

Submission to the Department of Public Expenditure and Reform on the Review of the Public Capital Programme

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May 2014

Introduction

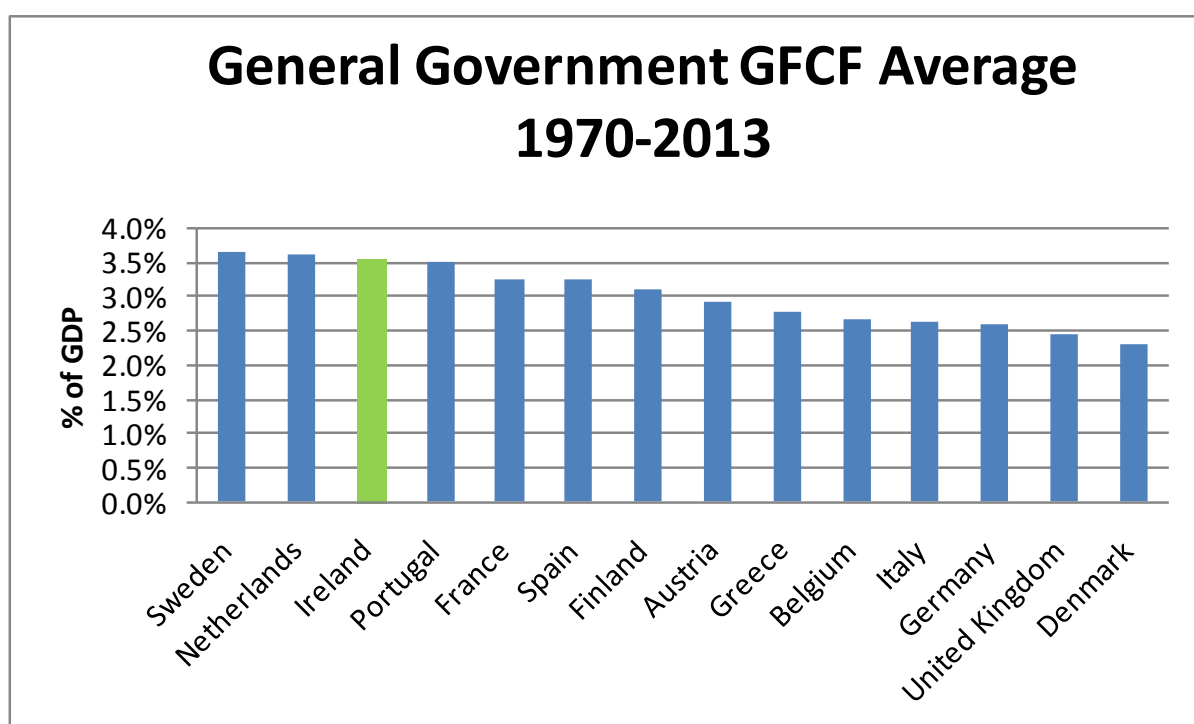
This brief note sets out some high level principles that are important in deciding on the public capital programme. It does not make specific recommendations on projects or investment areas as it is argued below that such advice should be based on thorough background research, which has often been lacking in public investment decision making in the past. Such background research costs little relative to massive sums involved in an investment programme but it can significantly improve the impact and effectiveness of new investment.

Contrary to popular belief public capital investment in Ireland has been well above the EU-15 average over the period 1970 to 2013 (see figure 1). This is all the more noteworthy given the gap between GDP and GNP in Ireland relative to other countries. Nevertheless, for many infrastructures Ireland is perceived to lag behind many EU-15 countries in terms of quality and quantity¹. This may be due to the significant catch-up required in Ireland but it does not reflect the significant improvements in some infrastructures, such as motorways, or the excess capacity at airports. There is, nevertheless, some concern that the significant expenditure over the last 40 years has not improved Irish infrastructure by as much as it should have. There can be many reasons for this. For example, if prices for public capital projects were higher in Ireland compared to other countries then

¹ For example the World Economic Forum Global Competitiveness Report 2012-2013 ranks Ireland 25th for infrastructure behind many European countries including Spain, Portugal and the Ukraine.

less physical output was constructed for a given budget in Ireland². Likewise if the quality standards applied are lower than in other countries, then the infrastructure will deteriorate quicker, resulting in faster depreciation and ultimately a lower overall stock of infrastructure. Furthermore, if the required maintenance is not carried out, then the infrastructure will deteriorate quicker than expected. Finally, if projects are poorly chosen then the expenditure will not add to the productive infrastructure stock. This can arise if the infrastructure planning is not adequate. Thus, it is important to recognise that a Euro of public capital expenditure does not necessarily create a Euro worth of productive public capital, i.e., “The cost of public investment is not the value of public capital” (Pritchett, 1996).

Figure 1. Long-run (1970 - 2013) Average General Government Gross Fixed Capital Formation as Percentage of GDP for Selected Countries



Source: Own calculations using data from EU DG-ECFIN AMECO database.

Methodology

Over the period 1989-2007 a consistent approach was adopted to establishing priorities for public investment; the fruits of this approach were used to inform successive National Plans. There have been two main ingredients to this methodology:

- A series of targeted micro-economic studies, looking at specific aspects of the economy, identified potential infrastructural constraints and how best such constraints might be dealt with.

² There is significant international evidence on cost overruns and their causes which is summarised in Morgenroth, E. (2013) “How Can We Improve Evaluation Methods for Public Infrastructure?” in Lunn, P., and F. Ruane (eds.) *Using Evidence to Inform Policy*. Dublin: Gill and Macmillan

- A macro-economic analysis has been undertaken to consider how the different elements of the Plan would fit together and how both the demand side and the supply side impact of the Plan would affect the economy.

For the 1993-1999 Plan and also for the 2000-2006 Plan a range of relevant micro-economic studies were undertaken prior to the development of the Plan itself. Both of these plans were heavily co-financed by the European Commission Structural Funds and the studies were used to support the request for funding. These studies highlighted measures and approaches that had and had not worked in the past and they provided a key guide in developing effective measures to deal with the emerging infrastructural needs of the economy over the planning period. However, in developing the 2007-2013 Plan the range of such micro-economic evidence that was available was more limited than in the case of the previous two plans and, arguably, this may have contributed to some unwise measures being included in the Plan. It may also have reduced the potential effectiveness of measures actually adopted.

For example, the lack of research on transport needs, in particular on integrated transport planning, contributed to less effective decision-making in developing the Plan. Also, in the case of the labour market, there was a significant absence of useful research that could have resulted in better targeted measures for labour market activation in the Plan.

Thus it is important that the necessary relevant micro-economic research is undertaken to provide the underpinnings for the next National Plan. As noted above, the cost of such research is likely to be very small relative to the size of the expenditures to be undertaken over the course of the Plan. If the research contributes to better decision-making it could, potentially, have a very big pay-off. While the cost of a piece of infrastructure may be kept low by effective project tendering and management (i.e., come in on time and on budget), the saving is very much smaller than the loss arising if the infrastructure itself is not required.

On the basis of experience over the last twenty five years, if such research is to be undertaken effectively it takes between six and nine months for the individual studies to be completed. It is not possible to speed up this process just by increasing resources devoted to it because of the need to collect data and to establish suitable methodologies for the individual studies. However, the necessary micro-economic studies can be undertaken in parallel.

The experience with the 1989-92 Plan and the 1993-1999 Plan highlighted the importance of the macro-economic analysis of the Plan as a whole³. It helped establish the crucial importance of investing in human capital. It also helped identify potential bottlenecks in implementation.

From the Mid-Term Evaluation of the 2000-2006 Plan⁴, undertaken in 2003, through to the preparations for the 2007-13 Plan⁵, the macro-economic analysis carried out on the full panoply of Plan measures indicated that the scope of these Plans was too ambitious: unless modified they could

³ Fitz Gerald, J., Kearney, I., Morgenroth, E., and D. Smyth eds. (1999) "National Investment Priorities for the Period 2000-2006". Policy Research Series No. 33, Dublin: Economic and Social Research Institute.

⁴ FitzGerald, J., McCarthy, C., Morgenroth, E., and P. O'Connell eds. (2003) "The Mid-Term Evaluation of the National Development Plan (NDP) and Community Support Framework (CSF) for Ireland, 2000-2006". Policy Research Series No. 50, Dublin: Economic and Social Research Institute.

⁵ Morgenroth, E., and J. FitzGerald eds. (2006) "Ex-ante Evaluation of National Investment Priorities 2007-2013". Policy Research Series Paper No 59. Dublin: ESRI.

result in significant overheating in the economy and to a loss of competitiveness. Unfortunately the warnings, arising from this research, were not reflected in any adaptation of the scope of the Plans. This meant that the implementation of the Plans contributed to the building and construction bubble that was developing. This highlights the potential contribution of such macro-economic analysis to developing better decision-making.

For the next Plan it will be equally important to undertake such a macro-economic analysis to ensure that the scope of the Plan, taken as a whole, is adapted to the changing needs of the Irish economy at a time when the economy is undergoing significant structural change in areas relevant to the infrastructural investments likely to be part of any Plan.

Considerations in Choosing Investment Priorities

Here we consider a number of important issues that arise from an examination of the recent Irish planning experience.

It is important to undertake appropriate cost-benefit analysis before including major projects in the Plan. This analysis needs to be up-to-date, reflecting the latest knowledge of current and expected future trends. This point is important in the context of projects that were planned before the economic crisis and may be considered again once funds become available. These projects should be re-evaluated given the very changed circumstances.

One example, where the investment did not add significantly to the useful infrastructure, was the Western Rail Corridor, Phase 1 of which was completed with significant capital expenditure. However, utilisation of the line is low and requires a substantial ongoing operating subsidy, which indicates a poor return on investment. Another example is the case of investment in new schools: some schools that are less than 40 years old are being replaced, which raises issues about the initial design, the quality of construction and the level of maintenance carried out in these schools in the intervening years.

Avoiding such mistakes and improving the effectiveness of the infrastructure requires more thorough evaluation and planning along with appropriate quality standards at the construction stage. This in turn requires more detailed analysis than has been available to date. Furthermore, public investment needs can only be identified with a full understanding of the current stock of public capital, yet a comprehensive centralised register of state owned assets does not exist in the Republic of Ireland⁶. The lack of such a register has recently been noted in relation to the water and waste water infrastructure in the context of the setting up of Irish Water. Apart from taking stock of the existing public capital it is also necessary to identify the condition of that stock, which should be carried out by qualified professionals who can assess the maintenance needs accurately and can highlight replacement needs⁷. Notably, a detailed public asset register exists for the UK including

⁶ The recommendation in the OPW Property Asset Management Plan (2013) to prepare a baseline report on the Civil Service Office Accommodation is a welcome step in the right direction, which however only deals with a small subset of the public capital stock. Such a register should include details on a wide range of assets including all state funded schools, hospitals, roads etc.

OPW (2013) "Accommodating Change – Measuring Success: Property Asset Management Plane. Dublin: OPW

⁷ A survey of school principles about the condition of their schools is unlikely to yield a true assessment of the condition of schools infrastructure.

Northern Ireland⁸, which lists all tangible assets and values thereof for all central government departments, their executive agencies, executive non-departmental public bodies (NDPBs), the National Health Service and public corporations. Furthermore, the Strategic Investment Board in Northern Ireland has recently carried out an infrastructure audit. Asset management plans should be put in place for all public capital assets and these should specify the maintenance requirements.

A thorough understanding of the existing public capital stock would facilitate the identification of investment needs, which also needs to reflect policy goals, the underlying drivers of demand, and supply constraints. Detailed research will help to identify the most effective policy tool to achieve a specific goal. In the case of public investments a particular objective, for example increasing the share of commuters using public transport, can be achieved using several different tools, e.g., new public transport infrastructure, reduced prices (increased subventions) or increasing the cost of other modes. Detailed research will show which intervention (or combination of interventions) is likely to be the most effective. Thus, the optimal tool is not always public investment. Furthermore, measures accompanying any investment, such as changes in traffic management, can significantly enhance the impact of the investment. Importantly, with ever changing circumstances, and given the diverse areas where public investment takes place, such research needs to be conducted on an ongoing basis.

In addition to the traditional areas of public investment, such as transport infrastructure, social housing, water and sewerage, an emerging issue is how to adapt to climate change and related phenomena. Projected sea level rise and the apparent increase in the frequency of extreme weather events, such as flooding, have significant costs both to individuals but also the country as a whole in terms of damaged infrastructure and lost output⁹. Adapting to these phenomena will require a strengthening of the resilience of existing infrastructure as well as the provision of new infrastructure such as flood defences that will prevent or reduce the damage. However, to choose the economically (and socially) optimal level of investment in adaptation and mitigation will require further research, with a particular focus on resilience in the consideration of options. Unplanned investment could prove wasteful – for example, in some cases the cost of prevention of flooding may not be warranted by the expected returns on the necessary investment.

Spatial Dimension

Another aspect of proper planning is the spatial dimension of public investment needs. Public capital constraints are not found throughout the country and there are significant differences between areas with respect to the stock of public capital of different types and the need for additional investment. Thus, an important issue in deciding on public capital investment is where such needs may arise and where they are likely to be most urgent. Importantly, public capital decisions should

⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228846/7022.pdf

⁹ See Leahy, E., Devitt, C., Lyons, S. and Tol, R.S.J., (2012), "The cost of natural gas shortages in Ireland", *Energy Policy*, Vol. 46, pp. 153–169.

Leahy, E. and Tol, R.S.J., (2011) "An estimate of the value of lost load for Ireland", *Energy Policy*, Vol. 39, pp. 1514–1520.

Lyons, S., E. Morgenroth and R.S.J. Tol, (2013) "Estimating the value of lost telecoms connectivity", *Electronic Commerce Research and Applications*, Vol. 12(1), pp. 40-51.

not simply follow existing patterns of demand but should consider whether alternative patterns are more desirable. For example, transport investment has been based on existing traffic patterns, yet these patterns are unlikely to be optimal.

The location for specific investments must be guided by a spatial planning framework. The National Spatial Strategy (NSS) has been the spatial planning framework in operation since 2002. The economic and social conditions and their likely future trends have changed substantially since the NSS was published as has the economic and social geography of Ireland. Furthermore, a number of key shortcomings in the NSS have been highlighted¹⁰. At the same time, OECD countries are increasingly recognising the need to have a better understanding of the relationships between cities (and especially the capital city) and their hinterlands, and the importance of sustainability in developing transportation and land-use policies. Given these shortcomings it is imperative that a new National Spatial Strategy, which sets out the key principles which should guide the spatial distribution of new public investment and spatial development patterns, is prepared and that public investment is aligned to this. In this respect it is noteworthy that NDP 2000-2006 was published before the NSS was published and the latter had very limited influence on the location of public investment and consequently limited impact. In fact there was no spatial plan in place for the first two EU Structural Plans, and this could be seen as undermining any recognition of the importance of the spatial dimensions in Irish policy making.

Conclusion

Over the last number of years (since the economic crisis) much of the debate on public capital expenditure has focused on the stimulation of construction activity, with a particular focus on reducing the number of unemployed builders. While such short-term aims are understandable, the public infrastructure that is put in place will last many decades and will, if properly chosen, generate benefits over the long-run. In general, the cost of a new job through public investment has been shown to be relatively high¹¹. For well chosen projects the long-run return exceeds the short-run benefits, while poorly chosen projects only have short-run impacts. Thus, the short run impacts should be a secondary consideration, i.e., given two similar sized projects the one that has the higher long-run impact should be chosen regardless of short run impact. In this context it should be noted that expenditure on maintenance of the existing capital stock can have a very high return while at the same time generating significant employment.

While there seems to be a sense of urgency in developing a new Public Capital Programme, it is vital to remember that there are risks to moving more quickly than our capability. Such risks would be reflected in the poor identification of the key projects, the poor prioritisation of such projects, and the overpayment for projects relative to what they deliver.

¹⁰ See for example Morgenroth, E., (2013) "Economics – The Missing Link in the National Spatial Strategy", *Administration*, Vol. 60(3), pp.41-60

¹¹ See Morgenroth (2009) and a larger review which he produced as part of the AECOM Consortium (2013):

Morgenroth, E. (2009) "Irish Public Capital Spending in a Recession", *ESRI Working Paper No. 298*.
AECOM Consortium (2013) "The Employment Benefits of Investment Projects" (2013) *National Roads Authority (NRA) Research and Information Note*. No. Dublin: National Roads Authority.