

CRITICAL ASSESSMENT OF THE PROPOSED DUBLIN METRO

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The Transport Minister Seamus Brennan proposes the plan of a metro link between Dublin city centre and the airport. In light of the recent costs escalation and disappointing completion terms of the Luas project, investor confidence has been dampened. Clare Egan looks into the potential pitfalls of the CBA concerning the project, examines examples of similar rail systems in other countries and assesses risks and uncertainty associated with the project, concluding that Dublin Metro project should be considered with great caution and scepticism.

Introduction

In economic terms, rail transport should be able to justify itself; in reality this is rarely the case. With fixed track transport, analysis is centred on assessing the social need for loss making services. The Rail Procurement Agency has a budget of €9 million from the Department of Transport to cover metro-related research work. This paper attempts to examine the likely return on this investment to society. This is achieved through focusing on the following themes:

- 1) Background to Proposed Metro and Controversy Surrounding the Proposal.
- 2) Cost Benefit Analysis (CBA) and The Links Between Infrastructure Investment and Economic Growth
- 3) An Examination of Systems Implemented in Other Countries
- 4) Transport Mode Substitution: The multi-modal perspective and bus as an alternative
- 5) Risk and Uncertainty associated with the project
- 6) Background to Proposed Metro

Transport Minister Seamus Brennan is to bring to cabinet in the next two months his final proposals for a metro link between Dublin city centre and the airport. Dublin Airport is located in Fingal County approximately 10km north of Dublin city centre, between the M50 motorway and the town of Swords, which lies

2km to the north of the airport. Over 56% of all passengers originate from the Dublin area, with 11% originating from surrounding counties and 33% from the rest of Ireland. According to an Aer Rianta passenger survey Dublin Airport handled 14.3 million passengers during 2001, 25% of these were flying for business purposes.

Mr Brennan is facing a tough political battle to convince his cabinet colleagues that the €2.4 billion plan for the first phase of a Dublin metro system is viable. The Department of Finance remain opposed to the project for a number of reasons; firstly the project is only feasible as the first stage in an overall scheme estimated at costing €20 billion. Secondly, the Department of Finance commissioned a report that suggests that a much cheaper alternative exists, the extension of the DART to the airport, via a new spur line.

The Rail Procurement Agency's (RPA) latest metro plan revised initial estimates of €4.8 billion down to €2.4 billion by reducing the number of stops and design specifications. Legislation to transfer underground property rights to the state is also being proposed in an effort to halve the time for the planning stage of the project from four years to two. The most contentious issue with the metro however, is the proposed route within the city centre. Most recently the RPA submitted a proposal whereby the metro stops in the city would be O'Connell St. and D'Olier St. Mr Rob Leech, Project Manager with the RPA, said this was due to "engineering restrictions on track angles and efforts to minimise costs" preventing integration with DART stations and the national rail network. Mr Brennan has rejected this plan insisting the metro provide a direct link to either Connolly or Tara Street Stations. The RPA's proposal for a 'travelator' – a moving walkway link running between D'Olier St and Tara St Rail Station has also been rejected. This amounts to a small victory for common sense as research has shown that each additional interchange imposed on customers carries with it a minimum 40% reduction in demand.

A business plan has been submitted by the minister to the cabinet's transport subcommittee, based on the RPA's proposals for a public private partnership (PPP) metro contract. It involves repayments of €300-400 million over a 25 year leasing deal, to be paid when the metro goes into operation. The Department of Finance are concerned that ongoing commitments during a long period might compromise the ability of future governments to expand the network. The likely success of PPP in relation to the metro remains to be seen. In August 2002, Frank Allen, Head of the RPA himself admitted that doubts about the future of the proposed metro link to Dublin Airport was not inspiring confidence among prospective international investors. Finally in relation to the financing of the project fears over a likely breach of the EU Stability and Growth Pact must be taken into account. The RPA have commissioned a CBA of the metro and so the purpose of this paper is not to attempt

the same but to highlight some of the likely pitfalls associated with this particular CBA.

CBA and the Links Between Investment in Infrastructure and Economic Growth

“Sustainable growth and development has the basic objective of maintaining growth in the national and international economies, but with the use of fewer resources, particularly non-renewable resources. This means that we would expect a continued growth in GDP but with fewer resources used in transport” (Banister and Berechman, 2000).

This does not automatically mean that there will be less transport, however it does mean that we have to become more efficient in our use of resources. In addition, the current technological revolution in communications and information may also weaken the links between transport expansion and economic growth. Substantial pressure is being placed on central government to finance major infrastructure projects on the understanding that this will lead to increased competitiveness and economic development. Banister and Berechman (2000) claim that based on historical evidence the case is far from clear, particularly in developed economies where additional investment has little impact on the overall accessibility within the transport system.

In the transportation field, the use of CBA has become part of the system of determining priorities for investment and the allocation of capital grants by Central Government. Stanley and Nash (1977) feel CBA as applied to the evaluation of transport improvements has been far from ideal. They claim the ready availability of market prices for many items has led to a failure to trace through the effects of schemes on the economy as a whole. They also note that items for which many values are not readily available have, with the exception of time been subjected to far too little scrutiny. “Evaluation has been used as a hurdle which a scheme prepared on other grounds must negotiate before implementation, rather than as an integral part of the planning process” (Stanley and Nash, 1977).

CBA is often preferred by those wishing to promote a specific option for a particular investment project, in which case the accuracy and impartiality of the analysis would require further checking. “Since it has become common practice to use CBA in the transport field, however, analyses are sometimes produced to support already committed political decisions without being used in the actual decision making process” (Hutton, 1978).

The Community Support Framework Evaluation (CSFE) Unit proposes a number of working rules for Cost Benefit Analysis. Their first recommendation is in relation to timing. CBA is a decision support tool and “It would be undertaken at an early stage in the project selection process before any commitment, provisional or

otherwise, has been entered into” (CSFE Unit, 2002). The CBA should also identify an alternative option for comparison with the project under appraisal, commonly used counterfactuals include ‘do nothing’ and ‘do minimum’ options. It is unlikely that the CBA commissioned by the RPA will seriously examine these counterfactual situations seriously. The possibility of the project displacing other economic activity should be specifically examined. The net benefit arising from the proposed project should be reduced in proportion to the estimated amount of the displaced activity.

Walsh and Williams (1969) recommend that the analyst should show the full effects of all aspects of the options on the group involved as well as presenting the Net Present Value (NPV). This could go some way towards combating the problems arising from the use of NPV “as a decision criterion in an economy where the tradition has been to use CBA for public expenditure advocacy rather than evaluation. NPV favours large projects” (Barrett, 2003). It is also noted here that the Strategic Rail Review’s analysis of decision criterion recommends that caution is not necessary in interpreting NPV estimates. Is this appropriate in view of its bias towards larger projects with a weak tradition of public capital investment appraisal, especially in the transport sector?

Considering Ireland’s proximity to full employment, we must bear in mind Keynes’ words regarding diverting resources out of full employment. “Assuming a full employment economy, use of the resources for the project under consideration will prevent them being used on some alternative project and one must allow for the extent to which private investment will be displaced” (Hensher, 1978). Mishan (1988) points out that many externalities cannot be incorporated within the pricing mechanism, due to the nature of things. The existence of these externalities brings a divergence between social and private costs and benefits. Debate surrounding externalities is prevalent with regard to the environment. We must recognise that although electricity may appear to be a ‘clean’ fuel, electricity generating stations such as that at Moneypoint, Co. Clare, often burn fossil fuel turf and create pollution, so the use of electricity only puts pollution further back in the production chain.

The impact of transport investment on the value of land is a very complicated issue. Large infrastructure developments, such as a metro often have a substantial influence on the value of land in surrounding areas; this increase can in itself amount to a free gift to landowners. In the city of Montreal the council financed the construction of a transit line by borrowing the money against the expected increase in income from rates (land taxes), around the stations that would follow from its opening. Depending on the route eventually chosen it is questionable as to whether a similar policy would work in Dublin. With this in mind the next section of the paper attempts to examine whether we can learn from the experiences of those around us.

An Examination of Systems Implemented in Other Countries

Throughout my research, I have encountered examples from a large number of countries that indicate a certain level of caution is warranted, in relation to the proposed Dublin Metro. A close example is that of London Heathrow. The British Airport Authority undertook this project and it has proven to be far from successful. The high fare that was set succeeded in attracting only 8% of passengers and virtually no staff. The percentage of passengers travelling by car has actually risen since completion of this metro. Only three of the nineteen major European airports examined in a transport Economic study at the University of Rotterdam have a metro system in place: London Heathrow, Paris Charles de Gaulle and Madrid Barajas Airports.

Studies presented by Alan Abouchar of the University of Toronto show that it is unlikely that the subway there had a different impact on Toronto than on other major Canadian cities. "Urban projects and property value change study shows that subway had no effect on property values in subway areas, compared with non-subway areas" (Abouchar, 1977). In light of this one should question the rejuvenation of Ballymun being put forward as a likely benefit of the metro by those in favour of the project at the RPA. If Toronto is any gauge then we cannot in general expect that a metro causes significant benefits to accrue to persons other than the users (apart from pollution control to an extent and even that is not one hundred percent verifiable).

In Norway, the Alesund tunnels connect the town with surrounding islands including the airport. These tunnels are privately financed; the toll company is bankrupt and has been taken over by the banks with debts of NKr 900 million.

The main reason for this situation was the over estimation of traffic by 20-30% as the toll charges were set too high (Bannister and Berechman, 2000). The central problem here is one that could well be mirrored in Dublin; the market is not large enough to sustain the fare levels and to secure the necessary revenue to pay for costs of administration and collection, interest and loans.

Certain theorists would argue that the impact of investment is important in establishing the image of an area and hence its attractiveness to new development. This in turn can have a positive impact on the labour market. Transport investment may act as the trigger mechanism to this process. The alternative explanation seems to lead to the conclusion that only existing locations will be attractive as they have first mover advantages and will always be more accessible than new or peripheral locations. The Merseyside situation in the UK is informative here. It was expected that substantial programmes invested in during the 1960s and 1970s would lead to increases in population and employment, together with rising productivity and income. Bannister's study found that inadequate road networks were not a key

component of that restructuring process and investment was required in retraining, new industries and a regeneration of the local economy. Roads were originally justified on the basis of the expected growth in traffic and the necessity to accommodate and direct this growth. Subsequently, the same roads were being defended as a means to regenerate the local economy (Bannister, 1994).

A final example is that of the London-Oxford passenger route served by three main forms of transport: rail, long distance express coach and car using the M40. The introduction of lower fares on express coaches resulted in passengers transferring from rail travel to coach travel, particularly where journey times were similar (Cole, 1987). It is this topic: the ease of transport mode substitution that the next section examines.

Transport Mode Substitution: The multimodal perspective and bus as an alternative

Dublin Airport is accessible by over 700 buses daily. You can reach the airport by bus from many areas outside of Dublin. Eight separate bus operators service the airport, including Aircoach, a highly successful private venture, without subsidy or capital grant, carrying over one million passengers. The Government continues to finance the railway deficit 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" (Barrett, 2003).

If the Government allowed contestable markets to exist in the transport sector then both operators and service users can benefit. This is supported by the deregulation of the Dublin-Galway bus route, the airport coach service and internal air services. The introduction of additional Quality Bus Corridors (QBC) can also have a positive impact. These cost €400,000 per km., compared with €28 million per km of Luas. Already numbers are up 54% across the QBC network in Dublin.

In a 2001 Aer Rianta passenger survey, 22.4% of passengers used bus with 43.5% using private car (See Table 2). The likely target market for the metro would exist predominately within the sector already using bus. Based on the relative costs of Irish railways, airlines and buses in a contestable market, railways lose market share due to the lower costs of independent bus companies. In the current economic climate surely the Irish Government should be supporting and encouraging competition, not frustrating it.

According to the conclusions of the round table conference of Ministers for Transport on airports as multimodal interchange nodes, the future of airports depends on technical opportunities to cope with congestion. "This concerns the airports themselves as well as the infrastructure of the interconnected modes, in

particular road infrastructure.” (OECD, 2003) It is also noted here that larger airports may justify high investments in rail connections, but these links should be integrated with the regional and national railway system. Fixed track systems are limited to bringing you from A to B. If Dublin Airport is to succeed as a multimodal interchange node then market alternatives need to be considered and promoted. It is worthwhile noting here, that the Strategic Rail Review gave no serious consideration to public transport alternatives to the large railway investments proposed. In addition, the OECD suggested the following as essential for the development of an effective tourism policy: making better use of existing infrastructure rather than expanding it when demand rises and promotion of multimodal services.

Risk and Uncertainty associated with the proposal

According to Bannister and Berechman (2000) risk is used to indicate the likelihood of selecting the wrong project or a project that is economically non-viable. Sometimes the term is used to indicate the effect of a given project on the welfare of taxpayers, relative to the distribution of the project's indirect costs (negative externalities). The term uncertainty is sometimes used to indicate the degree of inaccuracy associated with the forecast of the project's future benefits and costs. Since there is always an intrinsic level of uncertainty regarding the future state of the economy, a project that is largely irreversible or that cannot be stopped without rendering its costs sunk, should be ranked inferior to one with the same NPV but which is flexible to a reasonable degree.

The Dublin Port Tunnel is a prime example of risk and uncertainty. Project costs soared from €165million to €670million, although the tunnel is still too small to take high vehicles (Tobin, 2004). The inefficiency of The Irish Construction Industry results in bills being doubled. Before additional track systems are built the success of the Luas should be assessed. At that stage contracts tendered are likely to be lower as a result of the addition of Eastern European countries to make up the EU 25. Skamris and Flyvbjerg (1997) have concluded that in the case of Danish bridge and tunnel projects, on average, construction costs were consistently 50% to 100% undervalued, whereas traffic forecasts were about 60% overestimated.

The conclusion seems to underlie an established maxim in transportation CBA, which says that in order to arrive at the correct benefit and cost values of a transport infrastructure project one should halve the project's predicted benefits and double its estimated costs (Bannister and Berechman, 2000).

Data on completion times of projects such as the Dublin Metro are very discouraging. “The fact that many tunnels being built 50-100 years ago had similar

total construction times as today's tunnels brings into focus the inefficiencies" (Einstein, 1987).

Conclusion

In summary, the concept of opportunity cost presents us with the question 'would we be better off without it?' One could argue that the proposal is justified on the basis of timesavings, crowding relief and total public transport user benefits. In spite of this, that is not the conclusion reached here. Transport investment does not cause growth but allows it to take place. We must consider the small element of production that railways contribute, at such high cost, in terms of economics rather than emotions. One has to consider with great scepticism projects prepared by bodies that are directly linked to the project and stand to gain from its implementation. Stricter control and regulation of Cost Benefit Analysis by the Department of Finance could go some way towards counteracting the problem. A secure Independent wider evaluation framework is also required. The proposal may seem affordable and therefore worthwhile now but the question remains: Will future generations funding the project agree?

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