journey times are, in many cases, longer than the journey times achieved more than a decade ago.*

On comfort, the railway reality may also fall far short of the marketing model. Attley *et al.* (2001) reported that Iarnród Éireann's policy is expressly that anyone who turns up at peak times will be accommodated on a train, ... *the consequences include overcrowding and all its associated impacts on customer service, company image etc..* That report recommended a system of pre-booking. The case that railway offers a superior form of comfortable transport requires that this Attley *et al.* booking recommendation be implemented. The reluctance to do so is apparently based on the belief that a booking system when fully booked would transfer passengers to an independent bus sector and that the selling of rail tickets without seat allocation is better for the railway than any loss of passengers to the independent bus sector. Without the guarantee of a seat it is difficult to see how railways can market greater comfort or increase yields in order to reduce the widening gap between fare revenues and escalating costs.

(e) THE HIGH POTENTIAL FOR DEMAND

A *Contestable Market* is one in which potential new entrants discipline incumbents, barriers to entry and exit are removed, price is equal to long-run marginal cost and the industry comprises the optimum number of firms. (Baumol, 1982). The Irish internal transport market for passengers has none of the characteristics of a contestable market. The Department of Transport both owns CIE and regulates the market strongly to the detriment of other operators, as illustrated in the High Court transcript of the Nestor Bus case cited earlier. CIE was created by legislation to remove 1,561 previously independent companies from road transport. CIE alone is eligible for Government subvention and investment grants.

It is quite plausible that a contestable market, far from increasing rail's market share in public transport, might reduce it significantly. This scenario is supported by a number of deregulation case studies – the Dublin-Galway bus route, the Dublin Airport coach service and the internal air services.

The Dublin-Galway route was served by one bus a day in each direction, via Mullingar (which is not the most direct route), in 1980 under monopoly. By the summer of 2001, following the development of the route by independent operators, opposed by both CIE and the regulating department, there were 21 buses a day, on the direct route, in each direction. The operators were Bus Éireann, owned by CIE, Nestors, Burkes, and so-called auxiliaries, or independents not licensed by the Department of Transport but subcontracted by CIE. The SRR examines the expenditure of €238 million on the Dublin-Galway railway line by 2002 in order to “Stay in the Game” and a further €160 million in a “Going for Growth” scenario. However, the SRR does not deal with the optimum market share of traffic on this route between the rail, bus and air modes.

The Oireachtas Committee on Commercial State-Sponsored Bodies (1995) found that day return fares between Dublin and Galway were significantly higher on railways (£12 return) than on Bus Éireann (£9) and that the lowest fare was charged by the unsubsidised private sector at £5 return. Table 1 shows the Dublin-Galway fares for both day and extended return trips. The railways are subsidised by more than passenger receipts. Bus Éireann is subsidised but is not required to show the allocation of subsidy by route and claims that it does not incur losses on its intercity services such as Dublin-Galway. The cost to users and taxpayers combined of trips by Irish Rail and Bus Éireann, therefore, exceeds the fares charged but there is no taxpayer subsidy to the private bus companies on the route. The Oireachtas Committee estimated that rail receipts in Ireland in 1992 were only 52 per cent of operating costs so that the costs of rail journeys are twice the fares shown in Table 1. Bus Éireann received a subsidy of £4 million in 1993 in addition to receipts of £92 million and incurred a deficit of £0.6 million. On average, therefore, Bus Éireann costs are higher than its fares. During the years 1990-99 Bus Éireann received subsidies of £43.4 million.

Table 1: Train, Bus Éireann and Independent Bus Fares, Dublin-Galway, 1993 (£)

	Day Return	Extended Return
Rail	12	24
Bus Éireann	9	10
Private Bus	5	8

Source: Oireachtas Committee on Commercial State-Sponsored Bodies, Report on Iarnród Éireann, Table 4.2.

The ISOTOPE Report (1997), presented to the Lisbon EU Summit in 2000, contrasted bus costs under the traditional EU closed market system, the competitive tendering system in Member States such as Denmark, and deregulation, as in the UK. The comparative costs are shown in Table 2. The data favour the competitive model.

Table 2: Comparative Bus Costs per Vehicle Km in 1996 (€)

	Cost per vehicle km	Index
Closed Markets	3.02	100
Controlled Markets	2.26	75
Deregulated Markets	1.44	47

Source: ISOTOPE Report, 1997, Commission of the European Communities, COM (2000/0212).

The SRR examines the subsidy to some internal air services. These services are to be subsidised at a cost of €56 million for three years from July 2002. In 2001, the SRR states that the domestic air services carried 1.67 million passengers or 16 per cent of the intercity rail passenger numbers. In 2001, the SRR notes that State grants to the railways cost €169 million, of which €26 million represented the loss on DART. Allocating the remainder of the railway subsidy to mainline rail gives a grant of €143 million in 2001.⁶ The subsidy cost per mainline rail passenger at €143 million for 10.83 million passengers in 2001 is therefore €13.20. The subsidy cost per air passenger based on 1.67 million passengers and a three year subsidy of €56 million is €11.18 per passenger. The rail subsidy per passenger is therefore 18 per cent higher than the air subsidy. The air scheme is scheduled to run until 2005 at present prices. By then it is likely that the railway subsidy will have increased further and its competitiveness deficit compared to the air subsidy will have widened further.

The SRR is innovative in providing the data for the first time in a single document for comparing air and rail subsidy levels. If the air subsidy is held over the three years and the rail deficit continues to increase, the value for money margin in favour of air will be greater. In contrast to the railways the financial positions of the Irish airlines, Ryanair, Aer Lingus, Aer Arann, and Cityjet, have improved in recent years.

In summary, the available data on the relative costs of Irish railways, airlines and buses indicate that in a contestable market, railways will lose market share due to the lower costs of independent bus companies and the higher speed and lower subsidy requirements of Irish airlines.

In relation to urban transport, the SRR should have also included contestable alternatives such as the success of the Stillorgan Quality Bus Corridor and the independent airport bus service which carries over 1 million passengers in a startup operation without subsidy or capital grant. Keegan (2003) contrasts the success of the bus sector in increasing its market share of the Dublin morning peak from 19 per cent to 23 per cent between 1997 and 2001, while the rail share declined from 9 per cent to 7 per cent.

(f) CAPITAL INVESTMENT ALONE WILL NOT DELIVER

⁶ Even the DART losses could have been classified as mainline since all of the DART track is used for mainline rail with the exception of the short Howth branch.

The service problem of Irish Rail combines both uncertainty whether seating will be available and unreliable on-board services. The failure to implement the Attley recommendation to combine ticket sales with seat allocation contrasts with competing modes such as air where seating is guaranteed, and the bus sector which by subcontracting gives all passengers seats on long distance services at times of peak demand. The Oireachtas Joint Committee (1995) found that the quality of Irish Rail's catering ... *diverges greatly, it is either extremely high or low, but rarely in between.* The SRR notes that railway catering lost €0.86 million in 2001 and 2002.

The railway's losses on catering may indicate an unsatisfactory service, high costs and/or a loss of consumer interest in on-board catering. The latter has been a feature of intra-European aviation in recent years with the growth of no-frills airlines and the reduction of service levels by previously full service airlines. While the future of onboard services on Irish Rail may be problematic because of these factors, the failure to implement the booked seats policy recommended by Attley damages the service image of the railway and makes much more difficult the task of raising passenger yields to a level closer to the higher cost of providing rail services. Rail travel without an assured seat is not likely to be perceived as a quality product.

In addition to service and quality the SRR recommends higher productivity and lower subvention costs as complements to the rail investment plan. The SRR shows a decline in railway passenger productivity between 1996 and 2001 inclusive based on the number of passenger journeys per passenger staff. When the decline in freight tonne kilometres and the increase in staff numbers are added to the decline in passenger productivity there is an overall decline in productivity of 19 per cent, as estimated in Table 3.

Table 3: Irish Railway Productivity, 1996-2001

	1996	2001	Index*
Passenger km (million)	1,295	1,515	117
Freight tonne km(m)	570	516	91
Total traffic units(m)	1,865	2,031	109
Staff	4,387	5,917	135
Traffic units per staff (000)	425	343	81
* 1996=100			

Source: Booz Allen Hamilton, Annex A.

The critical factor in the decline in railway productivity since 1996 was the recruitment of 35 per cent more staff with numbers increasing from 4,387 to 5,917. Irish railways have a tradition of low labour productivity (Barrett, 1991) which was addressed by a reduction in staff from 7,090 in 1987 to 4,387 in 1996. Irish Rail again faces a serious productivity problem which has deteriorated since 1996.

The Attley (2001) report found the company ... *bedevilled by industrial disputes, restrictive practices and inter-union rivalry. ... All parties are to blame for the development of the culture which now prevails; the Shareholder, the Department of Public Enterprise (now Transport), management, trade unions and employees. Nothing short of a complete reversal*

of this destructive culture will be necessary to get the practice of industrial relations in Iarnród Éireann on a sound footing. Attley also stated that ... *the company suffers from a variety of restrictive practices, all of which militate seriously against the achievement of transforming the operations of Iarnród Éireann.* Some of the restrictive practices in operations go to the core of changes that urgently need to be made for the purposes of safety, customer service and efficiency and, in many cases, are inimical to the interests of those who maintain them.

Restrictive practices which are not just 'irritants' but are strategic in nature exist in a number of key areas and relate to fundamentally important issues such as recruitment, training, new technology, new business/services, use of contractors/outsourcing, demarcation and staff mobility. In the course of its work, the SRR Group identified practices other than those specified above which, having gone unchallenged at their inception and since, are now embedded in the system to the detriment of customers, operational efficiency and ultimately of the employees themselves.

Attley recommended a programme of reform as a precondition of further investment. *If IE does not show itself to have the capacity to effectively and efficiently absorb the investment contemplated for IE, then the public's right to good rail transport should not be forfeited.* Without reform, *the future for IE is uncertain, with Shareholder investment being directed to other providers of rail transport, (or other forms of transport), dissatisfied customers, loss of jobs in IE, low staff morale and negative public perception.* The industrial relations climate has not improved in the two years since Attley reported and has deteriorated with the addition of industrial action against the present Minister of Transport proposals to introduce road and rail passenger competition and to allow new market entrants to the bus sector.

(g) FREIGHT IN DECLINE

The SRR shows a decline in rail freight between 1992 and 2001 from 633,267 tonne kilometres to 515,714, a fall of 19 per cent. The volume of output of transportable goods increased two and a half fold in the same period. Average receipts per tonne kilometre were constant in money terms, a fall of one-quarter in real terms. The decline in general freight was 40 per cent in a category which accounted for 44 per cent of the tonnage in 1992. In the period under review, the railways lost the postal services and its major customer in the fertiliser sector ceased trading in 2003. The SRR also notes that the closure of the North Wall freight depot will result in a transfer of some container traffic to direct road services. Barrett (1991) indicates that the rail share of the freight market declined from 22 per cent in 1960, 16 per cent in 1970 and 10 per cent in 1980. The railway share of total freight is estimated to be now 4 per cent.

The SRR states that ... *since the 1980s, substantial changes have taken place in the competitive market for freight distribution in Ireland. The absence of significant new long haul freight tonnage, added to the liberalisation of road vehicle licensing laws and falling distribution charges, has put pressure on existing rail freight rates and tonnages.* This assessment indicates that the rail freight sector does not satisfy the contestability test of the SRR's

4.
The
Recommended
Investment
Plan

finding discussed above. This raises the question whether passenger liberalisation might not have the same result as in the freight sector.

The SRR recommends an investment of €8.5 billion in the Irish railways over the period to 2022 and also examines the cost scenarios as shown in Table 4.

Table 4: Investment Scenarios of Irish Railways to 2022

Scenario	€billion
1. "Do Nothing"	5.4
2. "Staying in the Game"	4.6
3. "Going for Growth-Service Enhancements"	8.8
4. "Going for Growth-New Schemes"	10.8
5. Recommended Strategy	8.5

Source: Booz Allan Hamilton, *op. cit.*, p. 113, p.147; Chapter 6.

The "Do Nothing" scenario ... *involves the railways being unable to accommodate current demand or any underlying demand growth as services become increasingly unattractive and capacity becomes saturated.* The costs of this scenario include extra road traffic, externalities and environmental costs with an estimated present value of €11 billion over twenty years. The State would save €6 billion in railway support, passengers would save €5 billion on rail fares available to spend on other modes of transport or outside the transport sector. The additional primary road maintenance cost would be in excess of €100 million euro over twenty years. The cost benefit analysis parameters used in these estimates are examined below.

The "Staying in the Game" scenario aims to protect rail's current market share. Revenues would amount to €200 million but there would be a €550 million peak funding requirement in the years 2005-2007. SRR view ... *Suburban patronage under Staying in the Game is anticipated to increase by between 50 per cent and 105 per cent while patronage on intercity routes is anticipated to increase by between 69 per cent and 142 per cent.*

The "Going for Growth-Service Enhancements" scenario requires €300 million funding on average with a peak of €1.5 billion in 2016 and generates little increase in revenue until 2018. It involves DART passenger numbers increasing from 21 to 36 million and intercity passenger numbers increasing from 11 to 24 million.

The "Going for Growth-New Schemes" scenario shows no increase in revenue to 2012 and a peak funding requirement of up to €1.6 billion in 2016. The scenario examines ten schemes, eight for new lines and the operation of two existing lines, Limerick-Rosslare and Limerick-Ballybrophy, by railcars.

The "Recommended Investment Strategy" costs €8.5 billion split equally between "Staying in the Game elements" and "Going for Growth Service Enhancements and New Schemes." It is based on the radial routes from Dublin plus improved commuter services in the Cork area. Since the strategy is based on the existing network in

which past investment has not yielded a return, the case for persisting with that network should be analysed

The SRR lacks scenarios such as a Market Alternative, a Steady State Railway Scenario and a Declining Railway Yield Scenario.

(a) THE MARKET ALTERNATIVE SCENARIO

The lack of a “Market Alternative” scenario in the SRR is a major flaw. The successes of airline deregulation in Ireland more than in any other country, taxi deregulation, the Aircoach service, the Dublin-Galway bus service and the implications of the Nestor bus case are not examined. No serious consideration is given in the SRR to the public transport alternatives to the large railway investments proposed. Neglecting alternatives is a major flaw in any cost-benefit study. For example the SRR states that: ... *provision of effective public transport to Navan will be important in creating the investment corridor that will enable Navan to become self-sustaining as envisaged in the Spatial Planning Guidelines.* The SRR neglects the 38 buses a day between Dublin and Navan from 6:20 to 23:11 hours; 25 buses daily to Kells; 18 to Cavan; 7 to Drogheda; 2 to Galway; 3 to Donegal; several services to smaller towns, a four route town service and numerous private operators serving one of the fastest expanding towns in the country. The identification of “effective public transport” with proposed railways to Navan ignores the wide range of services now provided to an extent and frequency not matched by the heavily subsidised rail services proposed in the SRR.

(b) THE STEADY STATE RAILWAY SCENARIO

The basic or “Do Nothing” scenarios in a cost benefit analysis are vitally important. There must be included in the analysis some low cost options with which the extra costs and benefits can be compared. The SRR is deficient in this important aspect. The SRR “Do Nothing” scenario is consigned to a few pages and some footnotes. The “Staying in the Game” scenario involves large increases in activity. There is therefore no scenario in the SRR covering the cost and benefits of the present railway going forward. The problem is illustrated in Figure 4.1 of the SRR entitled “Conceptual Representation of Strategic Options” that indicates an index of performance declining from 100 in 2003 to 40 in 2002 under “Do Nothing”, rising to 150 under “Staying in the Game” and rising to 230 under “Going For Growth”. There is no scenario examining an Index of 100 throughout the timeframe of the SRR. The components of the performance index are stated in a footnote to be patronage, revenues and outputs but the weights are not stated.

Earlier analyses indicated that the revenue-cost ratios for Irish railway lines in which low investment had been made were better than on lines in which heavier investment had been made. The origins of the low cost scenario for railways lie in the work of Foster and Joy (1967) who stated that ... *a very simple signalled single track*

could be provided over the whole of the 11,000 mile route network at a figure which is less than one-quarter of the present total track cost of British Railways. The remaining three-quarters of the total cost are of course accounted for by all those instances where more capacity is required than is available from the basic system mentioned above.

The basic Foster-Joy model should have been estimated for Irish Rail. With mainline rail trips averaging one and a half round trips per year per head of population there is little need for a heavy investment strategy for Irish railways and most of the network is lightly used. An example of the Foster-Joy approach might be the Navan-Kingscourt line which lost its passenger service in the 1930s and was run on a least cost basis until 2002 when its last customer, Gypsum Industries, transferred to road and the line was put on a care and maintenance basis. Any potential customer for this line will have to generate marginal revenues sufficient to cover marginal costs. The existing double track line from Heuston to Connolly stations in Dublin is dismissed as a way of attaining an integrated rail system in Dublin in half a sentence and a footnote. on page 93 of the SRR ... *the existing route between Heuston and Connolly beneath Phoenix Park is on an alignment that offers no real opportunities for beneficial passenger services.* The footnote states that ... *passengers who currently alight at Heuston are unlikely to be attracted by an extra 15 minute trip to Spencer Dock Station, particularly when the Luas system service is operating from Heuston Station to Connolly Station.*

The reluctance to use an existing rail track to achieve the integration of rail passenger services serving the Belfast, Sligo and Rosslare lines with the remainder of the system is difficult to understand. A train connection of under 15 minutes from Connolly to Heuston is hugely attractive compared to the costs of leaving Connolly, changing mode and joining traffic congestion in central Dublin in order to reach the other station. CIE in its 2003 Intercity Rail timetable advises that ... *passengers should allow at least one hour transfer time between Connolly and Heuston.* The SRR's statement that inter-station rail transfer in Dublin cutting journey times by three-quarters is one to one to which ... *passengers are unlikely to be attracted* runs contrary to CIE's advice to its passengers currently making the transfer. The line serves Croke Park, Phibsborough, and Cabra in addition to Drumcondra, the only station on the route now served by the Maynooth line and, apparently, doing well. The reluctance to have passenger trains on the Connolly-Heuston line is a producer rather than passenger decision and requires further analysis. There is little to lose by testing the market before the proposed large investment costs are incurred.

In moving beyond the basic Foster-Joy system railways should seek to generate revenues sufficient to cover the remaining three-quarters of their costs. The task of railway management is to identify the thresholds at which net revenue generating investments can cover investment costs. Irish railways have not been successful in this regard. Investment programmes have frequently added to the deficit overall. Projects have been bundled rather than separately analysed.

The assumption underlying the “Staying in the Game” scenario in the SRR is that such a scenario involves a constant market share for the railways. The assumption requires to be tested by a scenario based on a steady state railway. The SRR states that: *Cost Benefit Analysis cannot be conducted without a base case. The base case provides the benchmark against which the proposed project can be measured.* The updating of the SRR should therefore include a base case as a priority.

(c) A DECLINING RAILWAY YIELDS SCENARIO

An additional scenario should also be included to incorporate consumer resistance to railway charges. The unwillingness of railway customers to bear the cost of railway services is at the core of the railway problem. The gap between the cost and revenue of the railways led over time to policies to restrict competing forms of transport, government subventions and *ex post* searches for spillover benefits and the use of cost-benefit analysis as a propaganda mechanism to justify subsidising the widening gap between the cost of railway services and the amounts users pay to the railway.

Annex A of the SRR confirms that the declining yield problem persists. *The financial position of the company is declining as the “gap” between fare-box revenues and costs widens. Real average fares for passenger rail transport have declined significantly over the past decade.* The SRR indicates falls of 10 per cent and 13 per cent in real average rail fares between 1991 and 2001, a period of rapidly rising prosperity in Ireland. In the rail freight sector both tonne kilometres and nominal receipts declined by 22 per cent between 1991 and 2001, a fall in yield in real terms of 25 per cent. Barrett (1991), estimates that between 1980 and 1989 real railway yields for freight fell by 14 per cent and for passengers by 16 per cent.

In projecting future railway revenues to 2022, provision should be made for at least one scenario which incorporates a reduced yield based on a projection that consumer behaviour in the next two decades will reflect that of the last two decades, the latter a period of unprecedented economic growth. By contrast the SRR states that *... rail fares incorporated within the model were assumed to be constant with inflation i.e. no real increase or decrease over time.* The SRR cites an econometric demand-forecasting model showing positive customer response to service enhancements. If however the record over decades that traffic can only be attracted to the railway by reducing yields is projected forward, then the SRR’s assumptions of constant yields and increasing traffic volumes are inconsistent.

The reduced passenger yield of the railways requires analysis by policymakers. The reducing yields contrast both with the rail lobbyist perspective that railways are a superior form of transport in terms of comfort and speed, and the increasing costs of providing rail services. The reducing yields and increasing costs indicate that the railways are having less success than ever in satisfying the market test for a product. On the Dublin-Cork route, for example, the average revenue per journey in 2001 was only €8.83 and the average trip length is the lowest in terms of the total route length; 43 per cent. Thus, the route most commonly thought of as having

6. The Use of Shadow Prices

the potential for a high quality self-financing train service in fact experiences both low yields and relatively short journey lengths.

A major flaw in public expenditure appraisal in Ireland is the lack of a set of shadow prices reflecting the market imperfections which government intervention is intended to correct. For example, as unemployment fell rapidly during the 1990s, the shadow price of labour should have been corrected in the wide range of policy interventions predicated on labour market failure. In the absence of such a set of shadow prices analysts have to devise their own estimates and policy frequently operates without shadow prices.

Time saving is typically the major benefits from transport investments and the value of time used has a major impact on the internal rate of return on projects. Appendix H of the SRR indicates that a non-working time value of €6.53 was used. Since non-working time is valued at 25 per cent of earnings the SRR's value of time indicates that train passengers have average earnings of €26.12 per hour. This gives annual earnings of €60,000 per train passenger at 2002 prices, or twice the national average. The rationale for this high value of time is not stated.

The shadow price of a fatality is stated in Appendix H to be €1.366 million. The SRR states that there were eight fatalities on the railway over the years 1991-2001. With a rail safety programme costing €1.2 billion over a decade, the cost of the project, the massive shadow price of fatalities assumed at over a hundred times higher than in other safety budgets, and absence of any measured benefits from the programme to date, all indicate that the rail safety programme should be reassessed. Bacon (1999) examined a road safety programme costing £32.7 million (€41.5 million) over the years 1998/2002 which would yield a benefit cost ratio in the range of 2.2 to 1 through to 4.5 to 1 if it cut the accident rate by 20 per cent. The National Safety Council stated in 1999 that: ... *the benefit/cost results ranks road safety at the top of any list of initiatives competing for the expenditure of relatively scarce Government funding. The question is why is the Government not giving its own Road Safety Strategy this priority.*

“Car resource cost savings”, valued at €0.162 per kilometre, account for an average of 47 per cent of the benefits estimated for ten projects examined in Appendix J of the SRR. Since this figure accounts for almost half the benefits claimed for the projects there needs to be greater discussion of them in the text. If there are such huge savings from not using cars then one must ask why so many cars now run on national route networks parallel to the railway. One might also examine why it is State policy to prevent the growth of a competitive bus sector when the gains from not using cars are so large. Might not the benefits of leaving a car behind and transferring to a train also be gained from a transfer to a competitive, lower cost, lower fare, more frequent and convenient bus service?

Externality cost shadow prices should be the province of the Department of Finance and published separately rather than appear

in sectoral studies on an *ad hoc* basis, with the emphasis frequently on advocacy rather than evaluation. The set of EU shadow prices cited on page 187 of the *Strategic Rail Review* refer to the European mainland where population densities are higher than in Ireland and are controversial. For example, the estimate that the external costs of aviation are almost eleven times those of railways might be rebutted by the case that aviation takes place at 30,000 feet, that noise standards and fuel efficiency have improved immensely, and that unlike railways, the aviation sector covers its infrastructure costs such as airports and air traffic control. While road freight is estimated in the SRR to impose almost five times as much in external costs as the railway, the points have to be made that virtually all rail freight in Ireland both begins and ends its journey by road, that road users cover their infrastructure costs unlike the railways, and that rail uses much heavier rolling stock. When railways change to electrical power in Ireland this means the burning of coal and oil at the power station.

Discussion is also required on the costings in the SRR such as the €290 million to reopen the railway from Galway to Cork. All the track is in place, except for the cutting of the points at Athenry, a by-product of Centralised Traffic Control signalling on the Dublin-Galway line. If the Athenry points were restored trains could immediately run through from Galway to Cork. Further investment could take place, as in the Foster-Joy model above, as the growth of revenues warranted. The 32 miles of track from Mullingar to Athlone is in place and a capital cost of €154 million to restore service requires analysis. The seventeen mile line from Drogheda to Navan is used daily for freight and occasionally for passenger services. The estimated cost of €110 million to upgrade the existing track for further passenger services requires analysis and comparison not just with the closed line from Clonsilla to Navan which would cost €408 million to reopen but the SRR might also have examined serving Navan/Dublin by converting the hard shoulder of the N3 and M3 to a bus lane.

In presenting the case for its recommended capital investment strategy of €8.5 billion, the SRR states that it has a Net Present Value (NPV) of approximately €3 billion over the “Do Nothing” option. This raises again the problems arising from the use of net present value as a decision criterion in an economy where the tradition has been to use cost-benefit analysis for public expenditure advocacy rather than evaluation. Net present value (NPV) favours large projects. If we have two projects with the same internal rate of return but of differing sizes, net present value will favour the larger project because it measures benefits minus costs. Net present value is thus inferior to both benefit/cost ratio which is also used in the report, and internal rate of return which is not used.

The SRR’s analysis of decision criteria states that: ... *caution should be exercised in readily interpreting all measures, other than NPV, as there may exist vagaries within the particular data used, of which the analyst needs to be aware. This particularly applies to the IRR (Internal Rate of Return) measure which is highly influenced by the nature of the streams of costs and benefits involved.* The recommendation that caution is not to be

7. Conclusions

exercised in interpreting NPV estimates is inappropriate in view of its bias towards larger projects in an Ireland with a weak tradition of public capital investment appraisal, especially in the transport sector. The problems in the use of NPV are illustrated in Table 6.3 of the SRR which ranks the Dublin/Cork/Limerick/Tralee investment with a benefit/cost ratio of 1.5 ahead of Dublin-Waterford which has a benefit cost ratio some 60 per cent higher at 2.4.

Does the SRR make a convincing case for the investment it proposes? This author's assessment is that the case has not been made. There are problems with both the lack of market options in the scenarios examined and in the application of cost-benefit analysis in the SRR. Reforms are required in three areas of public policy in order to improve the quality of decision-making in Irish transport policy. The Department of Finance should draw up a full system of cost-benefit analysis, The Department of Enterprise, Trade and Employment should take responsibility for competition policy across the economy rather than espouse general principles and then allow other departments to opt out.

A submission to the Competition Authority by the consultants European Transport and Telematics warned that the multiple roles of the Department of Transport ... *as policy maker, licensing authority, manager of subsidy, owner of dominant operator and arbiter of capital grants ... was conducive to protectionism and anti-competitive practices.* The Department of Transport has to reform its tradition of regulatory capture by bodies it is supposed to regulate in the national interest. The Department of Transport's bias against bus competition and independent bus operation can hardly survive further legal challenges. The road investment plan includes also an excessive value of times savings as in the railway study examined here. The road investment plan was subsequently topped up to include motorways with a capacity of 55,000 vehicles a day on routes with as little as a fifth of that traffic level. The State airport investment plans for €1.1 billion were reduced by three-quarters by the Commission for Aviation Regulation.

The contestability model, introduced in the SRR, but not fully developed, should be examined further before railway investment decisions are made. Feeding this contestability model, for passengers as well as freight, into the cost benefit estimates in this report would include some of the following elements. Time sensitive passengers will transfer to air. Some air services such as Dublin-Cork and Dublin-Shannon require no subsidy or investment grants. Others receive subsidies which are lower than rail subsidies and which are allocated by contestable tendering. Real air fares and costs are falling over time. Budget sensitive passengers will find deregulated bus services at significantly lower fares than train fares and no subsidy will be required. There will be significant increases in frequency because breakeven, depending on the load factor required, may be as low as 30 to 50 passengers. Because of the larger road network the deregulated service will be far more flexible than the present rail service.

The section of the SRR entitled “The Competitive Environment” needs to be expanded to include bus and air public transport as alternatives to railways rather than confining consideration of the alternatives to the private car only. To assume, as the SRR does that ... *passenger trips currently taken on the railway divert to private car* ignores the other public transport options. A contested railway will emphasise comfort, speed, safety, en-route meals and drinks, the ability to work en-route, and will also serve other passengers who regard rail as inherently superior to bus, car or air transport. The contested railway model would also embrace a reduced burden on taxpayers by an emphasis on meeting passenger needs, charging prices that reflect the passenger benefits of rail and increasing the productivity of both the railway labour force and railway investment. The overall equation of the railway deficit with social benefits would be replaced by specific contested payments for individual categories of social benefit.

In view of the importance of transport to the Irish economy and the many deficiencies in policy-making highlighted in reports over more than three decades, major institutional reforms in the Department of Transport are required to address large current deficiencies in operations and in investment. Only after wide-ranging reform will we have a sound foundation for policy proposals for Irish railways and the wider transport sector.

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