



THE ECONOMIC
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John Burke,
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30 June 2011

Dear John,

In response to your letter of 9th June I include a short note that Edgar Morgenroth has prepared.
With limited resources we were unable to do a more comprehensive job.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'JF', written over the typed name.

John FitzGerald

A Note on Investment Priorities

Edgar Morgenroth

Economic and Social Research Institute

1. The Impact of Infrastructure Investment

An expansive literature has shown that infrastructure yields a high long-run macroeconomic return, by increasing the capacity of the economy to produce, by reducing costs and by increasing productivity. These impacts tend to arise over a longer period and tend to amount to a multiple of the short-run impact. Consequently, infrastructure investment should be undertaken primarily with the long-run impact in mind.

The size of the return on infrastructure investment is driven by a number of factors. Firstly, the return depends on the existing stock of infrastructure relative to the level of economic activity. At medium levels of infrastructure development the return to further infrastructure investment is generally high as the level of infrastructure is inadequate for the expansion of economic activity and additional infrastructure is complementary to the existing infrastructure (e.g. completing a network of roads). If the current stock of infrastructure is adequate and no constraints exist then the likely return on further investment is low or even negative. Further investment may nevertheless be justified if constraints that are very likely to arise in the future are avoided. Thus, both the stock of the existing infrastructure and the level of demand for that infrastructure are key factors to consider.

The return also varies across different sectors in the economy. For example international transport infrastructure like airports or ports will have little impact on local personal services, except through the impact on transport costs for goods used in these services. In general the return is strongly related to the share of the economy that is competing internationally.

The literature also shows that the return to different types of infrastructure varies. In general the results suggest that the long-run return to core infrastructures such as transportation, energy, communications and water is higher than the return to education and health infrastructure. This reflects the connection between the types of infrastructure and the economy e.g. roads are used directly by firms to produce a service or to transport goods while education infrastructure is not generally directly used for production purposes. The output of the education is more dependent on teachers and lecturers than the infrastructure.

In addition to the long-run impacts infrastructure investment during the construction phase also provides a stimulus to the construction sector and through this to the wider economy, and thus supports employment. In the context of the current jobs crisis this short-term stimulus might seem more important. However, it should be born in mind that firstly, these effects are transitory and secondly that the cost per job tends to be quite high . A number of different estimates on the job creation through infrastructure investment have been put forward . These suggest that large scale projects tend to create less than 10 jobs per million spent while smaller scale projects and in

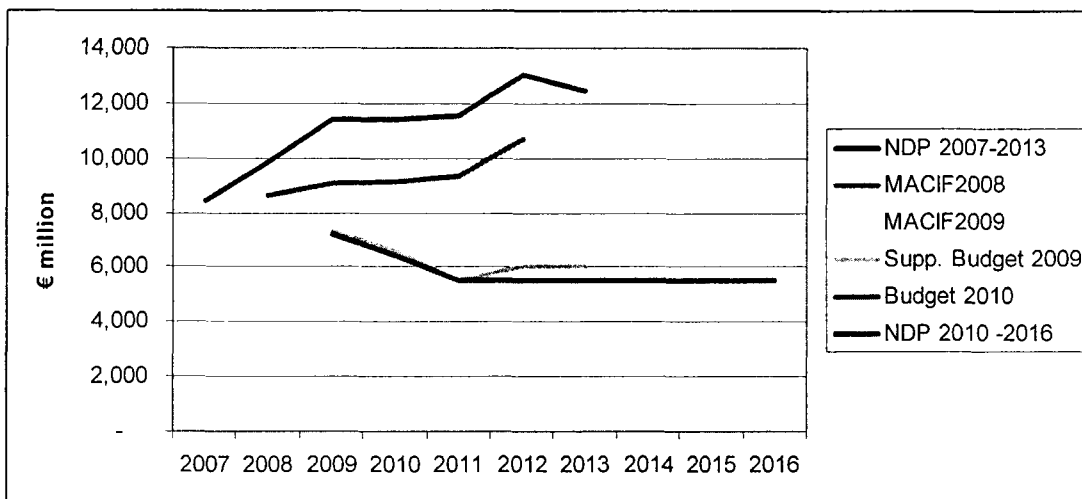
particular refurbishment and maintenance projects tend to generate or sustain a larger number of jobs per million euro spent.

2. Review of the Public Capital Programme

In the past the first expenditure to be cut during an economic downturn was capital expenditure because cutting capital expenditure is relatively painless in the short run. Few people miss something that does not exist, particularly when the decline of economic activity is reducing infrastructure capacity constraints. In contrast, cuts in current government expenditure are immediately impacting on individuals and therefore tend to be opposed more vehemently. However, cuts in capital expenditure have important long-run impacts as the experience of the late 1980's and 90's has shown, where the cuts in expenditure had left Ireland with an infrastructure deficit, which the significant expenditure over the last ten years has not managed to close.

With the worsening fiscal situation in the Republic of Ireland, the National Development Plan 2007-2013 had, de-facto been substantially changed through the reprofiling of the multi annual capital budgets . These changes were the results of successive reviews of the capital programme carried out by the NDP unit within the Department of Finance rather than by external consultants, which however has drawn on existing studies along with other external inputs. A more comprehensive review of the capital investment programme was published on the 26th of July 2010, which along with highlighting in more detail the changed prioritisation recasts the NDP over the period 2010 to 2016. The revisions of capital expenditure are shown in Figure 1.

Figure 1. The Evolution of Planned Capital Expenditure in the Republic of Ireland



3. Improvement to the Stock of Infrastructure

As highlighted above, the return to further investment is dependent on both the stock of the existing infrastructure and the level of demand for infrastructure either through the economic activity or population.

An analysis of the capital expenditure over the period 2000 to 2009 reveals that a significant investment in infrastructure was made during that time, amounting to almost €55 billion in 2009 prices. Of this almost 23% was allocated to the improvement and maintenance of roads and almost 8% of capital expenditure went to water and sewerage infrastructure.

Despite this significant level of investment the World Economic Forum and IMD competitiveness reports rank Ireland poorly in terms on infrastructure. These rankings are based on surveys where executives are asked to assess the infrastructure. Given their widespread use these indicators have reinforced the widely held view that Ireland's infrastructure is indeed poor. However, at least with respect to some infrastructures, these rankings are incorrect when a proper comparison is made using up to date data.

For example in the late 1990s the length of motorways in Ireland was very short . Since then the major interurban routes have been upgraded. Despite this a quick comparison of motorway densities across Europe suggests that in 2008 Ireland still only had just over 20% of the average motorway density. However if one takes account of the population density and car ownership the gap between the existing network and what one would expect narrows substantially. If one then accounts for the significant extensions of the motorway network completed in 2009 and 2010 then it is found that Ireland now has motorway density that exceeds the expected level.

4. Reduced Pressure on Infrastructure

While infrastructure was under severe pressure during the boom up to 2007 the economic downturn has significantly reduced the pressure on infrastructure. Real GDP (market prices) is declined by 12% between 2007 and 2010. In relation to transport for example passenger journeys on CIE services are down by 18% compared to the peak in 2007, congestion is noticeably reduced and significant excess capacity is evident at Dublin airport.

Official statistics from the CSO show that there is now substantial net-emigration which amounted to almost 1% of the population over the 2009 to 2010 period. This is likely to continue for at least another two years. This will reduce the pressures on infrastructure significantly relative to what had previously been anticipated.

5. Recommendations

In the longer term the National Development Plan approach remains more useful than drawing up separate sectoral plans. This is because of the complementarities between areas of investment, overall co-ordination advantages, procedures to ensure macroeconomic consistency, and the potential to apply common impact assessment methodologies. However, this approach requires some certainty on capital budgets over a multi-annual period. As has been shown, capital budgets have been cut successively and at this point there this no certainty that further cuts will not have to be implemented. Thus, the detailed plans that make up an NDP are subject to change. This would necessitate further difficult decisions, which would undermine the confidence in the NDP process.

In addition to the uncertainty about the funding envelope there is also considerable uncertainty about the right projects to pursue. The proper transparent evaluation and analysis has in many cases not been carried out or, where such analysis was done this did not reflect the changed environment. Consequently it is recommended that rather than produce a detailed NDP at this stage a more basic public capital plan should be drawn up that focuses only on the key investments that are required in the short term.

Given the fiscal constraints and the changed general environment the capital budget should be tightly focused on areas where a high return is certain rather than on areas with a more speculative return. Notwithstanding the reservations regarding the short term impacts of investments these should form a consideration. The reduced pressure on infrastructure reduces the need for capacity expansion except in very specific locations where constraints can be demonstrated. In general there the focus of attention should shift from the actual infrastructures to the level of service provided by them. There is also evidence that the existing infrastructure is not optimally utilised. Therefore the capital expenditure should be focused on:

1. Road maintenance to reduce subsequent reconstruction costs;
2. Low cost accident black spot amelioration;
3. Elimination of mains water leakage particularly for Dublin;
4. Before water meters are rolled out, a cost-benefit analysis should be carried out that considers not only the benefit of water meters for the country as a whole but also whether the cost is justified only in some areas (e.g. Dublin) and whether benefits from rolling them out together with smart energy meters could be realised (e.g. shared communications);
5. Improvements in public transport via efficiency measures such as the removal of onboard payments on buses, which would reduce journey times, increase the efficiency of buses and reduce congestion;
6. New schools where a long-run demand can be shown. Care needs to be taken not to extend the capacity where the need for this is only transitory. Schools refurbishment should be done on a basis of proper asset assessments and management plans. Clear rules for school closures need to be established. Also new schools should, wherever possible, be built to facilitate multiple uses (e.g. collocation with sports halls, libraries etc.);
7. There will be an ongoing need to expand/improve selected sewerage treatment plants in order to meet EU Directives and avoid infraction procedures;

Apart from these specific investments significant changes to the structures and processes used to make decisions on major infrastructure projects/programmes should be made:

1. The current situation where agencies promoting projects control the decision making process is subject to significant moral hazard. Independent evaluation of such projects is essential. The establishment of the National Transport Agency, while being a step in the right direction does not adequately address this issue.
2. Currently infrastructure planning and management is not based on a proper assessment of the extent and condition of the existing infrastructure and likely future demand. In most

infrastructure areas proper asset management plans (and even asset registers) do not appear to exist.

3. The changed economic environment is not properly reflected in the cost benefit parameters as set out by the Department of Finance and also the Department of Transport. Current rules do not reflect the significant level of unemployment and still apply a 100% shadow wage. The current test discount rate is just 4%. The value of time needs to be recalculated.
4. The cost benefit analysis on individual projects should be published.
5. The current Methodology does not conform to international best practice. Currently it is assumed that everything will go according to plan, which implies that potential risks are completely discounted.