

The Context for Public Capital Investment

Irish Government Economic & Evaluation Service

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THIS IS ONE OF A NUMBER OF DISCUSSION, POLICY AND ANALYSIS PAPERS WHICH ARE BASED ON MATERIAL PREPARED AS PART OF THE CAPITAL REVIEW PROCESS OVER THE COURSE OF 2014 AND EARLY 2015 WHICH IS NOW BEING PUBLISHED. THE CAPITAL REVIEW BEGAN IN 2014 AND CULMINATED IN THE GOVERNMENT AGREEING A NEW 6-YEAR CAPITAL ENVELOPE AND PUBLISHING "BUILDING ON RECOVERY: INFRASTRUCTURE AND CAPITAL INVESTMENT 2016-2021" IN SEPTEMBER 2015¹.

THE DATA IN THIS PAPER REFLECTS THE INFORMATION AVAILABLE AT THE TIME THE PAPER WAS PREPARED IN DECEMBER 2015.

Summary

This paper outlines some of the issues and themes that underpin the Capital Plan for infrastructure investment by Government over the period 2016 to 2021. Significant improvement in the fiscal environment allows the Government to increase expenditure on capital investment over the next six years compared to the previous plan¹. In determining the scope to invest, the competing needs for current expenditure and the overall fiscal parameters are vital considerations.

It is important that the rationale for state intervention is clearly established before investment decisions are made. There is always an opportunity cost to investments. The rationale for public investment in capital is summarised briefly in this paper and the main factors that constrain public investment are also explored briefly. Although the economic environment has improved, a key constraint is affordability as determined within the context of the overall fiscal parameters. Alternative sources of finance can be used to provide additional public infrastructure beyond that associated with the Exchequer investment alone, and such alternatives feature in the overall capital programme agreed by Government.

There are a number of other constraints to investment decisions: the capacity of the construction sector, the administrative capacity of the planning system and environmental constraints, along with the price of investment and value of investment. Rising prices, for example, erode affordability and it is always necessary to focus too on what the State is obtaining for its investment in terms of outputs and outcomes rather than merely considering the level of resourcing.

This paper discusses these contextual issues, which were instrumental in the framing of the Government's Capital Plan 2016-2021.

¹ Infrastructure and Capital Investment 2012-16: Medium Term Framework, Department of Public Expenditure and Reform, November 2011

1. Introduction

The purpose of this paper is to describe the broad policy context to the Capital Plan for the period 2016 to 2021. The paper focuses on the following issues:

- Articulating the rationale for public investment;
- Setting out the economic and budgetary context since the last Capital Plan;
- Comparing the level of capital investment to other countries;
- Outlining the main constraints; and
- Considering the price and value of investment.

Economic theory outlines the rationale for public investment. The rationale for sectoral investment priorities and individual public projects should be clearly established before investment decisions are made. When projects lack a clear rationale it is more difficult to establish objectives and how they can be met by a variety of intervention options. Moreover, all investments have an 'opportunity cost'. Projects with a poor rationale tend to have high opportunity costs and alternative projects could achieve higher returns for society. In addition to the waste of public resources, capital expenditure on projects with high opportunity costs has follow-on consequences for current expenditure as there are day-to-day costs in operating and maintaining the asset once the initial capital investment phase is complete. There may also be longer term costs in remediation or dismantling of assets.

Conversely, underinvestment in areas where there is demand can impact on competitiveness and hold back economic growth. For example, a lack of infrastructure capacity for international connectivity, such as airports and ports, can limit an economy's potential for growth in exports including tourism. Similarly, bottlenecks in the water and energy sector can hinder foreign direct investment as well as domestic economic activity. Deficiencies in social infrastructure such as schools or hospitals can have a negative impact on the well-being of citizens.

It is important to ensure a sound rationale underpins all investments. In the context of the Capital Plan, this is primarily the responsibility of the main sectoral policy Departments, with reference to Government priorities and the ex-ante programme and project appraisal work that they undertake in accordance with the requirements of the Public Spending Code.

Section 2 of this paper discusses the key policy issues and themes underpinning State-backed capital investment, including the rationale for State intervention.

Section 3 provides an outline of the main economic developments since the previous Capital Plan (2012 – 2016), which was launched in 2011, and explains the broad fiscal rules that inform Exchequer spending parameters.

Section 4 discusses historic trends in capital investment, including comparisons with other countries, and provides an overview of the main drivers of demand for capital investment.

Section 5 briefly summarises other constraints to capital investment: supply capacity, planning and environmental issues.

Section 6 presents some information on price trends in construction over the recent period and reflects on value for money and value of investment.

2 Capital Investment: Issues and Themes

Infrastructure is a vital support to a functioning society. Governments invest in order to improve the productivity of the economy, to facilitate economic growth, to meet societal needs and to enhance public services. Some investment requirements can be met through private markets, but there are circumstances where state intervention in capital investment is merited. The reasons for state intervention are well established and broadly categorised as follows:

- (i) Market failure: when market mechanisms fail to operate efficiently or do not provide the optimal level of output there is a case for public investment.
- (ii) Redistribution: the State may also intervene and provide capital investment for redistributive objectives, to transfer resources to those on lower incomes. Although redistribution is a less prominent objective in capital investment than market failures it may be seen, for example, social housing investment.

Growth Enhancing

Whilst there are short-run benefits from investment, including employment impacts and the other knock-on impacts of project spending throughout the economy, the main aim of capital infrastructure investment is to provide benefits over the medium and long run by increasing the capacity of the economy to deliver increased output and to raise standards of living. This can involve lowering costs, improving efficiency, increasing productivity and enhancing competitiveness. Such investment can also support regional development. Ultimately, public infrastructure investment should be growth-enhancing over the long term.

The OECD notes that public investment has effects on growth over and above adding to the capital stock.² Public investment has a positive long run effect on employment and economic output in most countries. Similarly, it can also have a positive effect on the level of private investment.³

² OECD (2009), *Economic Policy Reforms: Going for Growth*, Paris.

³ Pereira and Pinho (2011) *Public Investment, Economic Performance and Budgetary Consolidation: VAR Evidence for the first 12 Euro Countries*, Portugal

Meeting Demand

The demand for new infrastructure is influenced by factors such as:

- Demographics – for example, population growth, age profile of the population, and changing patterns of household formation;
- Technological change – such as the development of broadband or smart-metering;
- Economic activity – which impacts on traffic volumes and the numbers of public transport users; and
- Environmental factors – such as flooding, climate change, and spatial development.

In addition to providing new infrastructure, public spending is also required to maintain the stock of existing infrastructure to protect the value of investments already made, uphold its operating efficiency, and avoid the need for more expensive capital improvement and rebuilding.

Making Choices

There are different returns from investment across different sectors. Capital investment in transport, water and energy infrastructure is generally considered important to facilitate economic growth, remove capacity constraints and improve productivity. For social services such as health and education, capital infrastructure is one determinant of the quality of services but the quantum and skill of staff also plays an important role in influencing the effectiveness of services. For example, delivering good outcomes for citizens across the health services depends on the medical, therapeutic and care services provided by staff based on their expertise, training and experience.

The level of return on investment is also influenced by the stock of the asset as well as demand. In general, the greater the existing stock of infrastructure in a given sector, the lower the marginal return on additional investment. There are exceptions, such as a road project that completes a transport network, which has synergistic benefits beyond the individual project by facilitating greater connectivity, movement of people and goods and enhancing the productive capacity of the economy.

Public investment in infrastructure is not always the only option for facilitating the delivery of services. There are alternative ways of addressing service demands, and the potential and viability of these should be brought into consideration: for example, demand management through pricing, regulation and provision by the private sector. The option of maintaining the status quo by adopting of what can be characterised for evaluation purposes as a 'do nothing' or 'doing minimum' approach should always be considered in appraising options for intervention in order not avoid a situation where there is a bias towards policy activism that may not be warranted by robust and objective policy analysis and evaluation. After all, there may be scenarios where the cost of investment is not justified by the scale of benefits that can be delivered.

3 Budgetary and Economic Context

3.1 Economic Developments since the last Capital Plan

Launched in 2011, the Infrastructure and Capital Investment 2012-2016:Medium Term Exchequer Framework⁴ contained necessarily lower levels of capital expenditure than previous plans, although it was subsequently supplemented by a number of additional capital investment initiatives as the public finances began to recover.

The economic assumptions underpinning the 2012 - 2016 Capital Plan were informed by the Medium Term Fiscal Statement published in 2011.⁵ The over-riding imperative was the requirement to reduce the Budget deficit, which then stood at 12.5 percent. In addition, there was a recognition that the reduction in the size of the economy implied reduced demand for capital investment in many areas. As a result, working within the constrained resources available, the Plan focused on protecting the significant investments already made and prioritising those sectoral areas where there was a strong rationale for investment.

Table 1 outlines changes in key economic indicators since 2011. They show that substantial and steady improvement has been achieved in the overall economic and fiscal situation. Since 2011 the Budget deficit has been reduced from 12.5 percent to a forecast 2.1 percent for

⁴ Infrastructure and Capital Investment 2012-2016: Medium Term Exchequer Framework, Department of Public Expenditure and Reform, November 2012.

⁵ <http://www.per.gov.ie/wp-content/uploads/Medium-Term-Fiscal-Statement-November-2011.pdf>

2015 and 1.2 percent for 2016⁶. The public capital programme has contributed to the consolidation effort. In addition, the economy has returned to strong growth. This has been driven by improved conditions domestically, with an increase in consumer confidence driving consumption. The Department of Finance, in their *Economic and Fiscal Outlook 2016*, forecasts 6.2 percent growth for 2015.⁷

Table 1 Economic Indicators

Economic Indicator	2011	2015 (forecast)	2016 (forecast)
	%	%	%
Economic Growth - GDP	2.6	6.2	4.3
General Government Deficit	-12.5	-2.1	-1.2
Unemployment rate	14.6	9.5	8.3
Change in Gross Investment	3.2	13	12.5
Change in Private consumption	-0.7	3.5	3.5
Change in Exports	2.1	11.9	6.9

Sources: CSO National Income and Expenditure Account, QNHS and Government Finance Statistics; Department of Finance (2015) *Economic and Fiscal Outlook 2016*

Investment in the economy comprises capital spending by businesses, Government and households. Following contraction, there has been a marked upswing in gross investment, both public and private, since the latter half of 2013 which has strengthened since. This in part reflects increased activity in the construction industry as well as the aircraft sub sector and machinery/equipment. The *Economic and Fiscal Outlook 2016* notes that strong investment growth is forecast for 2015 and 2016; with contributions from all sub-sectors of investment.⁸ Central Bank research concludes that a period of capital re-stocking by private enterprise may now be taking place, albeit at a slower pace than previously forecast, and that

⁶ Department of Finance (2015), Budget 2016
[<http://www.budget.gov.ie/Budgets/2016/Documents/Budget%20Book%202016%20-%20full%20document.pdf>]

⁷ Department of Finance (2015) *Economic and Fiscal Outlook 2016*
[<http://budget.gov.ie/Budgets/2016/Documents/Economic%20and%20Fiscal%20Outlook%202016.pdf>]

⁸ Department of Finance (2015) *Economic and Fiscal Outlook 2016*
[<http://budget.gov.ie/Budgets/2016/Documents/Economic%20and%20Fiscal%20Outlook%202016.pdf>]

GDP growth, credit improvement and capital gains will determine the pace of investment acceleration.^{9,10}

3.2 Fiscal Rules and Affordability

The trajectory of capital expenditure must fit within the wider budgetary framework of the new fiscal rules, which aim to safeguard public finances and achieve balanced budgets and sustainable levels of public debt over time.

As set out in the Spring Economic Statement (SES)¹¹ and the Stability Programme Update (SPU)¹², Ireland will likely exit the “Corrective Arm” of the European Stability and Growth Pact at the end of 2015, this will be formally announced following assessment in Spring 2016, and fiscal policy will then become subject to the provisions contained in the “Preventive Arm” from 2016 onwards. This represents another significant step forward and demonstrates the progress that has been made in restoring stability to the public finances.

The core part of the “Preventive Arm” is the Medium-Term Objective (MTO) - this a fiscal target based on the structural rather than the actual budget balance. This structural target is measured using the difference between income and expenditure after one-off and cyclical impacts are accounted for.

Along with this Structural Balance requirement, the Expenditure Benchmark is the second pillar of the SGP. This benchmark is designed to assist Member States to reach or maintain their MTO. Expenditure growth is now required to be kept in line with the medium term potential growth rate of the economy.

Under the Expenditure Benchmark it is also possible to increase aggregate expenditure beyond the medium-term growth rate by introducing additional discretionary revenue measures (i.e. introduction of a new tax/charge). However, as Ireland is not at its MTO target and there is a need to improve the structural deficit, a convergence margin is subtracted from the medium-term growth rate to assist in reaching to the MTO.

⁹ Central Bank (2014): *Recent Trends in Business Investment*, Dublin

¹⁰ Central Bank Quarterly Bulletin, Q4 2015

(<https://www.centralbank.ie/publications/Documents/Quarterly%20Bulletin%20No.%204%202015.pdf>)

¹¹ Spring Economic Statement, April 2015 (<http://www.finance.gov.ie/sites/default/files/SES.pdf>)

¹² Stability Programme Update, April 2015

(<http://budget.gov.ie/Budgets/2015/Documents/SPU%20for%20Web.pdf>)

In addition, the Fiscal Rules have a particular in-built flexibility mechanism to incentivise investment in projects that have lasting growth impacts. In Ireland's case there may be flexibility for investment around the Expenditure Benchmark treatment of capital formation. The treatment of Gross Fixed Capital Formation (new building such as schools, hospitals, social housing etc.) under the Expenditure Benchmark (EB) is treated more favourably than other expenditure to help incentivise investment.

This operates through the Benchmark not factoring in the full increase of spending in Gross Fixed Capital Formation (GFCF) in any year that Ireland decides to invest but rather it averages the increase over 4 years (time t-3 to time t).

As part of the operationalisation of the Expenditure Benchmark, Ireland sets multi-annual limits on General Government expenditure.¹³ In turn, this determines the multi-annual Departmental expenditure ceilings for both current and capital expenditure across all Exchequer expenditure Vote Groups, with future increases in public expenditure linked to potential economic growth.

The current low cost of public debt on international financial markets (i.e. bond yield) is often cited as a justification for increased capital expenditure on the basis that it lowers the price of investment thereby facilitating a greater level of infrastructural output and also on the basis that the cost of debt can change quickly meaning that opportunities to borrow at low rates of interest are not permanent. However given that the level of indebtedness in Ireland is high in international terms and taking into account the potential benefits in reducing public debt further, a significant increase in debt to fund investment may not be feasible.

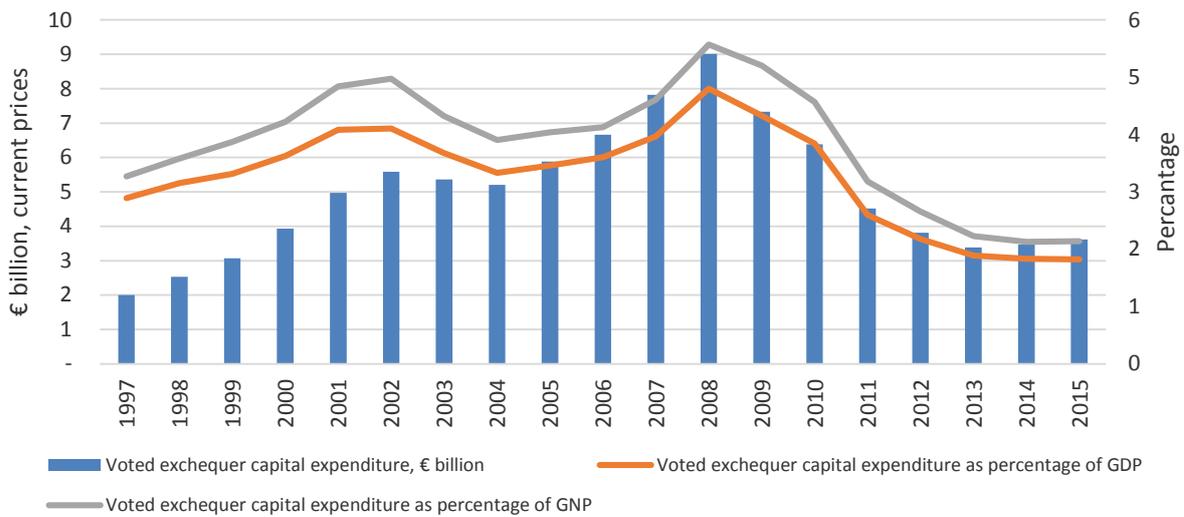
4 What is an appropriate level of investment?

4.1 Trends in Investment

Figure 1 outlines the trend in Ireland's Exchequer funded capital spending since 1997. Capital investment reached a peak of around €9 billion in 2008 – over 5 percent of GNP. In 2015, the Exchequer Capital Programme amounted to €3.6 billion – just over 2 percent of GNP. This reflects the overall impact of consolidation since 2008.

¹³ The Ministers and Secretaries (Amendment) Act 2013 put the Medium Term Expenditure Framework into legislative effect. It underpins the Government Expenditure Ceiling.

Figure 1 Public Capital Investment, 1997 to 2015

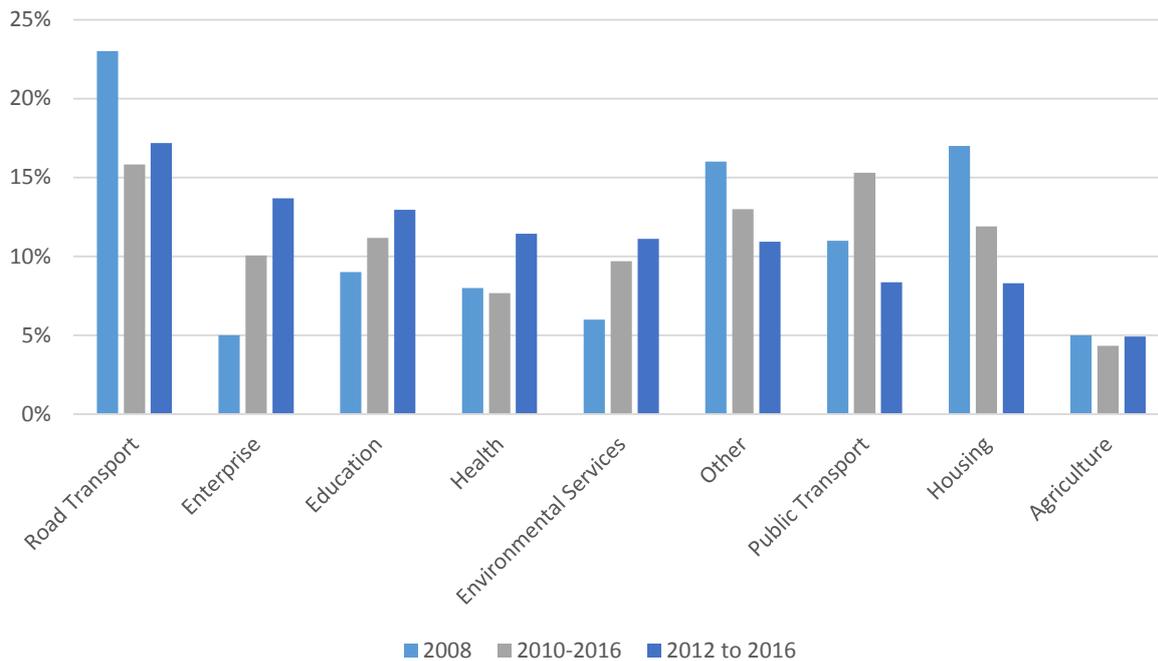


Source: Department of Public Expenditure and Reform Expenditure reports and CSO National Accounts

There were reviews of capital investment in 2010 and 2011. These review exercises led to revised levels of aggregate public investment in response to changed economic and fiscal conditions. In this context, the level of aggregate investment was reduced and within this new level, allocations were reprioritised taking into account competing demands across economic and social sectors.

The enterprise, education, health and environmental services sectors were given priority over other sectors such as public transport and road transport, as shown in Figure 2. In particular, the enterprise sector trebled as a share of the total envelope given the need to prioritise job creation.

Figure 2 Sectoral Distribution of Capital Investment, 2008 to 2016¹⁴

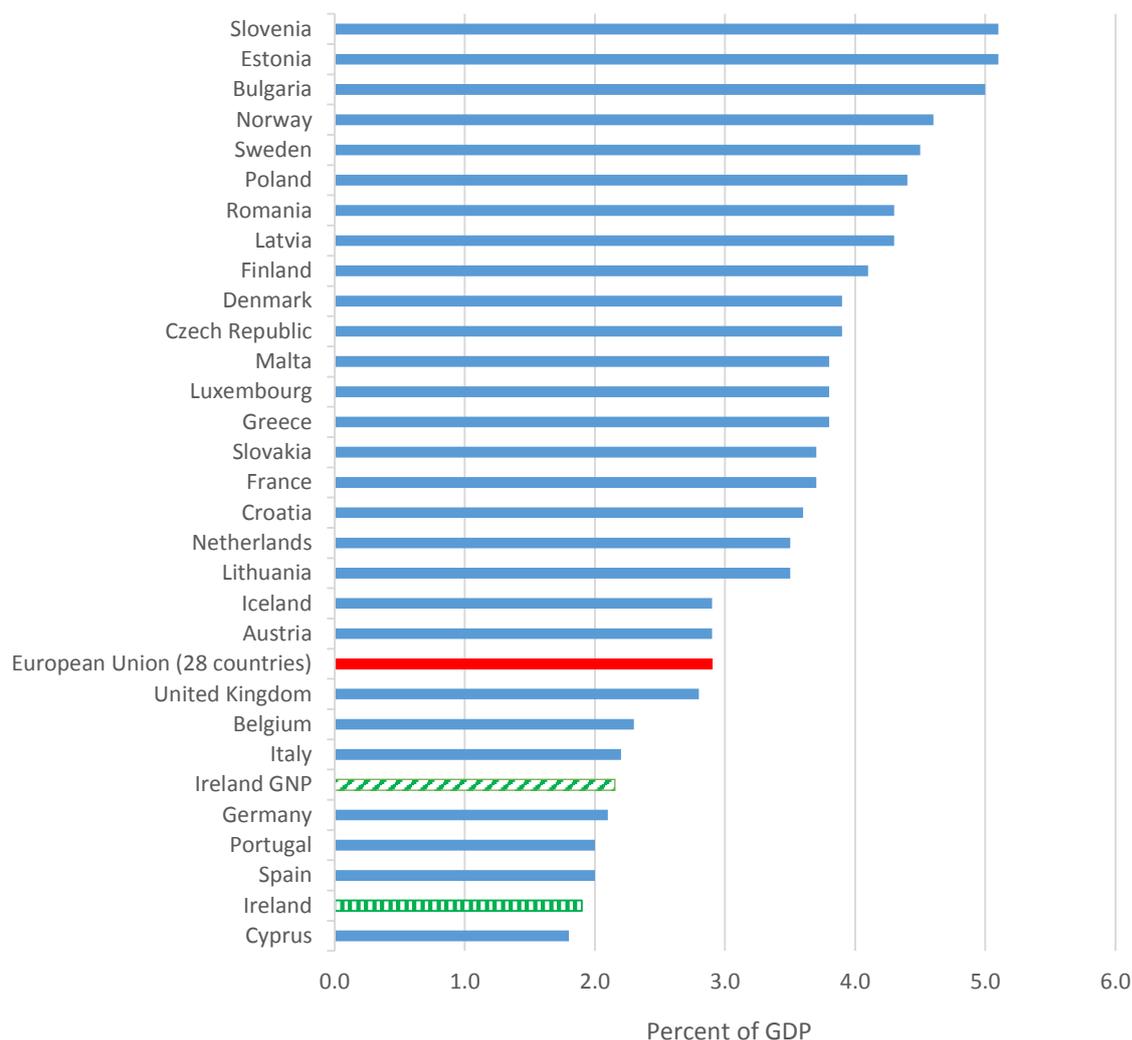


4.2 International Comparison

A comparison is often made with other EU countries to examine the adequacy and the scale of the Exchequer capital investment programme. Figure 3 presents the most recent Eurostat data on comparative capital expenditure across EU Member States, as a percentage of GDP. At 1.9 percent of GDP, the 2014 level of state investment in Ireland was below the EU-28 average of 2.9 percent and ranked 27th of the 28 Member States. Given the characteristics of the Irish economy, GNP is widely seen to be a more realistic measure of the size of our economy as it excludes the repatriation payments of multinationals. By this measure, Ireland would rank 24th of the EU-28 with public investment of 2.2 percent of GNP.

¹⁴ 2008, share of allocation in 2008

Figure 3: Public Capital Investment in EU Member States as a percent of GDP – 2014



Source: Eurostat, GNP figure for Ireland CSO

The OECD cites 3 percent as a medium term average for public investment as a share of GDP over the 1990s and 2000s, noting that there can be wide disparities between countries due to the differing economic and historical contexts.¹⁵ In recent years, Ireland is similar to many OECD countries in that core public investment as a share of GDP has fallen as a result of fiscal consolidation.¹⁶ Public investment per capita fell in 12 of the 33 OECD countries as measured in 2012.¹⁷

¹⁵ OECD *Workshop on Public Investment at Sub National Level in times of fiscal constraint: Meeting the coordination and capacity challenges* (2012), Paris

¹⁶ OECD (2011), *Making the most of public investment in a tight fiscal environment: Multi Level Governance Responses to the crisis* (2009) Paris

¹⁷ OECD (2014), *Recommendation of the Council on Effective Public Investment Across Levels of Government*, Paris.

Focussing on trends analysis over a relatively short period of time reveals only part of the picture. The ESRI has reviewed levels of investment over the longer term and found that public investment in Ireland as a share of GDP over the period 1970 to 2013 has been well above the EU average, with Ireland ranking third behind Sweden and the Netherlands with public investment levels averaging 3.5 percent of GDP. The ESRI concludes that:

*"Contrary to popular belief public capital investment in Ireland has been well above the EU-15 average over the period 1970 to 2013. This is all the more noteworthy given the gap between GDP and GNP in Ireland relative to other countries."*¹⁸

Of course by necessity, international comparisons focus on broad measures of public investment, and there are some limitations with this approach. In more mature economies, for example, there is less demand and lower returns for additional investment due to the advanced level of infrastructure already achieved and the relative absence of demographic pressure or bottlenecks in key economic sectors compared to developing countries. For such economies, the marginal economic return for additional investment is lower and there can be a high opportunity cost. In contrast, economies at an earlier stage of development may allocate higher proportions of public expenditure to investment because there are greater infrastructure deficits such as inadequate transport links, energy and water networks. Nonetheless, such international comparisons have a role to play in assessing infrastructural spending.¹⁹

4.3 Sectoral Demand Drivers

Determining the appropriate level of public infrastructure investment over the medium-term is affected by a number of factors, including the broad fiscal rules, as outlined in Section 3, which inform Exchequer spending parameters. At a sectoral level, the underlying needs and demands for investment are important, particularly if there are bottlenecks in key sectors that impede the development of the economy. A selection of the main drivers are briefly summarised in Table 2.

¹⁸ ESRI (2014) Submission to the Department of Public Expenditure and Reform on the Review of the Public Capital Programme, ESRI, p11

¹⁹ The ratio of capital expenditure to GDP for Ireland may not give an accurate reflection of the level of investment taking place. Caution should be applied in how and when GDP / GNP figures are used and additional indicators should also be measured e.g. capital spending as a % of total spending.

Table 2 Selected drivers of long term public investment requirements

Sector	<i>Drivers</i>
Transport	As well as population growth, rising economic activity is the main driver of demand for transport. Total road kilometres travelled and annual bus journeys increase as the economy improves.
Education	The birth rate and inward migration are the key drivers for school and college places. However, demographic change cannot be assumed to be evenly spread across the country – growth may be concentrated in urban and commuting areas, for example. As such, the geographical distribution of projected pupil population increases must be matched against the existing profile of schools to inform the prioritisation of future capital investment.
Health	An ageing population requires particular social infrastructure such as long term residential care facilities for the elderly.
Housing	Demand for housing rises too as the population grows. Changes in household size, structures and family formations (e.g. an increase in single person households) impacts on the overall quantum of housing required and the optimum mix of the future housing stock.
Environment	Developments in climate change and the need to meet EU emissions targets will require intervention in the areas of energy efficiency and renewable energy. Investments may also be needed in flood prevention to mitigate the impact of climate change.

This table provides a brief examination of selected drivers of long term public investment requirements and is not exhaustive. Other areas may also warrant investment and can generate significant return. This includes sectors such as water and energy infrastructure which are delivered by commercial State Bodies.

4.4 Investment and Renewal

It is necessary to maintain existing infrastructure in order to safeguard and protect previous investments. If sufficient maintenance is not carried out, there is a risk that more extensive and costly investment will have to take place to replace the asset. This applies particularly to infrastructure such as roads, schools, and hospitals. In recent years, when the level of Government investment was contracted in order to enable fiscal consolidation, the scope for undertaking new projects reduced and there was a more acute focus on the importance of protecting the existing stock of assets. Striking the right balance between these two areas is a key policy consideration

In general, if capital expenditure does not match or exceed depreciation, this can mean that the stock of assets is being consumed faster than it can be replaced and impacts negatively on the growth in the capital stock required to promote long term economic growth.

5. Constraints

The core constraint for capital investment relates to affordability and the fiscal constraints as described above in Section 3. There are other potential constraints, including the capacity of the construction sector, the administrative capacity of the planning system and environmental compliance issues. These are considered briefly below.

5.1 Construction

The construction industry is an important stakeholder in the delivery of the publicly-funded infrastructure. The capacity of this sector to deliver projects is affected by many factors. Relevant constraints include access to credit, the risk of insolvency and compliance with environmental standards.

5.2 Planning/Spatial

It is important that the planning system is operating optimally to avoid delays to projects and also to ensure that any vacant sites are brought into proper economic use. Diverging patterns in economic performance also present a challenge as there is some evidence that the recovery is more urban in nature. CSO data on County Incomes and Regional GDP show disposable income per person is highest in Dublin followed by Limerick and Cork, with all other counties falling below the state level of disposable income per person²⁰.

5.3 Environmental

An increase in overall investment levels may lead to higher greenhouse gas emissions depending on the subsector. In the short-term, construction leads to increased emissions, and in the longer-term some infrastructure, such as roads, will lead to increased levels of emissions. Improved energy efficiency and other green-technologies may lead to lower emissions from particular sectors.

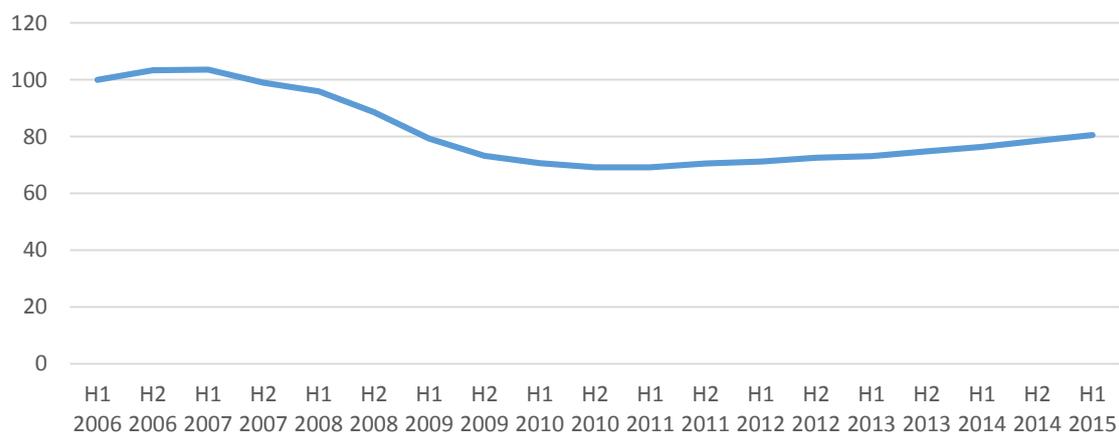
²⁰ CSO Statistical Release County and Regional GDP data 2013
[<http://www.cso.ie/en/releasesandpublications/er/cirgdp/countyincomesandregionalgdp2013/>] preliminary data for 2014 showing similar trends.

6. The Price and Value of Investment

Similar to other components of public expenditure, total Government investment is a function of price and volume. The price of investment is an important driver of the value that can be delivered to the taxpayer and the volume of projects that can be funded. When prices for key infrastructural inputs are rising, the State can achieve less for the same levels of investment expenditure. Conversely, when prices are falling, the State can deliver more projects and infrastructure for a given level of investment.

Figure 4 illustrates the trend in construction tender prices since 2006. It shows that tender prices fell significantly in the second half of 2007 and kept falling through to 2011. Since then, they have been rising gradually, but the data suggests tender prices in 2015 remain some 20 percent below the peak prices of early 2007.

Figure 4 Tender Price Index, 2006 to 2015



Source: Society of Chartered Surveyors of Ireland - 2015

It is also important to recognise that the quantum of the public capital programme is an input measure of the Government's expenditure on infrastructure and it does not necessarily correspond to long term value to the taxpayer. Unless the resources invested are allocated to projects and programmes that are justified by a strong rationale, and which generate economic and social benefits, there is the risk that the investment will be sub-optimal. This underscores the importance of strong ex-ante project appraisal and ex-post project reviews.

The Public Spending Code requires that all projects with a cost greater than €20 million must be subject to rigorous value for money tests: before, during and after the project.²¹ Ex ante appraisal provides an examination of the rationale and value for money of a project, and is undertaken before investment occurs. This allows an assessment of objectives, options to attain these objectives and consideration of all likely benefits and costs, to ensure the most efficient use of public investment is made, minimising opportunity cost. Post-project reviews, which provide an assessment of whether the project generated the expected economic and social benefits, allow for more informed decision making in determining the most efficient way to invest future resources. Capital investment aims to increase productivity and generate economic growth beyond its direct impact, therefore post project reviews can be invaluable in assessing the value of investment, which can be far beyond the magnitude of the original price of the project.

7. Conclusion

The purpose of this paper is to provide a brief overview of the broad economic and policy framework in which public investment decisions are made. In the context Capital Plan 2016-2021 it outlines the broad policy rationale for capital investment and the constraints that apply.

Economic theory explains the rationale for public capital investment taking account of opportunity costs, demand for infrastructure and the effects on economic growth. However, this rationale must also be examined in the context the fiscal space and other limits to investment such as environmental constraints and capacity constraints in the construction sector.

The paper also shows that international comparison of capital investment is useful but also affected by differences between economies in terms of level of maturity and other factors.

Resource allocation decisions for capital expenditure are must be informed by robust evidence so that the State maximise the impact of sectoral investment priorities and ultimately obtain value for money for citizens. This can be achieved through compliance with the appraisal and business case requirements of the Public Spending Code and also by carrying out regular post project reviews to learn from the past. The Irish Government Economic and Evaluation Service has an important role to play in this regard.

²¹ Public Spending Code, Department of Public Expenditure and Reform, <http://publicspendingcode.per.gov.ie/>