

## **ARE PUBLIC PRIVATE PARTNERSHIPS THE SOLUTION TO IRELAND'S INFRASTRUCTURE DEFICIT?**

Tony Redmond\*

**ABSTRACT.** The central question addressed by this paper, are PPPs the solution to Ireland's infrastructure deficit. It examines issues surrounding the PPP process for the proposed €3 billion Dublin Metro currently at the procurement stage. The paper reviews the varying degrees that private sector capital can be utilised to produce services that are traditionally provided by the public sector. It analyses the various advantages and disadvantages that the PPP approach offers and examines possible future PPP projects in Ireland. The paper concludes that PPPs do offer a solution to the infrastructure deficit in Ireland, but only with sustained commitment at the policy and administrative levels, while proposing that the Irish Government PPP investment targets should be increased from 15% to 25%.

### **INTRODUCTION**

Public Private Partnerships (PPP) has been subject to a considerable amount of research and attention over the past decade. The paper in particular reviews the PPP process for the €3 billion Dublin Metro, a 17km twin tunnel urban transport system, connecting the international airport with the city centre, (RPA, 2008). The PPP process is researched in light of its success and failures in Ireland and in other countries. Some of the advantages of the PPP approach include faster implementation, increased efficiency, and improved quality of service and risk transfer (Coulson, 2004). The PPP process also has important National Accounts

-----  
\* *Tony P. Redmond, ACMA, Procurement Manager with the Railway Procurement Agency, a commercial semi-state government agency in Dublin, Ireland. He is a qualified accountant and is currently studying for a Masters degree in Procurement Strategy, Dublin University College Business School.*

and Public finance accounting implications, which centre on the ownership of the asset, and the allocation of risk. PPP expenditure on a project can be considered as a non-government outlay, and therefore will not affect the General Government Balance Sheet in the same way as normal government investment expenditure, since the private partner bears the major part of the risk involved. In theory and in practice, however, PPPs are beneficial only if it can be demonstrated that they will achieve additional value for money over the traditional procurement process. The purpose of this paper is to analyse the possibilities for more PPPs in Ireland and to ascertain whether their use will be instrumental in reducing the infrastructural deficit and if they offer a solution to eliminating it. In preparing this paper, the author was conscious that from a strategic procurement point of view, the issues to be addressed include what criteria should be applied in considering whether to adopt the PPP approach and what were the key objectives of PPPs.

The author will briefly focus on the history of the PPPs in other jurisdictions, their success or failure and compare the PPP process to the traditional forms of procurement. This paper will identify the key principles of PPPs, and investigate the main areas of risk allocation and its implications. The paper will also explore the main disadvantages and failures of the PPP process and how they have performed in other countries. The author will focus on the availability of funding, the appetite of financial institutions to be involved in the process, analyse the complexities, and how the public component influences the process. Another key area of concern is the reaction of employees and trade unions, and how it might affect the terms and conditions of their employment.

Finally, the types of projects that are likely to be successful for the PPP process will be discussed, such as light rail, metro, schools and major roads. From a strategic procurement point of view, a key objective is to improve a project's financial viability by mixing public and private sector skills along with the public sector experience of infrastructure management and the entrepreneurial spirit, commercial and financial expertise of the private sector. In this way, PPP methods could help to unblock projects by reducing the amount of public subsidy required to achieve financial viability (thereby, also triggering the availability of private sector finance). Budgetary rigour should not be discounted or diminished as a key driver for the growth of PPPs in order to put in place certain infrastructural projects across the EU and in other jurisdictions.

## **INFRASTRUCTURE DEFICIT AND PPPS**

Does Ireland have an infrastructure deficit? One only has to travel to Ireland to witness first-hand the traffic congestion, poor rail infrastructure and observe media reports highlighting the lack of hospital facilities, over crowded prisons, polluted water, outdated sewerage systems and inefficient power stations. For example, at the time of writing this paper, the schoolteachers were threatening strike action due to overcrowded classrooms (Independent News, 2008). The level of infrastructure in a country affects competitiveness and performance in a number of ways. Well-developed infrastructure can reduce traffic congestion, increase productivity and reduce costs. This not only affects existing firms, but also affects a country's attractiveness as an investment location and general quality of life (National Competitive Council, 2007).

This infrastructural deficit has occurred mainly due to under investment and unprecedented growth in demand in recent years for modern infrastructure. This deficit is calculated by the National Competitive Council (NCC) (2007) at a massive €150 billion, and despite record levels of investment in recent years, the NCC latest report shows that Ireland still ranks 22nd of the 28 OECD countries in terms of perceived quality of infrastructure. The NCC (2007) has pointed out that the level and quality of infrastructure affects competitiveness and performance. Due to gridlock, currently it can take four hours to travel by road from Dublin to Cork, a distance of 250 Km; this could be reduced to just over two hours travelling within the speed limits, if there were a continuous highway (NRA, 2008). This is just one example, where economies in all areas of people's lives would be very significant, if the infrastructure were to be improved. This means at the minimum, an annual spend of €10 billion is required over the next fifteen years. This is a substantial amount of funding and history shows that the public sector on its own through the traditional procurement process is most unlikely to achieve this.

## **PPP PERFORMANCE IN OTHER COUNTRIES**

PPPs are one of many methods identified in meeting a country's infrastructural requirements. PPP is, in spirit a responsive format where privately financed projects are developed in to provide solutions. Bacon,

(1998, p18), commenting on the possible use in Ireland of PPPs in the areas of physical infrastructure - like roads, sewerage and water facilities, and social infrastructure suggested that "PPP will not be suitable for all projects, but it has the potential to play an important role". Infrastructural projects in the transport domain are the most common case in an indicative list of these types of projects for various EU Member States. A powerful factor appears to be that the provision of transport services provides the possibility of a revenue stream that is acceptable to the public and will potentially repay the investment over time.

The experience of PPPs in America while limited is still worth mentioning. In the USA municipal type bond issues help finance infrastructural development in transport projects. JFK Airport is highlighted as an example of PPPs in the United States. In 1995, the Port Authority of New York and New Jersey approved plans for the redevelopment and operation of the international arrivals building at JFK International Airport, to be carried out by a private sector consortium under a long-term lease. The consortium consisted of Schiphol USA, a subsidiary of Amsterdam Airport Schiphol, LCOR, a New York property developer and Investment Bankers Lehman Brothers. The consortium designed, developed, constructed and operated the terminal under a 28-year lease with the Port Authority. It would however not be typical as a procurement method in the USA. For example, Logan Airport in Boston and O'Hare in Chicago were financed by bond issues by the Massachusetts Port Authority and the City of Chicago respectively. In an Irish context, the National Treasury Management Agency (NTMA) may have a potential role to play as bond issuers, albeit on a smaller scale.

Research by Chesterton Consulting PFI unit (1998), on behalf of the UK National Audit Office showed that some 800 PPP projects have been completed in the UK public sector, with clear value for money determined. UK Treasury research showed that only 22% of PPP projects had expenditure overruns and 24% did not meet programme as compared to traditionally procured projects, of which 73% had cost overruns and 70% were delivered late.

The relative success of PPP projects in the UK can be attributed to the size of the potential market. For example, in the education sector, there are over 700 universities/ Further Education colleges and approximately 25,000 schools. In practical terms, the degree of projects that are proposed at any one time allows for economies of scale in the

process. Despite initial teething problems, the value of current PPP projects exceeds Stg£20bn and it is estimated that there is a further Stg£15bn worth of projects planned. Currently, there are a large number of projects under construction, including major hospitals, major road schemes, colleges and water and sewerage schemes. An example of this would include Cambridgeshire county council (SOPO, April 2008) reached financial close on its Stg£730 million (€25 million) PPP contract with a Waste Management firm. This includes the construction of a new Mechanical Biological Treatment facility.

As a method for the public sector to secure the services of private enterprise, PPPs have required both sides to move away from the adversarial approach, and enter into contracts with mutual advantage and the sharing of project risks. There is no doubt that this has been an all round "culture shock" and as the number of projects increases and provides tangible evidence of how these partnerships work. More and more local authorities are now examining the opportunities that PPP type agreements bring. The UK Government, if anything, is encouraging the move towards such partnering arrangements. The British Labour Party Manifesto (1997, p42) clearly stated that they would "set priorities between projects, saving time and expense".

Adversarial relationships are seen as major barriers to improving quality and productivity (Coulson, 2004). Abudayyeh (1994), states the application of the concept of partnering came into being in the US construction industry in the early 1980s as an effort to improve the dealings between the different parties involved in the building industry. Partnering plays a key role in attaining constant improvement in design and delivery of construction projects, with latest reports suggesting that cost savings of 40% can be achieved. It has encouraged parties in the construction process to solve problems and eliminate waste, thus promising to change the adversarial culture of the industry. The partnering approach relies on the idea that the best method of avoiding conflict is one that prevents conflicts from occurring. Therefore the main objective of partnering is to encourage all parties to a contract to change their relationship from adversarial to accommodating. This change in associations requires changes in attitudes to achieve mutual trust, respect and open communication among all parties involved (Abudayyeh, 1994). Without true and effective partnering projects are likely to be delivered late and over budget.

### AVAILABILITY OF FUNDING

In accordance with the criteria outlined in the Maastricht Treaty, (1992) and the Growth and Stability Pact (1997), Ireland must ensure that the General Government Deficit (GGD) remains below 3% of the GDP. Up to the end of 2007, the Irish Exchequer was operating from a considerable surplus and there was the likelihood that the Exchequer could fund significant public capital projects itself. However, the current economic downturn has changed the Exchequer's plans and it now appears that there is very strong demand on the exchequer on areas of the economy other than the expansion of infrastructural needs, areas such as social welfare, security, health, and education. Priority has to be given to these areas also. These demands will drive the need to expand private involvement in the supply of public services. On the other hand, Goodbody (2005), reported in Ireland's Strategic Infrastructure Investment 2020 plan, Ireland was comfortably within the ceiling of 3% deficit stipulated under the Stability and Growth Pact. Moreover they stated that Ireland's debt to GDP ratio compared well with the average of all 25-member states of more than 60%. Currently the Irish debt to GDP ratio at the end of March 2008 is 21%, €38 billion debt versus a €180 billion GDP (NTMA, 2008). Against this background, it is clear that the Irish Government has considerable scope to increase borrowing, without undermining public finances or breaching any of the conditions of the pact.

The National Development Finance Agency (NDFA) was established on 1 January 2003, in order to facilitate the implementation of the Government's infrastructure investment programme. The Department of Finance's Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector (1994) require a sponsoring Agency/State Authority (Departments, State Agencies, Local Authorities, etc.) to seek the advice of the NDFA on all projects with an investment value in excess of €30 million.

The NDFA must advise State Authorities of the most beneficial means of financing the cost of capital projects in order to achieve value for money, whether procured traditionally or through a PPP. In PPP projects, it advises on financing, refinancing and insurance. In July 2005, the role and functions of the NDFA were expanded to include a specialised procurement delivery function. NDFA established a Centre of

Expertise within the Agency for the specialist procurement of PPP projects (NDFIA, 2008).

The PPP process and capital expenditure commitments in general were underpinned and strengthened in 2004 by the introduction of five-year multi-annual capital spending envelopes covering the period 2004-2008, which set out targets for traditional and PPP investment. The envelopes included a target of €3.6 billion for private sector investment in PPPs by 2009. In addition, a further €1.35 billion was earmarked for PPP investment funded by user charges. These targets would see the PPP contribution in total Irish Government investment increase from 3% in 2004 to 15% of total Government investment in 2008. Many believed that 15% was much too low a target.

Currently, potential PPP proposals may be found in projects relating to highways, light rail systems, Metro, prisons, schools, third level colleges, sewerage schemes, water treatment facilities and solid waste disposal facilities. Terms of reference, as implied in the Department of Finance National Communications Strategy (2003), indicate that there should be weighty, yet not exclusive, emphasis on roads procurement. PPPs should compliment the traditional public procurement role, not be a substitute for existing arrangements; the private sector should only be asked to assume risks that it is best able to manage.

### TRADE UNIONS

The Irish Congress of Trade Unions (ICTU) does not share the same eagerness for PPPs because of the long-term outcomes they might have for members' employment protection. According to the ICTU (2005), "PPP poses a serious threat to the delivery of future public sector services by public sector staff". There is, of course, the EU Directive on the Transfer of Undertakings Protection of Employment (TUPE). While this might offer some limited security to employees transferred from public sector to the private sector, history has shown that public sector unions would be severely opposed to any such decision. It is possible however that trade unions would not be completely opposed to PPPs consortia engaged in PPP projects should they recognise trade unions. As stated, PPP projects should be additional to current services and therefore public sector staff would not have to face the prospect of transferring to the private sector.

### **Appetite of Financial Institutions**

The financial community is also broadly in favour of the introduction of PPPs in a number of areas. The major banking groups have experience of debt financing across the world especially with various PFI projects in the UK. The view is that, any civil engineering PPP projects in Ireland have sufficient funding of say €30m: to enable the private sector to benefit from economies of scale, absorb the initial learning costs and, at the same time, make an adequate return. However, larger scale projects will offer the best opportunity for value for money to be achieved. Based on the Metro North experience, there appears to be a healthy appetite from the financial institutions to be involved in the process (RPA, 2008).

### **Objectives of PPPs**

The objectives of PPPs are straightforward. While the public sector seeks to enter into contracts where incentives exist for the private sector to deliver services on time and to specific standards, the private sector wants to earn returns on their investment and collective skills. In these state of affairs, arguably, the public sector has a common interest with private financiers whose return is dependent on the delivery of quality services on time and to a specified standard. The theory indicates that PPP's are aimed at delivering increased value for money over traditional procurement options, provision of services which otherwise may not be provided and an increase in the speed at which capital projects are brought to completion. Involving the private sector more centrally in the provision of services, should help in capturing private sector innovation, commercial and management expertise. Transferring risk to the party that can manage it best and providing incentives for the private sector to deliver services on time and to a specified standard is an aspect of both traditional and PPP procurement.

The UK Treasury Guidelines for Public Sector Comparators on Value for Money in PPP Proposals, according to Coulson (2004), is critical of the way the revised guidelines treat tax, returns to equity holders, residual costs, discount rates and risk. The purpose of the PPP process would be similar in the Irish jurisdiction. Coulson identifies that in general PPPs strengthen the "affordability calculation". He suggests that various departments must demonstrate that proposed PPP projects could be paid for, within their long-term revenue budget forecasts, without leading to unacceptable cuts elsewhere (such as cuts in hospital

beds, Pollock (2004) and UNISON (2002) for details of cuts that took place when PPP funding was used; and Broadbent et al, 2003, for an assessment which concludes that bed reductions should not be solely associated with PPP).

Coulson (2004) also states that Government must keep sufficient capital resources available to ensure that if conventional procurement turns out the best value-for-money option, they are capable of financing the project that way (responding to criticisms in Heald (2003)). Value for Money “should not be achieved at the expense of workers’ terms and conditions”. Coulson (2004) argues that when calculating the best value-for-money option, wage costs should be kept the same in both alternatives (responding to the criticism that PPP is cheaper because the private sector pays lower wages – Broadbent et al., (2003)). Edwards et al (2004) argued that PPPs “should not be used for IT or ICT projects”, and generally not for projects with total value less than £stg 20m. This amount is on a par (€30m) with the guidelines outlined by the NDFA (2008) previously.

In the UK, concerns have been expressed over the complexity in the PPP process that, in many cases, delays the provision of capital projects. Furthermore, Ireland's public and private sectors lack specialist expertise in this area. As a result, the time involved in what is already a complex and lengthy process could increase. However, in the longer term, it is likely that PPPs could deliver both time and efficiency savings. The statutory planning and procurement timeframe is much longer than that of a traditional process; however the implementation period can be substantially shorter as a result of the co-operative approach between the client and the concessionaire, and the innovative freedom brought about by this cooperation. The proposed timeframe for the Metro North PPP process is six years from project definition to implementation. While this seems a lengthy period, it is equivalent to the time taken to implement the Dublin light rail system using traditional procurement that was a much less complex project.

### **ROLE OF THE PRIVATE SECTOR**

As witnessed in other countries, the private sector has delivered some major infrastructure projects. Private oil and gas companies around the world for example, have laid pipelines for thousands of kilometres

(Shell, 2008). The past decade has seen Ireland's resources in "professional" skills grow as a result of the investment in education and the inward migration. Substantial knowledge has been gained by the private sector from delivery of a major motorway system. In this context, Ireland's private sector is likely to have the management, commercial and innovative expertise to operate PPPs effectively, particularly when the relevant experience has been gathered.

### **Risk Allocation**

Optimum risk allocation would be as crucial in the context of Irish PPPs. It would allow the Government, to some extent, to adopt a "hands off" role in the provision of services. In only assuming those risks which it was best able to manage, and allocating significant risk to the private sector, the public sector would limit its exposure and, at the same time, provide the private sector with incentives to deliver services on time, at lowest cost and to a specified standard. According to the Minister for Transport, Martin Cullen (2001), risk transfer is a fundamental element of successful PPPs. He stated that a good PPP would ensure that project risks are allocated to the party best able to manage them at least cost. Grimsey and Lewis (2002) identified the key risks as technical risk, due to engineering and design failures, financial risks arising from inadequate hedging of revenue streams and financing costs, construction risk due to faulty construction techniques and cost escalation and delays in construction. Other risks they identified included operating risk, due to higher operating and maintenance costs, revenue risk, due to traffic downturn or failure to extract resources, force majeure, political and environmental risks.

## **COMPLEXITIES OF PPPs**

PPP procurement is currently an intricate process and there are a number of issues that need to be explored before a decision can be made as to whether it would be prudent to implement this theory in an Irish context. General complexities associated with the PPP process have been experienced in the UK and North America and have exposed a number of inherent difficulties involved in implementing an efficient PPP process. Ng et al (2002) in "Problematic issues associated with project partnering – the contractor perspective", found that the reluctance of the awarding authority to fully commit to the partnering agreement was the main

reason for ineffective project partnering. Public sector management and implementation of numerous PPP projects is limited due to capacity constraints. PPP projects are, by nature, extremely complex and structured; the result can be a very long and expensive procurement process. The public sector sometimes can demonstrate a lack of commitment to the process. Significant resources must be made available to train staff and build units dedicated to the PPP process.

In Ireland a long-term view is required in order to build strong foundations on which the process can be based. There needs to be a strong focus on output specification rather than input specification. The private sector is required to be involved in the project at the planning and design stages. This encourages innovative solutions for delivering specified outputs and delivers good value for money. Trust or lack of trust between contracting partners can be a disadvantage. The nature and structure of projects can sometimes inhibit partnering. Public opinion can sometimes be a factor against partnering. Public projects require complete documents and a fixed price, precluding full partnering. The construction industry seems to be somewhat reliant on legal protection. The low bid methods of procuring projects appear to lead to built-in conflict. In strictly financial terms, it is always cheaper for the public sector to borrow money (Klein, 2005). Klein states the private sector simply cannot match the Exchequer's capacity to borrow funds. Bidding costs for the private bidders can be substantially more expensive than in the traditional procurement process, according to the Financial Times (12 June 1998). PPPs will have an impact on Irish Contractors. PPP projects will most likely attract more competition from other EU and World contractors. While this would be favourable in so far as it might help to drive down, possibly, inflated bidding costs, the negative effect would be the potential loss of work for Irish contractors. A further disadvantage is the conceivable delays in the already cumbersome planning process. Whereas one of the proposed advantages of PPP as a procurement technique is its ability to increase the speed in which capital projects are brought to development. In reality, it could do the opposite if greater time is required at the front end of the process.

### **DUBLIN METRO NORTH PPP**

The Dublin Metro has received considerable attention in the Irish media due to its projected cost and programme compared to a recently

completed project €750 million “Dublin Port Tunnel”. This project was hampered by problems at every step to completion. The port tunnel is 4.5 km and was procured using the traditional procurement method with the planning stage taking approximately ten years prior to commencement of construction. The Dublin Metro on the other hand is now in the procurement stage and the construction is scheduled to be completed in 2013. The PPP award of contract (financial close) is scheduled for 2009. Risk transfer outlined in the contract details planning, property, operating, maintenance and revenue generating risk retained by the public sector. On the other hand technical, construction, financial and environmental risk will be allocated to the private sector. Regulatory/political and force majeure risk will be shared. The 17km underground Metro is expected to carry some 34 millions passengers a year and will allow passengers to travel from Dublin Airport to Dublin City Centre in under 20 minutes offering a 4 minute frequency of service at peak times (RPA, 2008).

There are four consortia prequalified to tender and they include several Irish firms. Lessons learned from the Port Tunnel and recent PPPs have been analysed so that the same mistakes are not made this time with the view to achieving greater value for money. The local authorities have commenced planning for the disruption caused at construction stage. The NTMA have dedicated staff solely to the project and the Irish government has allocated significant funds up front to cover the various project costs including land acquisition, insurances, legal, EIS, enabling and investigative works. Early involvement from the private sector has ensured that innovation has been encouraged with resulting beneficial input to the planning and design stages.

## CONCLUSION

Expanding the use of PPPs in Ireland has led to the conclusion that there is a role for such procurement techniques in a number of areas. It is not, however, as if there have not been public and private sector partnerships in Ireland before now. There have been several recent examples of PPPs and these successes looks favourable at the future roll out of more of the same. There will still be recourse to the traditional procurement methods in the future for the most part especially for those projects costing less than €30 million. Nevertheless, it is evident that

there are a number of proposed major projects that can benefit from the PPP method of procurement.

As PPPs are by their nature a complex process, and as planning procedures are a critical part of the implementation of projects, the early experience of PPPs may not see this timely objective being met. However, provided the private sector is involved in the project from the earliest stage and by virtue of the synergistic and innovative approaches that they can bring to the table, will increase the speed at which capital projects are brought to development. However, they can play an additional or incremental role, which should not displace existing programmes or plans for Exchequer capital spending (i.e. traditional procurement). While the author envisages a role for PPPs in a number of areas such as roads, light rail, metros, schools, third level colleges, sewerage schemes, water treatment facilities and solid waste disposal facilities, he proposes that any decision to go the PPP route should be on a project specific basis.

Reaching such decisions can only be done by strict adherence to criteria including that PPP projects should have a high priority at national level. PPPs should provide value for money, i.e. good economic value that is not necessarily the same as least cost. PPPs should be affordable. The assessment of affordability by the procuring body is as important for privately financed projects as it is for those that are publicly financed. PPPs should be bankable as financiers will be reluctant to commit finance when a project entails high participation costs, risk transfer proposals that are not acceptable to financiers and lengthy and complex contractual negotiations. PPPs should provide for optimal risk allocation between public & private sectors. PPP's should focus on service outcomes or outputs rather than on the provision of assets. As regards the provision of roads, while the private sector is unlikely to make a substantial contribution to the development of the road system in the short term, a number of carefully selected projects could be put in place, provided they meet the criteria.

The implementation of PPPs will require sustained commitment at the policy and administrative levels particularly with regard to the initial infrastructure procured on this basis where, if the United Kingdom experience is to be taken into account, there are likely to be teething problems. Such difficulties could be minimised in two ways. Firstly, the projects should be of an order of magnitude - say a minimum of €40m

for civil engineering projects and between €7m - €15 m for building projects whereby the private sector can, in effect, "absorb" the learning experience through economies of scale. The costs of this learning experience will be significant and the larger the scale of the initial projects, the better the chance they have to deliver value for money. This author proposes that the 15% planned for Public Private Partnership is inadequate if the economy is to maintain a steady growth over the next twenty years, equal to that achieved in recent times. History has shown that the public sector rarely achieves its stated goal. Thus to continue with 85% through the traditional public procurement on infrastructure may fail to meet its infrastructure requirements. The author proposes that the allocation of 15% participation in the Public Private Partnership should be increased to 25%, and this should be the subject of further analysis.

#### REFERENCES

- Abudayyeh, O. 1994. Partnering, a team building team approach to quality Construction management. *Journal of Management in Engineering, ASCE, 10 (6) pp10-13.*
- Bacon, P., and Associates, 1998. An Economic Assessment of Recent House Price Developments; Dublin.
- British Labour Party Manifesto <http://www.labour-party.org.uk/manifestos/1997/1997-labour-manifesto.shtml> Accessed 4 February 2008.
- Broadbent, J., Gill, J. and Laughlin, R. 2003. Evaluating the Private Finance Initiative in the National Health Service in the UK. *Accounting, Auditing and Accountability Journal* 16, (3) pp442-445.
- Chesterton Consulting PFI Unit (1998) Farrell Grant Sparks – Goodbody Economic Consultants – Public Private Partnerships.
- Coulson, A. 2004. Value for Money in PFI Proposals: A commentary on the 2004 UK Treasury Guidelines for Public Sector Comparators. School of Public Policy, the University of Birmingham.
- Department of Finance, *Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public Sector, July 1994.*

- Cullen, M. 2001. 2nd Annual Public Private Partnership / Private Finance Initiative Global Summit, 10-12 October 2001, Burlington Hotel, Dublin. Keynote Address by the Minister of State at the Department of Finance.
- Edwards, P., Shaoul, J, Stafford, A., and Arblaster, L. 2004. *Evaluating the Operation of PFI in Roads and Hospitals*, ACCA Research Report.
- EU Directive on the Transfer of Undertakings Protection of Employment TUPE, *Financial Times* (12 June 1998) page 12.
- Grimsey, D. and Lewis, M.K. 2000. Evaluating the Risks of Public Private Partnerships for Infrastructure projects. *The International Journal of Project Management*. 20 (2002) pp107-118.
- Heald, D. 2003. Value for money tests and accounting treatment in PFI schemes. *Accounting, Auditing and Accountability Journal*. 16, (3) pp342-371.
- Independent Newspapers: <http://www.independent.ie/education/latest-news/one-in-four-primary-pupils-in-overcrowded-classrooms-1348158.html> Accessed: 15 April 2008.
- ICTU (Irish Congress of Trade Unions) 2005. Guidelines for Unions on Consultations with State Agencies and Public Authorities concerning Public Private Partnerships. Publication – May 2005. pp 3-5.
- Klein, M. Risk, Taxpayers, and Role of Government in Project Finance. Policy Research.
- NRA, National Roads Authority 2008 <http://www.nra.ie/PublicPrivatePartnership/SelectionofProjectsforPPP/> Accessed: 10 March 2008.
- National Treasury Management Agency, 2008 <http://www.ntma.ie/home.php> accessed 4th April 2008.
- NDFA, National Development Finance Agency. <http://www.ndfa.ie/home.html> Accessed: 16 March 2008.
- Ng, S., Rose, T. M., Mak, M. and Chen, S. E. 2001. Problematic issues associated with project partnering – the contractor perspective. *The International Journal of Project Management*. 20 (2002) pp437-449.

Pollock, A. M. 2004. Analysis of the ACCA Report: 'Evaluating the operation of PFI in roads and hospitals NHS plc: The Privatisation of our Health Care. *Verso PPP Forum (2004)*.

RPA – 2008 Railway Procurement Agency Website – Accessed 4<sup>th</sup> April 2008 [http://www.rpa.ie/metro/about\\_metro/what\\_is\\_metro](http://www.rpa.ie/metro/about_metro/what_is_metro)

Shell Oil Company. 2008. [http://www.shell.com/home/content/aboutshell-en/our\\_strategy/major\\_projects\\_2/dir\\_major\\_projects\\_13032008.html](http://www.shell.com/home/content/aboutshell-en/our_strategy/major_projects_2/dir_major_projects_13032008.html) Accessed: 20 March 2008.

SOPS (Society of Procurement Officers) 2008 [http://www.sopo.org/cgi-bin/news.cgi?action=full\\_story\\_SOPO&id=139463&unpub=false&st rt=&act=search\\_SOPO&term=&keyword\\_bool=&websiteId=2](http://www.sopo.org/cgi-bin/news.cgi?action=full_story_SOPO&id=139463&unpub=false&st rt=&act=search_SOPO&term=&keyword_bool=&websiteId=2) accessed 11<sup>th</sup> April 2008.

UNISON (2002) PFI: Failing our Future – A UNISON audit of the Private Finance Initiative, London: UNISON Communications.