



An Roinn Caiteachais
Phoiblí agus Athchóirithe
Department of Public
Expenditure and Reform



Rialtas
na hÉireann
Government
of Ireland

Tionscadal Éireann
Project Ireland
2040

Review of the National Development Plan

Macroeconomic Analysis

IGEES

Irish Government Economic and Evaluation Service

Prepared by the Department of Public Expenditure and Reform
gov.ie/2040

Table of Contents

Summary	1
Section 1: Overview	2
Section 2: Supply Side Constraints	5
Section 3: Drivers of Demand for Public Investment	15
Section 4: Fiscal Constraints	20
Section 5: International Comparisons	22
Section 6: Summary and Risks	26

Summary:

Overview

1. Public capital investment saw its largest ever allocation in 2020. This included increases of €1,706 million related to Covid-19 and Brexit which brought overall capital investment to €9,887 million or 4.8 percent of GNI*. This represented an unprecedented year on year increase of 38 percent.

Supply Side Constraints

1. Increasing levels of capital carryover in recent years may indicate capacity constraints for Departments in spending the recent large increases, with little lead-in time for the necessary appraisal, planning, consultation, design, procurement etc.
2. A range of measures are underway to increase public sector delivery capacity over the coming period, however it will remain constrained in the short-term.
3. Construction sector capacity constraints were clearly evident in 2019 with elevated tender price inflation and a plateauing of employment growth in the sector. Despite a fall in private investment in construction due to Covid-19, this is likely to be short-lived. Construction sector capacity may therefore be a constraint on investment going forward.
4. The construction industry, with support from Government, is seeking to increase capacity through a number of initiatives.

Drivers of Demand for Public Investment

1. The estimated needs to cover Ireland's infrastructure maintenance costs are 2 percent of national income. For Ireland in 2021, that would equate to approximately €4 billion.
2. In terms of demographics, the ESRI modelling indicates an average annual increase of approximately 0.74 percent out to 2040; combined with an ageing population, this will lead to an increased demand for infrastructure.
3. Longer-term economic projections indicate nominal growth over the period 2021-2025 in the region of 6 percent of GNI*, dropping to 4 percent of GNI* over the period 2026-2030, leading to an increased demand for infrastructure services to support economic activity. However, capital investment has a significant multiplier effect and can boost the underlying potential growth of a country.
4. Climate action is another major driver, given Ireland's goal of an average 7 per cent reduction per annum in greenhouse gas emissions from 2021 to 2030 which will require major increases in investment in areas such as energy efficiency.

Fiscal Constraints

1. The funding available for public investment is to a large degree dependent on the overall medium-term fiscal strategy adopted by the Government.
2. At a basic level, this means that a surplus/deficit target is set for the period and, in a given year, this may result in funding becoming available to be allocated across current, capital or tax expenditures. It is then a matter for Government as to what proportion is dedicated to capital expenditure.

International Comparisons

1. In 2020, public investment (GFCF) in Ireland stood at 4.4 percent as a share of GNI*, above The Netherlands (3.6), Denmark (3.6) and the EU27 Average (3.3).
2. In 2020, construction sector employment in Ireland stood at 6.0 percent of total employment, above The Netherlands (4.6) but below Denmark (6.3) and the EU27 average (6.6).
3. Ireland's population is expected to grow by 10.8 percent between 2020 and 2030. This is higher than The Netherlands (3.25), Denmark (2.61) and the EU27 average (0.32).

Summary and Risks

1. Consider an annual increase above the core investment level, combined with a target average investment level of approximately 5 percent as a share of GNI* for the period 2021-2030.
2. It will be critical to ensure risks of overheating are monitored closely. Targeted taxation measures could be necessary to reduce private sector construction demand and free up capacity for the public investment. The alternative would be to reduce public investment.

Section 1:

Overview

1.1 Context

This paper aims to provide the macroeconomic context for the review of the National Development Plan (NDP) in order to inform the level of public investment out to 2030 which will be adopted in the new NDP. Regardless of the level of public investment going forward, it will be critical that any investment is both prioritized and delivered effectively in order to ensure the highest possible economic and social return. This paper is one of a number of inputs into the evidence base as part of phase one of the review of the NDP, which is examining a range of issues including allocation of expenditure, investment priorities, alignment with the National Planning Framework, and governance.

A fundamental question for the review of the NDP is whether the total level of public investment through capital expenditure needs to be adjusted. If so, what is the appropriate level of public investment, taking into consideration factors such as the overall fiscal position; demand for investment; supply side capacity constraints; international comparisons etc. This paper seeks to examine the latest data and projections available in order to inform the Government's thinking on these issues.

There are a number of different definitions for public investment as detailed in Annex 1. In government accounting terms, Gross Voted Capital Expenditure is typically the figure referenced as it relates directly to the budgetary decisions made by the Government. This figure includes both infrastructure spending as well as grant expenditure in sectors such as enterprise development.

In the context of the review of the NDP, it should be noted that given the achievement of high levels of public investment in Ireland in more recent years, and with this Government committed to protecting capital investment levels going forward, this paper finds a clear economic and social case for preserving and sustaining this level of commitment into the future. This will provide the confidence required for multi-annual planning and associated benefits including the attraction of international delivery capacity. This places Ireland in a fundamentally different place to the recession in 2008/2009 following which capital expenditure was reduced significantly in order to lower the deficit.

Starting with supply side, this paper examines trends in the data relating to construction sector capacity in the areas of employment, prices and productivity. The paper also gives a high level consideration to issues of public sector delivery capacity, drawing on

input from Departments and a recent report commissioned by the National Investment Office.

The demand for public investment in Ireland is significant and relatively well established, with fundamental drivers of demand including maintenance, demographics, the spatial pattern of development, economic growth and policy choices across different sectors. However, since the launch of Project Ireland 2040, there have been some notable developments in certain drivers of demand, namely the arrival of Covid-19 and changes in Climate Change policy. This section examines the overall trends in the drivers of demand for public investment.

This will lead on to an examination of the fiscal context and what level of public investment can be incorporated into a sustainable expenditure strategy.

Finally, the paper provides an international comparison across a range of relevant indicators in investment (public and private), construction sector employment (a key supply constraint), and population growth (a key driver of demand). These will provide a useful comparison to inform the level of investment in the new NDP.

1.2 Benefits of Public Investment

Infrastructure is an essential element of a functioning modern society and economy. It can contribute to the general welfare of society, environmental sustainability and economic productivity. Targeted investment in infrastructure can improve the general welfare of citizens through the provision of basic social services such as health, education and housing, particularly in regions where

the role of the private sector in the provision of such services could be weak or even non-existent.

The primary economic benefit from infrastructure is derived from its long-term impact on productivity, thereby increasing the State's economic capacity. Public investment can also "crowd-in" additional private investment in a region. A meta-analysis carried out by Bonn and Lighthart (2014) found that doubling the stock of infrastructure increases GDP by approximately 10%. Investment in infrastructure can increase competitiveness by reducing costs e.g. through improved transport and energy infrastructure, or through facilitating innovation e.g. through the delivery of broadband and education.

Economic theory and research provides a clear justification for Government intervention in the provision of public infrastructure. The case for such intervention is arguably stronger now in 2021 compared to 2018 in light of the economic challenges facing the country and the higher levels of unemployment facing the country more generally. Previous research produced by IGEES in 2015 also demonstrated that public capital investment can have a strong jobs multiplier effect. Work is underway to update that research.

1.3 Project Ireland Investment

Project Ireland 2040 was launched in February 2018 and set out ten year public capital investment ceilings incorporating €91 billion of Exchequer investment and €25 billion of investment by the commercial semi-state sector. This brought total planned public investment to €116 billion over the 10 years to 2027 in the NDP. This incorporated public investment reaching a target of 4 percent as a share of GNI* and then maintaining investment at this level over the remaining period of the National Development Plan.

In addition, the NDP set out 5-year expenditure allocations for each Department over the period 2018 – 2022. The multi-annual NDP ceilings were devised to give Departments a degree of certainty for future planning, with the expectation that DPER would not make substantial changes to published allocations thereafter.

In 2019, public capital investment increased by 19 percent, up to 3.4 percent of national income. In 2020, public capital investment was planned to increase by a further 10 percent, up to 4 percent of national income compared to the EU27 average of 2.9 percent.

Capital expenditure saw its largest ever increase in 2020. While there was a pre-covid increase planned in 2020, there were direct increases related to the Covid response (e.g. health and enterprise) as well as counter-cyclical stimulus measures announced in July. This amounted to an increase of €1,706 million in 2020 above the core spend, bringing the overall capital investment to €9,887 million or 4.8 percent of GNI*. This was an unprecedented year on year increase of 38 percent.

The overall capital allocation for 2021 is €10,121 million, with €9,735 million being core investment and €336 million being once-off Covid and Brexit investment. This means that, in both 2020 and 2021, the Voted Exchequer Capital Allocation will exceed the previous 2008 peak of €9,011 million.

The increase in the share of investment in 2020 was in part due to the increase in expenditure and in part due to the impact of Covid-19 on GNI* growth in 2021.

The overall Capital allocation for 2021 is almost €5.5 billion or 119% higher than the amount allocated in 2017. In other words, capital allocations have more than doubled under NDP. As shown below in Table 1, exchequer capital investment increased by 30 percent, 19 percent and 38 percent over 2018 to 2020. This was significantly higher than general increases in public expenditure over that period and significantly higher than economic growth over that period.

While the large annual increases over recent years were in part a return to the level of public investment present before the financial crisis, similar increases are unlikely to be sustainable over the coming years due to a number of constraints detailed in this paper, in particular on the supply side as examined in the next section.

Table I: Planned NDP Investment as published in February 2018, alongside updated ceilings

€ billion*	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Original NDP Exchequer Investment Ceilings	6.0	7.3	7.9	8.6	8.9	9.4	10.0	10.5	11.0	11.6	91.0
Updated Exchequer Investment Ceilings*	6.0	7.2	9.9	10.2	-	-	-	-	-	-	-
Core Investment	6.0	7.2	8.2	9.8	-	-	-	-	-	-	-
Once-off Covid and Brexit Measures	-	-	1.7	0.4	-	-	-	-	-	-	-

*Note: The original NDP Exchequer Investment Ceilings in row two are those published in the NDP in February 2018. The updated investment figures for 2018 and 2019 are the audited Appropriation Account outturn figures. 2020 and 2021 are the latest estimate figures, including both “core investment” and the once-off additional funding made available for Covid-19, stimulus and Brexit measures. Audited outturn figures for 2020 will be available in Q4 2021.

Section 2:

Supply Side Constraints

2.1 Overview

This section examines a broad range of elements in relation to the supply side constraints when it comes to delivering public investment, including public sector capacity and construction sector capacity. The focus here relates primarily to the construction of infrastructure which makes up the majority of public investment, as opposed to other elements such as enterprise supports which tend to be demand led.

Key findings are as follows:

- Increasing levels of capital carryover in recent years may indicate challenges for Departments in spending the recent large increases in capital expenditure with little lead-in time for the necessary appraisal, planning, consultation design, procurement etc. Planned, consistent and manageable increases would allow the necessary time for these processes while also giving Departments the opportunity to further increase their delivery capacity.
- A range of measures are underway to increase public sector delivery capacity including establishment of a Commercial Skills Academy, an Infrastructure Network, an EU report on the capacity of the public sector and plans to establish a new Planning and Environmental Court.
- Construction sector capacity constraints were clearly evident in 2019 with elevated tender price inflation and a plateauing of employment in the sector. While there has been a fall in private investment due to the Covid-19 pandemic, this is likely to be short-lived. Construction sector capacity may therefore be a constraint on public and private investment going forward.
- Industry is being supported to expand its capacity with three broad policies of: communicating for industry confidence, securing the skills pipeline, and driving innovation.

2.2 Public Sector Capacity Constraints

Even when functioning at maximum efficiency, there is a limited amount of investment that the public sector has the capacity to deliver in any given year, regardless of how much funding is made available.

All investment typically requires administration, appraisal, planning, design, procurement etc. All of these processes take time and expertise. When working at maximum capacity and efficiency, public sector staff will eventually reach some limit when tasked with delivering such investment.

In addition to delivery, the planning of investment projects may be appealed to An Bord Pleanála as well as to the Courts, and both of these institutions also have their own capacity constraints at any given point in time.

This delivery capacity is relatively fixed in the short-term, which naturally limits the ability to ramp up public investment in the short-term. However, it is possible to increase the capacity of the public sector in the medium-term through the improvement of processes, the reallocation of resources and the hiring of additional staff and expertise in order to build delivery capacity.

A clear risk of investing in excess of what the public sector has the capacity to deliver in the short-term is that shortcuts have to be taken, less appraisal and planning is carried out, with the end result being the inefficient delivery of investment and poor value for money for the public.

Identifying an exact level of public sector capacity is not practical given the complexity of the issue. The composition of the public investment will dictate the level of resources required for delivery in terms of time, staff and experience. Some investment may require less resources in terms of administration and planning from the public sector

to deliver, such as maintenance spending or grant funding. The larger and more technical a project becomes, e.g. public transport projects or hospitals, the more time and resources that will be required to plan and deliver these.

2.2.1 Public Expenditure Capacity

In terms of public sector capacity to deliver capital expenditure, a metric worth considering is the use of the annual capital carryover facility. Up to 10 percent of the total capital allocation in a given year can be carried over and used in the following year. This is a useful tool for expenditure management as it provides a degree of flexibility and acts against wasteful use of expenditure at the end of the year. Capital carryover is typically between 1 and 2 percent of total allocations. Increases above this level might indicate greater challenges for Departments in spending their capital allocations which could in part be due to increasing capacity constraints.

Table 2: Capital Carryover

€ million	2016	2017	2018	2019	2020
Capital Carryover	74	70	93	215	710
% share of total capital expenditure	1.9	1.5	1.5	2.9	7.2

Source: DPER

Table 2 shows that in 2019 capital carryover was well above previous years at 2.9 percent, possibly indicating increasing capacity challenges for Departments in delivering their capital expenditure allocations.

In 2020 the overall total of capital carryover was almost €710 million or 7.2 percent of the 2020 estimates, including the additional allocations announced during the year for Covid-19 and stimulus measures. D/ETE, Health, Transport and Housing sought to carryover approx. €540 million into 2021. The level of carryover is significantly higher than previous years, in part due to a backdrop of delays occurring on projects due to Covid-19 and the commencement of stimulus projects which will run over into 2021 when payment will fall due.

However the fact that total capital expenditure increased by over 30 percent between 2019 and 2020, including an in-year increase with the July Stimulus, may have played a roll.

In addition, the recently published DPER *Supporting Excellence* report identifies organisations with good delivery capacity and

more established asset delivery functions, such as TII, the NTA, Irish Water, the OPW, the HSE and larger local authorities. These Entities are likely to have a greater level of capability and the focus on longer-term capacity challenges is likely to feature in other sectors.

Also, the unprecedented level of carryover from 2020 is somewhat attributable to a slowdown in construction as a result of Covid and the additional funding provided in 2020, including for stimulus measures introduced to help support economic resilience and recovery. Planned, consistent and manageable increases would allow the necessary time for Departments to develop and process the required appraisal, planning, consultation design, procurement etc. while also giving Departments the opportunity to further increase their delivery capacity.

2.2.2 Developing Public Sector Capacity

Departments, Agencies and Public Bodies are constantly seeking to ensure that they have the necessary resources in place in terms of staff, structures and skills to deliver on their commitments. To support this there are a number of ongoing measures which seek to further develop the capacity of the public sector over the coming period. These include the establishment of a Commercial Skills Academy, the establishment of an Infrastructure Network for those involved in the delivery of public infrastructure, the continued development of the Irish Government Economic and Evaluation Service (IGEES), and the commissioning of the *Supporting Excellence* report through the EU Structural Reform Support Programme to review the capability of the public service to deliver the capital programme. Further details of these initiatives are detailed below.

The Commercial Skills Academy was established in 2019 at the Office of Government Procurement in order to enhance the commercial delivery capabilities of key spending departments and public sector bodies. It does this through a focussed training programme for public service managers to gain an understanding of key issues, commercial skills, and best practice approaches for effective project delivery throughout the entire lifecycle of the project. Public procurement projects are often complex and even the best planned projects can be impacted by unforeseen circumstances. In this context, public servants need to be armed with commercial skills to address these issues in a timely and effective fashion. The Commercial Skills Academy, with input from Construction Policy and staff across the Public Service, have developed a suite of Training suitable for staff involved at all levels. The Training is organised on a tiered system, from Foundation

level to Experienced. Recent Masterclasses have been on topics such as: *The Use of Framework Agreements in Construction; eTendering; and Covid and Brexit.*

Following the National Investment Office's first international conference in January 2020, an infrastructure network for those working in public infrastructure delivery was established to:

- Provide a forum to communicate developments in public investment policy, governance, reforms, and innovation.
- Engage with expert colleagues in other public sector and delivery bodies to share best practice, issues, and solutions.

Two sessions of the "InfraNet" took place online in 2020 in July and November, titled, respectively, 'Recovery, Renewal and Review: Laying the Foundations' and 'Twin Tracks: Strategic Alignment of the National Planning Framework and National Development Plan – Challenges and Solutions'. A third event took place on 29 January 2021 on the climate challenge as it relates to public investment.

Since its establishment in 2012, the Irish Government Economic and Evaluation Service (IGEES) has been a key initiative in capacity building to support evidence-informed policy making in the Irish Civil Service. In March 2020, IGEES launched its Medium-Term Strategy 2020-22. IGEES has strengthened Civil Service analytical capacity by adding 150 policy analysts through its specialist recruitment stream since 2012. New recruits, together with existing Departmental resources, now form a strong cohort of over 200 policy analysts across the Civil Service. Recruitment of IGEES staff continually takes place to meet the demand for analysts in the Civil Service, with the total number of IGEES analysts in post increasing year on year.

As activity increased under the NDP, the National Investment Office commissioned a report through the EU Structural Reform Support Programme to review the capability of the public service to deliver the capital programme. The *Supporting Excellence* report sets out a number of capability challenges – listed in the table below - which are being experienced to varying degrees across the thirteen entities in the scope of the review. It identifies that these challenges are experienced most acutely by those entities and sectors who have limited experience in substantial capital programme delivery, or those who, through a hiatus of investment activity over a number of years, have had their expertise and resource base eroded. However, the capability challenges vary by sector and entity and they need to be better understood and addressed on this basis. The report proposes several solutions to the various challenges but recognises that there is not a "one size fits all"

solution and the need for supports and initiatives must be tailored to the entity, sector and industry challenges.

Box 1: Capacity Solutions

1. Addressing and tailoring supports across organisations with varying capability
2. Supporting major programmes
3. Applying industry expertise to governance and oversight
4. Attracting, retaining and developing people
5. Ensuring collaboration
6. Navigating macro constraints

The report also recommends that, when assessing the maturity of programme capability, a focus should be placed upon the sectors (and sector programmes) which do not currently have a singular asset delivery specialist but are forecasting increased activity and scale through their mandate under the NDP. In order to progress the issues raised, the report recommends that the National Investment Office convenes an action team comprising of internal/external experts to tailor and set out a roadmap for implementation of the proposed solutions in more detail.

Finally, the following are a number of planning and legal reforms due over the coming period which should help improve the efficiency of the planning system to be more efficient:

- a new Planning and Development Act;
- Reform and consolidation of Compulsory Purchase law;
- Establishment of a new Planning and Environmental Court;
- Better court case management;
- Strategic Management of cases by State;
- New S28 Planning Guidance;
- Increased training;
- Digital agenda including Myplan, E-planning, and Plan-it (ABP).

2.3 Construction Sector Capacity

This section seeks to assess a number of metrics relating to the capacity of the construction sector and its likely ability to sustainably accommodate any additional increases in public investment. To do this, the section examines indicators of construction sector capacity such as employment

and productivity, as well as examining indicators of capacity constraints such as cost inflation. This builds upon the BUILD Reports produced by the National Investment Office in 2019 and 2020 which highlighted capacity constraints arising in the construction sector, noting at the time that “potential risks and constraints are present in the form of cost inflation, limited sources of additional labour supply and stagnant productivity growth”.

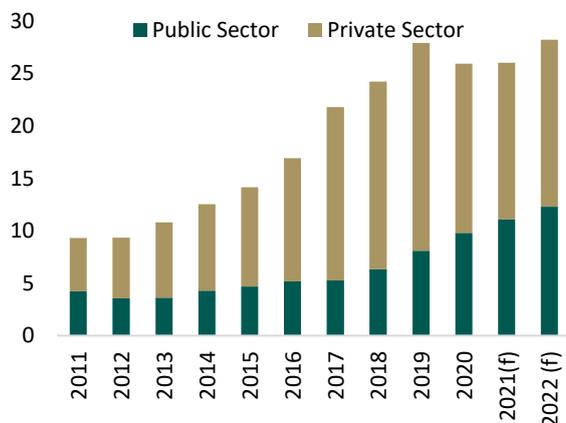
A fall in private investment as a result of Covid-19 has been projected for 2020 and 2021. This reduction in demand may have freed up construction sector capacity in the short run. However, with private sector investment likely to return to trend in 2022, construction sector capacity is likely to return as a constraint to the total level of investment possible in the medium-term.

2.3.1 Construction Investment

The breakdown of public and private investment is presented in Figure 2.1. Given the Covid-19 shock to the economy, private investment is estimated to have dropped by over 18.7 percent in 2020. A further drop of 7.5 percent in private investment is expected in 2021 with a recovery of 6.8 percent expected in 2022.

Public investment on the other hand has remained largely unchanged from planned levels. Any additional capacity in the construction sector, given the fall in private sector investment will likely only be short lived. Capacity constraints in the construction sector are therefore likely to be a key factor affecting the efficient delivery of the National Development Plan.

Figure 2.1: Level of Public and Private Investment in Construction



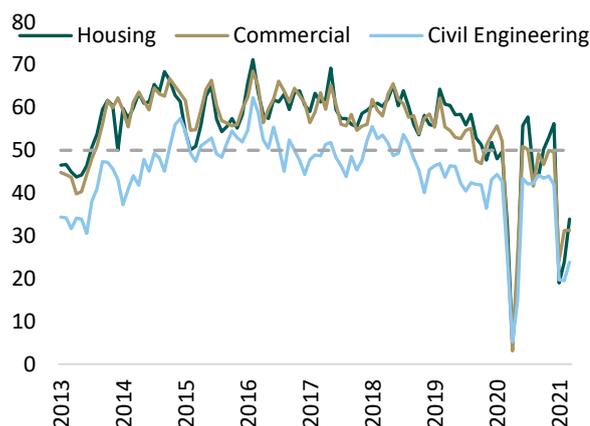
Source: CSO, Stability Programme Update projections and author calculations

The Ulster Bank Construction Purchasing Managers Index surveys select companies, providing an advance indication of sentiment in the construction sector. However, it should be noted that it is a measure of

sentiment rather than actual output. A reading of >50 indicates expansion (<50 indicates contraction).

The index rose to 52.3 in December 2020 but fell to 37.9 in March 2021. The implementation of strict restrictions in the new year caused a large fall in the index, which although rebounding slightly in March still represents a contraction. The Housing sector, Civil Engineering, and Commercial all contracted in March, albeit experiencing a smaller drop in sentiment than last January to stand at 19, 19.7, and 24.2 respectively in October.

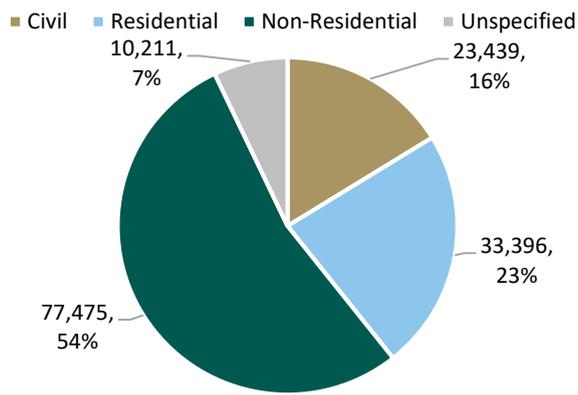
Figure 2.2: Ulster Bank Purchasing Managers Index



Source: Ulster Bank

Figure 2.3 shows the breakdown of employment by construction subsector in 2018 (the latest data available for this breakdown). Over half of all construction sector employment is in the non-residential sector which includes both public and private construction in education, health, commercial sector, industry, agriculture, tourism and sport. The second largest sector for employment is residential at 23 percent followed by civil at 16 percent. It is not known how much of non-residential employment falls into the commercial sector. Without significant increases in overall construction sector employment in the coming years (which seems unlikely, as discussed in the following section), it may be necessary for construction employment to shift from the likes of the commercial sector to the residential and public infrastructure sector in order to achieve the goals of the National Development Plan and the level of housing output necessary to meet demand. The policy tools to achieve this shift in activity within the construction sector could include taxation and planning alongside the increased expenditure by Government.

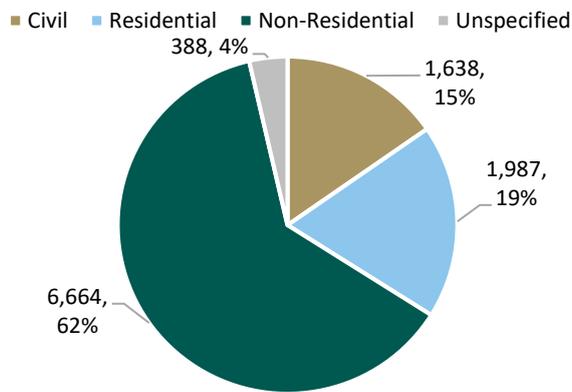
Figure 2.3: 2018 Employment by Sub-Sector



Source: CSO

Like employment, Figure 2.4 shows that the majority of the gross value added in the construction sector comes from non-residential construction.

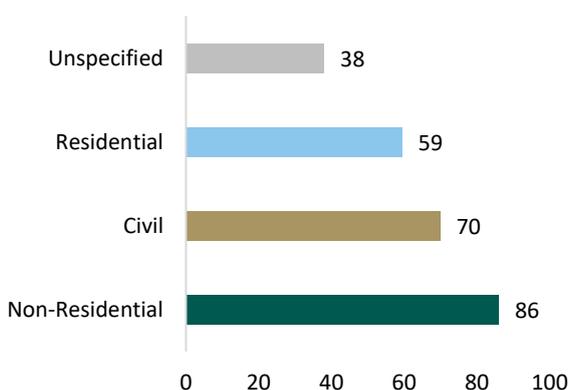
Figure 2.4: GVA by Subsector 2018



Source: CSO

Figure 2.5 shows gross value added per person employed by construction subsector. This gives an indication of productivity levels in each sector. It is interesting to note that using this measure, civil projects move into second highest position, overtaking residential construction.

Figure 2.5: 2018 GVA per Employed person by Construction Sub-Sector (€1,000)



Source: CSO

2.3.2 Construction Labour Market

The construction sector labour market is an important consideration when assessing the capacity of the sector.

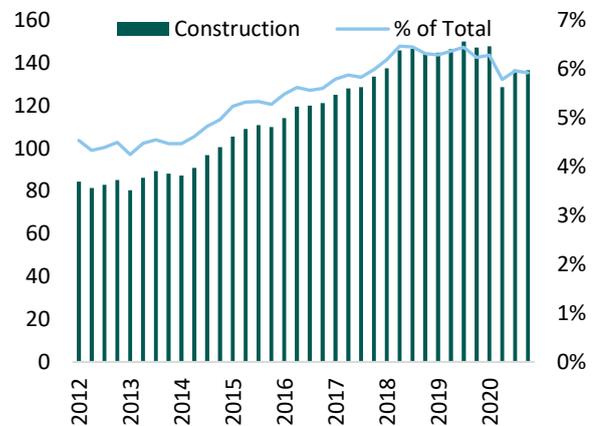
As a share of total employment, the construction sector has plateaued between 6.2-6.4 percent between Q2 2018 and Q1 2020. It then fell to 5.78 percent in Q2 2020 and slightly increased since then to stand at 5.91 percent in Q4 2020.

For the construction sector in Ireland to reach the EU average of 6.8 percent of employment it would have required an additional 20,000 workers shifting from other sectors to the construction sector to bring it to over 156,000 workers in Q4 2020.

Combined with factors in recent years such as low unemployment and high housing costs facing foreign workers entering the market, the ability to increase employment in the sector has been constrained.

Figure 2.6 presents total construction sector employment and its share of total employment. With the impacts of Covid-19 hitting in 2020, employment in the construction sector fell by 7.2 percent in the year to Q4 2020 to stand at 136,400.

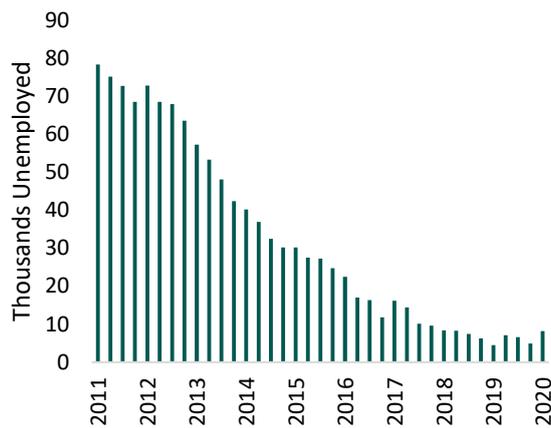
Figure 2.6: Construction Sector Employment



Source: CSO

Construction Sector unemployment fell consistently from 2011 and stood at 8,200 in Q1 2020. While this does not fully capture the impact of the Covid-19 crisis, this data does suggest that there was little excess capacity in the sector before Covid-19.

Figure 2.7: Construction Sector Unemployment



Source: CSO

The Beveridge Curve maps the unemployment rate against the vacancy rate in the construction jobs market and is shown in Figure 2.8. As a rough guide to the curve, the bottom left quadrant represents an efficient labour market where unemployment is low and vacancies are being filled quickly. Pre-Q4 2008 represents this well, as well as Q3 2016. Points in the bottom right quadrant indicate recession – the unemployment rate is high and job vacancies are low.

Figure 2.8: Construction Sector Beveridge Curve



Source: Department of Finance

The top left quadrant, with low unemployment and high vacancies, usually indicates a labour shortage rather than a skills shortage. There simply is not enough labour to meet demand. In Q2 2018, vacancy rates were at their highest and unemployment rates at their lowest since 2008. In Q1 2020 vacancy rates started to drop and unemployment started to rise. This may have suggested a return to a more efficient labour market in the short-term due to falls in private investment in the wake of Covid-19 taking heat out of the market.

Table 3: Built Environment Employment 2019 with 2030 Estimates

	2019	2030 Central Forecast	2030 Upper Bound	2030 Lower Bound
Built Environment Employment (000)	205	203	281	125
% of total labour force	9	7.5	10	4.5

Source: EGFSN 2020 Report on Construction Sector

Table 3 shows the number of people employed in the Built Environmental Sector¹ and demand forecasts out to 2030. These forecasts are based on assumptions of population and GNI* growth. It is also assumed that the impact of Covid-19 on the economy will have long-term consequences similar to the Global Financial Crisis in 2008.

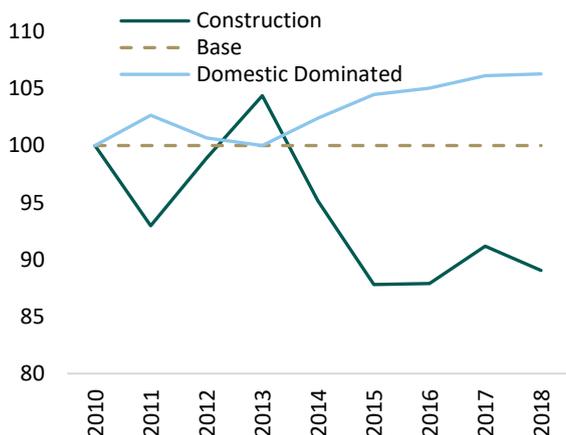
It is forecast that total Built Environment labour demand will be 203,020 individuals in 2030. It is vital that this demand is met if the public infrastructure targets are to be met.

Although the overall central estimate figures for the numbers that would be employed in the sector in 2030 are not significantly greater than the figures employed currently in 2020, according to the EGFSN Report the outlook from within the industry itself on its ability to meet this level of employment is pessimistic – particularly with the challenges of attracting new entrants into trades, and given that the changes in contracting and procurement do not incentivise or facilitate firms to take on apprentices.

Figure 2.9 shows that productivity growth in the Irish construction sector has been quite volatile between the years 2010 and 2018. Growth in productivity over the 2011 to 2013 period was eroded in 2014 and 2015 and while there was growth in 2017, over half of this growth was erased in 2018. Over the same period, productivity in the domestic-dominated sectors of the Irish economy grew by approximately 6 percent while the productivity of the foreign dominated sectors of the economy grew by over 106 percent.

¹ Includes the traditional construction sector plus those who provide inputs into the sector.

Figure 2.9: Construction Sector Labour Productivity



Source: CSO

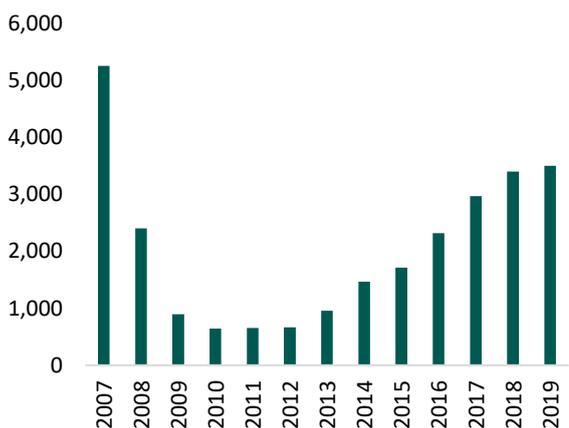
2.3.3 Education and Skills

As investment increases over the coming years, it is vital that the sector has the necessary pipeline of skills to produce the output required.

The necessary skills in the sector are generally produced through the apprenticeship system for the construction trades and through higher education for the construction professions.

In 2019, there was a total of 3,499 new construction apprentice registrations. This was an increase of 3 percent on 2018 and was the highest level of new construction apprentice registrations since 2007. This is shown in Figure 2.10.

Figure 2.10: Number of New Construction Apprenticeship Registrations

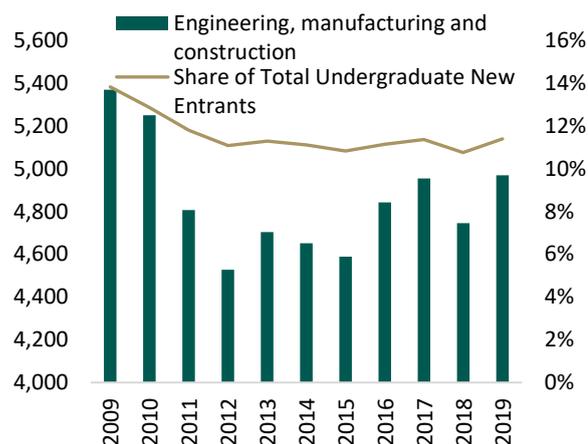


Source: HEA

Figure 2.11 presents trends in entrants to engineering, manufacturing, and construction courses in third level institutions.

There were 4969 undergraduate new entrants in these subjects in 2019/20, representing 11.4 percent of all undergraduate new entrants in 2019/20. The total increase was 16.4 percent for the year.

Figure 2.11: Undergraduates in Engineering, Manufacturing, and Construction.



Source: SOLAS

2.3.4 Costs

The Wholesale Price Index for Building and Construction Materials provides a general indication of price trends in the sector. Cost inflation in the construction sector may be a sign of capacity constraints.

Actual transaction prices are collected for materials purchased by construction and civil engineering firms. The price indices reflect an 'average' over a mixture of products from many companies throughout the country. They also reflect prices for both long-term and short-term contracts and for high and low volume civil engineering works.

Figure 2.12: Construction Sector Materials Wholesale Price Index (2015=100)



Source: CSO

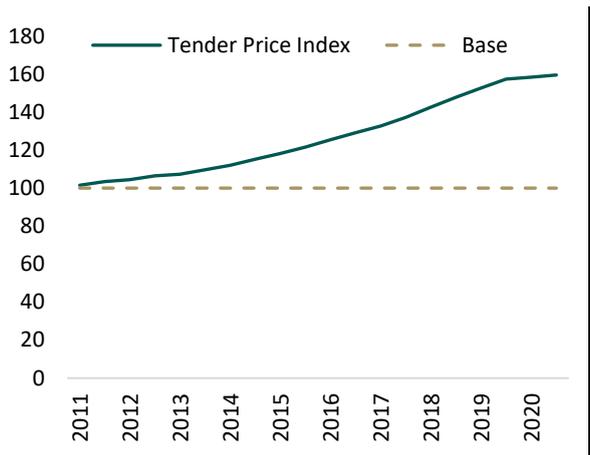
From February 2016 to February 2021 the Wholesale Price Index for Building and Construction Materials has increased by almost 6.9 percent in total.

As shown in Figure 2.12, the Wholesale Price Index for Building and Construction Materials increased by 0.6 percent in the year up to February 2021. This is a relatively low level of inflation.

Another metric to consider is the Construction Tender Price Index, which is based on tender returns for non-residential projects. It is based on predominately new build projects with values in excess of €500,000 across all regions. The Index is therefore a measure of average price increases across differing project types and locations.

In recent years there has been an elevated level of inflation in the Irish construction sector. In 2019 the Construction Tender Price Index surpassed its previous peak from 2007. However, the rate of inflation slowed significantly in 2020 to 1.3 percent.

Figure 2.13: Construction Tender Prices



Source: SCSl

Figure 2.14: Average Hourly Earnings (Seasonally Adjusted)



Source: CSO

Figure 2.14 shows the average hourly earnings of construction workers. After almost completely recovering in quarter 3 from the dip of nearly 5 percent in the second quarter of 2020 with the onset of the Covid-19 crisis, average hourly wages fell 1.3 percent in Q3. This remains below the peak in Q1 2020 of €22.28 per hour. If demand for construction labour continues to increase over the coming years the increasing cost of labour may have consequences for the sectors competitiveness.

2.3.4 Increasing Construction Sector Capacity

As with any other sector of the Irish economy, the construction sector itself is active in seeking to attract the capacity it requires to deliver on demand in the market.

This is supported by Government through a number of policies to ensure a sustainable and efficient construction sector.

Communicating for industry confidence

The Construction Sector Group is the forum through which Government Departments and industry representatives engage on a regular basis. The group meets every quarter and all meeting agendas and minutes are published on www.gov.ie. This will continue to be an important channel for communication.

More generally in terms of communication, the Project Ireland 2040 Investment Tracker provides those involved in the delivery of infrastructure with a clear signal on what construction is in the pipeline. This can imbue the industry with the confidence to plan, invest and hire to expand capacity. The latest version of this tracker was published in December 2020. This was supplemented in January 2020 with the Prospects Report detailing the fifty largest projects in the investment pipeline. Both of these information sources will be updated following the review of the NDP.

Efforts have also been made to attract overseas capacity through the promotion of Ireland’s infrastructure project pipeline at the World Expo and as part of Ireland’s annual trade delegations for St. Patrick’s Day. However the potential for this as a source of additional capacity seems limited due to a number of factors, such as high accommodation costs in Ireland and the fact that construction capacity constraints have been a common global issue in recent years.

Securing the skills pipeline

The Expert Group on Future Skills Needs published their research, *Building Future Skills Needs The Demand for Skills in Ireland’s Built Environment Sector to 2030* in September 2020. A range of actions will be undertaken on foot of this report to help the industry meet its skills requirements. This will be monitored by quarterly meetings of an implementation group supported by the Department of Enterprise, Trade and Employment. Where specific skills have proved difficult to source within the State and wider European Economic Area (EEA), changes were made for 2020 by the Minister of Enterprise, Trade and Employment to the employment permit system to allow employers to hire a non-EEA national in more construction occupations subject to the Employment Permits Acts and Regulations.

The Department of Further and Higher Education,

Research and Innovation has produced a new action plan for apprenticeships which will set out new ways of structuring, funding, and promoting apprenticeships with a target of 10,000 new apprentice registrations per annum by 2025. New apprenticeship programmes in scaffolding (level 5), roofing and cladding (level 5) and advanced quantity surveying (level 9) are due to launch in 2021. SOLAS will be supporting a careers campaign for the built environment sector, including the broad range of opportunities available from the Project Ireland 2040 pipeline. An 'Apprenticeship Jobs' platform was launched on www.apprenticeship.ie in April 2019 to enhance the visibility and accessibility of apprenticeship job vacancies, and to assist small companies to advertise apprenticeship jobs to a wide audience. A dedicated Near Zero Energy Buildings training centre is now established in Wexford and is currently providing 10 NZEB training programmes to existing construction workers in areas such as plumbing, electrical, bricklaying, carpentry and plastering. A further four ETBs are planning to have centres of excellence up and running in the first quarter of 2021.

While apprenticeship supports the development of skills in the craft trades areas, education and training relevant to other skills integral to the operation of the construction sector is delivered through non-apprenticeship further and higher education and training, as well as through specific activation programmes such as Springboard, the Human Capital Initiative and Skillnet Ireland. Skillnet Ireland also supports the construction sector through two national Construction-specific Skillnet training networks, as well as through multiple regional Skillnet training networks that assist construction businesses located in their respective regions.

Measures to ameliorate the impacts of Covid-19 on the continued skills pipeline include the Apprenticeship Incentivisation Scheme, which provides an employer grant of €3,000 payable over two years to support employers who take on and retain apprentices. Initially funded through the July Jobs Stimulus, the payment has been extended to include employers who take on apprentices until mid-2021. Under the July Jobs Stimulus, €500,000 was also allocated to support the expansion of skills development for the National Retrofitting Programme and 2,000 additional places were also funded across Springboard and the Human Capital Pillar 1. €8m has been allocated in 2021 to support retrofit-specific skills which will provide for up to 500 places on new specialist retrofitting training courses targeted towards unemployed persons in addition to the expected increase of 400 places in programmes facilitating upskilling of experienced construction professionals. This will increase the number of learners in retrofit-specific programmes to over 1,500 per annum.

It is important to note, however, that increasing the supply capability of the construction sector over the next ten years to cope with any increased investment will likely require labour to be attracted

away from other sectors in the economy.

Driving productivity improvement

In close consultation with the CSG, a wide-ranging analysis of productivity in the sector was undertaken over the course of 2019 in order to identify actions to address the issue. This work informed the Building Innovation in 2020 Report which was published in June 2020 and is currently available on gov.ie. The report identified three important themes which, if addressed, can help improve profits, wages and output for the industry, and thereby provide value for money in the delivery of Project Ireland 2040. These include:

1. The need for the industry, particularly SMEs and small firms, to increase investment in innovation and technology in order to spur the next wave of growth based on a foundation of digital adoption by both clients and contractors.
2. The need for ongoing regulatory reform by Government of public procurement, environmental, labour and other areas in order to streamline and assist in achieving competitiveness and sustainability.
3. The need to increase certainty and visibility of the pipeline of projects to provide industry with confidence to invest and individuals with the opportunity to choose a career in the built environment.

In support of this, an Innovation and Digital Adoption Team has been established by industry and Government to deliver on the seven priority actions identified in the Building Innovation report under that theme.

In December 2020, as part of that process, a competitive, challenge-based grant call was launched by the Department of Public Expenditure and Reform to deliver the Build Digital Project with up to €2.5 million in public funding over the next five years. The Build Digital Project will aim to ensure that world class digital practices, which already exist in certain elements of the Irish construction sector, are adopted throughout the industry and supply chain in order to achieve a more innovative sector from top to bottom. The project will provide guidance and leadership on the necessary digital tools, standards, approaches and training required by all across the construction sector, in particular the small- and medium-sized firms who may have yet to realise the full benefits of digital approaches. Additional actions will also be progressed this year with the support of industry such as Enterprise Ireland's examination of the potential for establishing a Technology Centre for Construction and a Modern Methods of Construction facility.

The CSG has been invaluable in the building up

of strong networks between the public sector and the private sector. It has created a focus on alleviating some of the key challenges faced in the construction sector and how public investment projects are brought to market. The

National Investment Office will continue to use the CSG as an important vehicle to drive the changes required for the sector to thrive.

Section 3:

Drivers of Demand for Public Investment

3.1 Overview

The demand for public investment in Ireland is significant and relatively well established, with fundamental drivers of demand including maintenance, demographics, the spatial pattern of development, economic growth and policy choices across different sectors. However, since the launch of Project Ireland 2040 there have been some notable developments in certain drivers of demand, namely from Covid-19 and changes in Climate Change policy. This section examines the overall trends in the drivers of demand for public investment.

Key findings are as follows:

- Based on international estimates, the broad needs to cover maintenance costs alone are between 1 and 3 percentage points of GDP. In 2016 IFAC estimated that depreciation costs for the stock of public capital in Ireland have averaged some 2.1 per cent of GNP since 1995. In 2021, this would equate to approximately €4 billion based on GNI*.
- In terms of demographics, the ESRI modelling indicates an average annual increase of approximately 0.74 percent out to 2040, leading to an increased demand for infrastructure.
- The latest economic projections indicate that the economic recovery from Covid-19 will result in real GDP growth of 4.5 percent and nominal GNI* growth of 3.6 percent in 2021, leading to an increased demand for infrastructure services to support economic activity. Longer-term economic projections indicate continued growth over the period 2021-2025 of 5 percent of GNI*, dropping to 2.1 percent of GNI* over the period 2026-2030
- The impacts of Covid-19 will take time to assess. However, research by ComReg found that the figure of those working remotely from home has more than doubled to 61 percent. Maintaining higher levels of remote working in the future may result in a decreased demand for transport infrastructure/services with positive implications for the reduction of carbon emissions.

3.2 Drivers of Demand

There are many complex and interrelated factors which drive demand for public investment. While drivers of demand differ by sector, a number of the key primary drivers are discussed here at an overarching level. Individual sectors, Departments, Agencies and Commercial Semi-State Companies examine these drivers in significant detail as they apply to their individual sectors, the objectives of their sectoral strategy and any investment decisions that flow from those.

The drivers of demand as they relate to the different sectors of Ireland's infrastructure were set out in the 2017 paper produced by members of the Irish Government Economic and Evaluation Service titled "Strategic Public Infrastructure: Capacity and Demand Analysis". That paper is being updated as part of the review of the NDP.

In relation to non-infrastructure public investment, for example capital expenditure relating to agriculture, R&D and business supports, these tend to be driven by similar drivers of demand but with a larger influence from the sectoral policy, strategy and targets.

3.4 Maintenance

The IMF (Well Spent, 2020) have found through country examples and empirical evidence that the benefits associated with maintaining and renovating assets include longer asset life spans, reduced fiscal costs in the medium- and long-terms, and economic and social benefits for users.

Expenditure on maintenance alleviates the gradual wear on infrastructure assets. Underfunding maintenance in the short-term will also lead to greater costs in later years. This means it is more economical to spend on maintenance when the condition of the asset is relatively good.

The IMF's Government Finance Statistics Manual 2014 (page 222) recommends a distinction be drawn between repairs and maintenance on one hand and major renovations, reconstructions or enlargements of existing fixed assets on the other, with the latter recorded as the acquisition of fixed assets or capital investment.

One method of giving a crude top-down estimate of maintenance requirements is based on the rate of depreciation of assets within the public capital stock. Like most countries, Ireland's government still uses cash-based accounting, as opposed to accrual accounting, which necessitates the recording of depreciation of fixed assets. It should be noted that the Irish Government is on a pathway to adopting accrual-based accounting over the next number of years.

As noted by the IMF, "The question of whether governments are spending enough to maintain existing infrastructure can be complicated further by infrastructure being held by entities and institutions outside the government." In Ireland's case both water and road infrastructure are recorded on the government balance sheet, whereas gas, electricity, and telecommunications infrastructure are not recorded on the government balance sheet, sitting instead on the balance sheets of public or private companies.

One of the key recommendations of the IMF's 2017 Public Investment Management Assessment Report on Ireland was to increase the share of the budget directed toward maintenance and rehabilitation expenditure to prevent further degradation of the existing capital stock.

The estimated needs to cover maintenance costs are significant. Rozenberg and Fay (2019) estimates that between 1 and 3 percentage points of GDP of annual maintenance spending will be needed to reach the Sustainable Development Goals in key infrastructure sectors by 2030. In 2016 IFAC estimated that depreciation costs for the stock of public capital in Ireland have averaged some 2.1 per cent of GNP since 1995. In 2021, this would equate to approximately €4 billion based on GNI*.

The annual steady-state cost of asset renewal in the Irish transport sector alone has been estimated at €1.6 billion, with the cost attributable to the Department of Transport estimated at €1.3 billion.

Table 3.1: Estimates of Maintenance Funding Demand

Sector	Annual Maintenance Funding	Rehabilitation or Replacement
Roads	5-10 %	Every 20-30 years
Hospitals	5-8 %	Every 20-30 years
Schools	4-6 %	Every 30-50 years
Public Buildings	4-6 %	Every 30-50 years
Water	4-8 %	Every 20-30 years

Source: IMF Well Spent Report 2020

3.3 Demographics and Spatial Development

Changes in the demographics of a country have a direct impact on the demand for infrastructure. Increases in population can result in an increased demand for housing, education, health, transport etc. The age profile of a population also has an impact on infrastructure demand, for example research suggests that older people are less likely to use peak-time transport and energy services. Variation in household size will have implications for infrastructure. In general, larger households use less energy and water per capita. A change in behaviour towards smaller-sized household formation would also require a greater number of houses in order to provide for the same population.

The demographic projections which underpin Project Ireland 2040 are based on a demographic and econometric model developed by the Economic and Social Research Institute (Morgenroth, 2018). As the projections relate to the longer term, they are indicative of what levels of growth can be expected.

Population projections undertaken for national spatial plans in the past have been accurate in projecting long-term national population growth to within a few percentage points of the actual outcome. Unlike previous projections, based entirely on demographics, the ESRI work undertaken for Project Ireland 2040 also factored in econometric data, including employment, jobs and house prices and modelled the spatial distribution of the projected population.

Initially, the ESRI modelled a continuation of current population and economic trends to 2040 as a 'business as usual' scenario. The ESRI Report indicates that under this scenario, Ireland's population will grow by just under 900,000 people, to almost 5.7 million people by 2040. This represents an average annual increase of approximately 0.74 percent.

This work has been further developed by the ESRI

with the publication of new research based on a regional demographic model which incorporates a novel treatment of internal migration, specifically where internal migration is related to economic conditions. This method projects the population at county level by gender and single year of age for each year based on the components of population change (fertility, mortality, internal and international migration).

The research considers a scenario, broadly consistent with the 50:50 City scenario developed in the National Planning Framework, where population growth is more evenly distributed between the East and Midland region and the rest of the country, and where counties with larger cities attract higher inflows, and this is achieved by changing relative regional economic conditions. The differences between the 'business as usual' scenario and the 50:50 City scenario gives an indication of where policy interventions could be used to influence the spatial distribution of economic activity and ultimately the population to achieve the targets associated with the 50:50 City scenario.

The scenario captures two potential policy objectives: aiming to have population growth more evenly distributed and less centred around Dublin and its surrounding area, and also taking advantage

of the potential efficiency gains from large agglomerations which imply more concentration. These policy objectives are represented in the National Planning Framework 2040 as National Policy Objectives 1a and 2a.

The ESRI research also illustrates the ageing of the population over the projection horizon. There are clear differences in the population age structure at a county level. Despite having a similar overall profile there are clear differences, with county Mayo having an older and more rapidly ageing population than Kildare, which has the youngest population. In 2040, the share of population over the age of 65 is projected to be 53 percent in Mayo compared to just 38 percent in Kildare. The demographic projections highlight both the ageing of the population in the near future and the regional differences in this process, which will have implications for many areas including the type of housing demand in the future.

IFAC modelling also confirms that Ireland's population is projected to age rapidly over the next thirty years. While the population aged 15 to 64 will remain around the same between 2020 and 2050 (+5 percent), the population of older people (65+) is projected to more than double (+124 percent).

Table 3.2: Population Projections, 2016-2040

	2016	2021	2026	2036	2040	Average annual % increase
State	4,761.9	5,031.6	5,203.1	5,549.2	5,663.0	0.74

Source: latest available ESRI modelling based on National Planning Framework

3.5 Economic Growth

Research has shown that as an economy grows there is generally an increased need for infrastructure. For example, increases in industrial output tend to require increases in inputs such as energy consumption, broadband, transport of goods and people, increases in water and waste water etc. This increase in demand can be met through an increase in the supply of the required infrastructure or potentially by increasing the efficiency by which the existing infrastructure is utilised through demand management policies. As noted by Fournier (2016), investment in infrastructure also has the potential to increase the short- and long-term economic growth of an economy².

The Irish economy suffered a severe shock in the first half of 2020, unique in origin and unprecedented in both speed and scale. The containment measures necessary to limit the transmission of Covid-19 had a

dramatic impact on Irish economic activity.

The Department of Finance noted that while the economic fall-out from Covid-19 was mainly the result of necessary containment measures rather than the direct impact of the virus itself, the economic and fiscal legacies of the pandemic will be felt for some time to come. This is especially the case in the labour market, where the unemployment rate could potentially remain relatively high for some time.

As detailed in the recent Stability Programme Update, GDP is forecast to expand by 4.5 percent in 2021 and 5 percent in 2022.

Nominal GNI*, a more useful indicator of domestic economic conditions, is projected to grow by 3.6 percent in 2021 and 7.6 percent in 2022.

Economic recovery over the second half of this year and into next year rests on the success of the vaccination programme and the assumption of an

² Fournier, J. (2016), "The Positive Effect of Public Investment on Potential Growth", OECD Economics Department Working Papers, No. 1347, OECD Publishing, Paris.

easing of public health restrictions. In a downside scenario the Irish economy would be approximately 4.5 percent smaller by the end of next year than it would under the baseline forecasts.

Table 3.4: Short term projections for nominal GNI* growth, percent change

	2020	2021	2022
Department of Finance	-3.3	3.6	7.6

Source: Stability Programme Update

In terms of demand for infrastructure, the latest economic projections for 2021 indicate that the economic recovery from Covid-19 is likely to result in an increased demand for infrastructure services to support economic activity.

In relation to long-term economic growth the Exchequer resources allocated for investment under the National Development Plan were based on projected nominal growth in national income (GNI*) averaging 4 percent over the period 2022-2027 (2 percent real and 2 percent inflation). This was consistent with long-term growth forecasts for the Irish economy produced by international organisations. It is also in line with projections from the ESRI's COSMO model.

3.6 Covid-19

The long lasting impacts of Covid-19 will take time to manifest and assess. Understanding what this means for public infrastructure requirements and investment decisions over the next ten years is challenging given the high degree of uncertainty. Initial international research indicates that while Covid-19 arrived in cities first, it was not any more deadly than in smaller towns or sparsely populated rural areas³. Offsetting forces may include: precautionary measures, access to healthcare and demographics which may contain it.

Some high level considerations are outlined here which may result in increased investment requirements in certain sectors, as well as decreased investment requirements in other sectors than would otherwise have been the case.

In the short-term there have been a range of direct investment requirements due to Covid-19. In the health sector in particular there was the requirement to provide additional capacity and space in acute health care settings. Many Local Authorities, particularly in urban areas have enlarged pavements, changed traffic systems and opened pedestrian-friendly streets to make more space for social distancing and outdoor dining.

In terms of medium- to long-term structural impacts,

an increased prevalence of people working from home may increase the demand for high quality broadband throughout the country. If that is the case it would reduce demand for public transport services in to city centre locations where offices may be located.

The Programme for Government commitment to introduce a working from home policy with a target of 20 percent of the workforce from 2021 onwards will be a key driver of the scale, location and nature of the public sector office accommodation to be provided into the future.

In July 2020, a survey conducted by Behaviour and Attitudes on behalf of ComReg found that 77 percent of respondents increased their broadband usage since the start of the pandemic. Prior to the pandemic, 29 percent of the workforce worked remotely to some extent – during the pandemic, this figure more than doubled to 61 percent. The survey also demonstrated increased broadband usage for general browsing, streaming video content, and shopping online and video calling. Many studies (such as by the WDC and NUI Galway) have highlighted an appetite for continued remote working or flexible working beyond the pandemic. At the same time, a recent IPUT report found that most people see value in being in the office at least some of the time, with 84 percent of all typically office-based employees saying that there are social and personal benefits to sharing a physical workplace with colleagues and managers, and 79 percent saying that there are professional benefits.

Over 75 percent of the population are served by broadband infrastructure delivered by private sector telecoms companies and paid for through user charges as regulated by ComReg. Public investment in broadband is generally limited to providing the service to households in rural and dispersed locations where it is not economically viable for the private sector to do so due to the significant costs. The National Broadband Plan which is currently being rolled out will provide broadband in these locations through public expenditure.

The ESRI has noted that in terms of any changes in internal migration, there is limited regional data available on the potential regional impact of Covid-19. Analysis by the Regional Assemblies of Ireland (2020) based on the regional distribution of the most exposed sectors to the economic disruption caused by Covid-19 suggests that the Northern and Western region may be the most impacted by Covid-19, with the Eastern and Midland region the least exposed. To the extent that Covid-19 has an uneven regional impact, especially in terms of employment opportunities and incomes, it may influence internal migration patterns. However, sufficient data and evidence is not currently available to assess the

³ Urban Density and Covid-19, Carrozzi, Provenzano, Roth (August, 2020), LSE Centre for Economic Performance

future direction of regional disparities. Lastly, if the current situation of increased remote working persists over time, it could alter the decision of workers to move internally or commute, with a stronger preference for counties with lower house prices over those with robust labour markets when the jobs can be performed remotely.

While remote working may provide many benefits and additional flexibilities for employers and employees, the continued Project Ireland 2040 strategy is to accommodate an additional 1 million people in Ireland through greater levels of compact growth, particularly in our cities. A central benefit of ensuring alignment with the NPF strategy is that housing, jobs and infrastructure can be delivered more efficiently and on concurrent basis, thereby improving the quality of life for Irish citizens. Increased remote working does not have to mean contravening the Project Ireland 2040 Strategy, It could facilitate the ambitious targets for 75 percent of growth to take place outside Dublin. There may also be a growing appreciation of the need for public infrastructure and amenities to be available within close proximity without the need for commuting between locations. However, there is a risk that the impact of Covid-19 could be seen to signal and facilitate increased dispersal of populations and development.

The full impacts of Covid-19 will of course take time

to assess. There are numerous relevant pieces of research underway which will help inform our understanding of the issue, for example the Office of the Planning Regulator is undertaking a research series report on the planning implications of Covid-19 which will examine the changing spatial relationships between home and the workplace as well as an analysis of policy responses.

3.6 Climate Change Policy

Climate action is another driver, given Ireland's goal of an average 7 per cent reduction per annum in greenhouse gas emissions from 2021 to 2030 . The relationship between climate action and infrastructure are perhaps less directly demand and supply relationships than is the case for demographics and economic growth. In the context of infrastructure, climate action plans are more related to the need to improve the stock and flow of infrastructure to contribute towards climate change commitments. There are specific policy plans in place for areas such as transport, energy and housing, while for other areas such as education and health, this may involve energy efficiency improvements to the stock and flow of public assets such as schools and hospitals.

Section 4:

Fiscal Constraints

4.1 Overview

The funding available for public investment is largely dependent on the overall medium-term fiscal strategy adopted by the Government. The Summer Economic Statement (SES) set out a medium-term strategy for returning the public finances to a sustainable position, while addressing our infrastructure challenges, continuing to enhance our public services and social supports, and supporting a balanced recovery from the pandemic. This strategy sees core public expenditure growing in line with the trend growth rate of the economy and a phased unwinding of the exceptional spending on temporary Covid-19 measures.

4.2 Fiscal Context

The onset of the Covid-19 crisis had a significant impact on the public finances. Indeed, the fiscal position entering the crisis was reasonably positive. A general government surplus of 0.4 percent of GDP was recorded in 2019 and a balanced budget in structural terms was delivered. However, last year, an Exchequer deficit of €12.3 billion was recorded, a €13 billion deterioration on the previous year, and an overall general government deficit of €18.4 billion for the year, or around 5 percent of GDP.

Thus far, the impact of the Covid-19 crisis has been particularly evident on the level of Voted Government expenditure. Last year Overall Gross Voted expenditure amounted to €85.3 billion. This is nearly €17.9 billion higher than expenditure in 2019 and almost €15 billion higher than the full year allocation set out in the pre-Covid Revised Estimates for Public Services 2020. This increase of almost €15 billion against the original 2020 expenditure allocations reflects the significant additional funding allocated to support citizens and businesses devastated by the impact of the pandemic and to provide the necessary funding to key public services to allow them to respond effectively to the crisis.

Indeed, across 2020 and 2021, Government will have made available over €31 billion for direct expenditure measures, with continued enhanced levels of Voted Expenditure required in 2021. Expenditure Report 2021 outlined a number of supports relating to the Covid-19 response and Brexit, with an amount of over almost €12 billion available to be drawn down by Government Departments. In addition, funding of approximately €3 billion is to be allocated,

including for measures in the Economic Recovery Plan.

Looking forward, as the economy continues to recover from the impacts of Covid-19, the management of voted expenditure should continue to be conducted in a manner that meets the Government's targets for fiscal sustainability and continued improvement in public service outcomes.

4.3 Medium-Term Expenditure Framework

To achieve this aim, a credible Medium-term Expenditure Framework, as laid out in the SES, needs to be pursued that returns the public finances to a sustainable budgetary position. As the economy returns to growth and employment is restored, it is important that the deficit is reduced year-on-year to underpin the sustainability of the public finances.

From an expenditure perspective this will require that two distinct policy goals are addressed in budgetary decisions over the medium-term: providing for the core budgetary programmes; and funding Covid-19 related policy responses.

In relation to Covid-19 related expenditure, these supports should be seen as timely, targeted and temporary supports that will be removed as the Covid-19 related economic impacts dissipate and employment levels increase. The careful, phased removal of these supports in a manner that supports recovery in the economy over the coming years is a necessary element in an improvement in the medium-term general government position. In this regard, as outlined in the SES, c. €7 billion is

to be made available for continuing the response to Covid-19 in 2022.

Outside of Covid-19 expenditure, core expenditure is to grow by €5.4 billion or 7.7 percent in 2021. This level of investment is in excess of the average annual increases of just over 6 percent observed in core voted expenditure in the three years up to 2020 and primarily relates to the decision to increase core Health expenditure by almost €1.9 billion or 10.7 percent in 2020.

Looking forward, the medium term expenditure strategy set out in the SES provides for a sustainable rate of growth each year in core expenditure of around 5% on average to 2025, in line with the trend growth rate of the economy. This increased overall expenditure provision sees significant rises in capital expenditure, with total capital spending, including that funded under the National Recovery and Resilience Plan (NRRP), growing by an annual average of over 8½ per cent, and reaching over €13½ billion in 2025.

Outside of the Exchequer, an additional funding option for infrastructure is through user charges. In circumstances when infrastructure is operated in a commercial environment, revenue from user charges may provide funding for the operator to carry out maintenance. For example, where a toll road is operated through a public-private partnership, the private partner may be contractually responsible for upkeep of the road using the revenue generated from tolls. As pointed out in the IMF's Well Spent Report (2020), this is relevant for subnational governments that might not have existing funding sources to support the upkeep of roads, though it requires the capacity to collect fees and to forecast user demand for the

service (Bova and others 2013; Potter 2013).

4.4 Capital Expenditure

In recent years a particular focus has been put on increasing the level of capital expenditure. Indeed, 2021 will see a gross voted core capital expenditure allocation of over €9.8 billion, which is an increase of over €1.5 billion compared to the allocation set out in REV 2020 and over double the 2017 pre-NDP level of €4.6 billion.

Looking forward, the medium term fiscal framework laid out in the SES sets out the scale of the significant additional funding available to be provided to capital projects, also taking into account wider expenditure considerations – in particular, policy commitments for expenditure priorities set out in the Programme for Government, such as the roll out of Slaintecare, and the hypothecation of revenues from the planned annual increases in Carbon Tax for agreed commitments on Housing Retrofit, Green Agriculture and addressing energy poverty.

Furthermore, outside of policy decisions, cost pressures arise each year relating to public service pay and pensions and areas of expenditure that are demand-led. These costs must be met from unallocated resources and limit the scope for the implementation of new policy initiatives.

Taking these fiscal constraints into account, alongside the other factors examined in this paper, section 6.7 sets out an approach to increasing public investment in the NDP.

European Union Fiscal Rules

Investment in public capital expenditure must be accommodated within the budgetary framework of the Stability and Growth Pact (SGP), which aims to safeguard public finances, achieve balanced budgets and sustainable levels of public debt over time. It should be noted that one of the European Union's first responses to the Covid-19 pandemic included a proposal by the Commission – subsequently endorsed by the Council – to activate the so-called “general escape clause” of the Stability and Growth Pact. In practical terms, Member States have been temporarily absolved of the annual requirement to be at, or moving towards, their medium-term budgetary objectives for 2020 and 2021. The EU Fiscal Rules do include a number of flexibilities to support increased public capital investment.

Capital Smoothing

In the first instance the Expenditure Benchmark does not factor in the full increase of spending in public Gross Fixed Capital Formation (new building such as schools, hospitals, social housing etc.), rather it averages the increase over 4 years (time t-3 to time t).

Investment Clause

Under the SGP, EU Member States subject to the preventive arm of the Pact can deviate temporarily from their adjustment path to the Medium-Term Objective (MTO) to accommodate increased levels of public capital investment. This is allowed provided that the member state meets a number of criteria, mostly importantly that GDP growth is negative or GDP remains well below its potential. In addition to the Investment Clause there is scope to deviate from the adjustment path to the MTO by utilising the Structural Reform Clause under the SGP. This allows a Member State to deviate by up to 0.5% of GDP subject to a number of criteria.

Section 5:

International Comparisons

5.1 Overview

This section gives a brief overview of international and Irish trends in investment (public and private), construction sector employment, and population growth. These comparisons will help in informing an appropriate level of investment in Ireland.

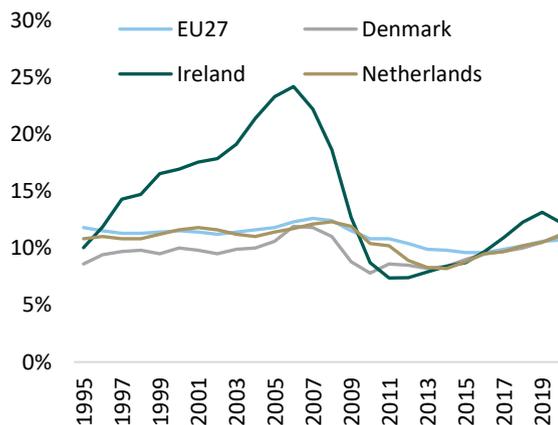
Key findings:

- In 2020 total private and public investment in construction in Ireland stood at 12.2 percent as a share of GNI*. This was above the comparator countries of The Netherlands (11.1), Denmark (11.2) and the EU27 average (10.7).
- Public investment (GFCF) in Ireland in 2020 stood at 4.4 percent as a share of GNI*, above The Netherlands (3.6), Denmark (3.6) and the EU27 Average (3.3).
- Compared to the EU27 average, Ireland has allocated a significantly greater share of its public investment towards housing (10.9 percentage points), social protection and community amenities. Ireland has allocated a significantly lower share of government investment than the EU27 average in defence (6.3 percentage points) and general public services (e.g. basic research).
- In 2020 construction sector employment in Ireland stood at 6.0 percent of total employment, above both The Netherlands (4.6) but below Denmark (6.3) and the EU27 average (6.6).
- Ireland's population is expected to grow by 10.8 percent between 2020 and 2030, which is significantly more than the EU27 average (0.32), Denmark (2.61), and The Netherlands (3.25).

5.2 Investment

As can be seen in Figure 5.1, total public and private investment in construction as a percentage of GDP/GNI* increased significantly in Ireland from 1997. At its peak in 2006, total public and private investment in construction in Ireland was around 12 percentage points above all three comparators of Denmark, The Netherlands and the average for the EU27. The share in Ireland decreased in 2020 from 13.1 to 12.2 percent due to Covid-19, but remained above the EU average.

Figure 5.1: Total Public and Private Investment (GFCF) in Construction as a Percentage of GDP (GNI*)



Source: Eurostat

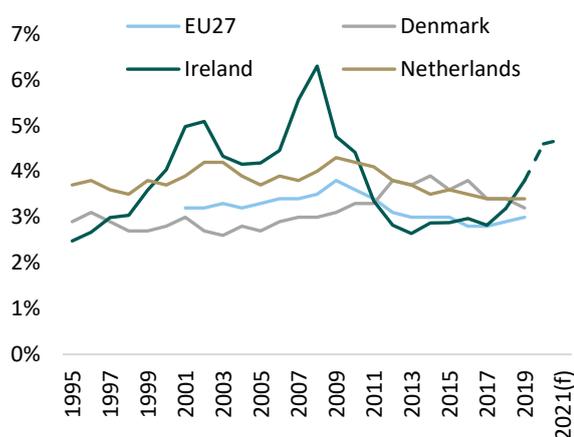
Figure 5.2 shows total public investment as a percentage of GDP/GNI* from 1995 to 2019. Total Irish government investment, like total investment, grew substantially up to 2008 when it reached a peak of 6.3 percent, nearly 3 percentage points above the EU27 average and 2 percentage points above The Netherlands. It then fell below the EU27 average to a low point of 2.6 percent of GNI* in 2013. It has since

rebounded and in 2020 stood at 4.4 percent of GNI*, above the EU27 average of 3.3 percent and those of Denmark and The Netherlands at 3.6 percent respectively.

It is important to note that while public investment in The Netherlands and Denmark was relatively constant during the sample period, Irish public investment varied widely.

In line with the National Development Plan, total public investment (GFCG) as a percentage of GNI* is expected to reach 4.6 percent in 2021. This will put Ireland significantly above our comparators.

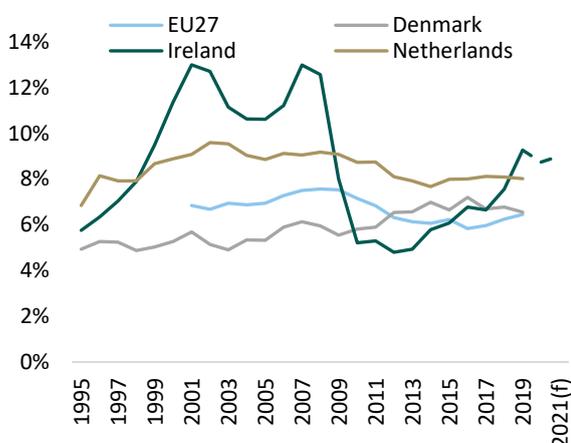
Figure 5.2: Total Public Investment (GFCF) as a Percentage of GDP (GNI*)



Sources: Eurostat

Figure 5.3 offers an alternative measure to Figure 5.2 with total public investment as a percentage of total government expenditure. A similar pattern to Figure 5.2 emerges. However, with this measure the peaks in Irish public investment were higher and longer lasting.

Figure 5.3: Public Investment (GFCF) as a Percentage of Total Government Expenditure



Source: Eurostat

Table 5.1: Investment and Construction Sector Employment in 2020

Country	Total GFCF in Construction as % of GDP/GNI*	Public GFCF as % of GDP/GNI*	Construction as a % of total employment
Hungary	15.5	6.4	8.2%
Norway	17.3	6.3	8.4%
Estonia	13.6	5.7	9.5%
Latvia	13.2	5.7	8.8%
Croatia	:	5.6	7.2%
Sweden	11.0	5.1	7.0%
Luxembourg	9.7	5.0	5.3%
Czechia	11.3	4.9	7.6%
Finland	14.7	4.6	7.4%
Romania	14.1	4.6	8.9%
Bulgaria	7.5	4.5	8.1%
Malta	12.4	4.5	5.9%
Ireland	12.2	4.4	6.0%
Poland	8.6	4.4	8.1%
Slovenia	9.2	4.2	6.1%
Lithuania	11.8	4.1	7.4%
France	11.7	3.8	6.7%
Denmark	11.2	3.6	6.3%
Iceland	12.5	3.6	6.6%
Netherlands	11.1	3.6	4.6%
Slovakia	8.7	3.5	9.1%
Austria	11.7	3.4	8.2%
EU27	10.7	3.3	6.6%
Euro area - 19	10.7	3.1	6.2%
Greece	3.8	3.0	3.7%
Cyprus	11.6	2.9	10.6%
Belgium	11.9	2.8	6.7%
Germany	11.7	2.7	5.6%
Italy	8.2	2.7	6.0%
Spain	9.8	2.5	6.5%
Portugal	10.6	2.2	6.4%

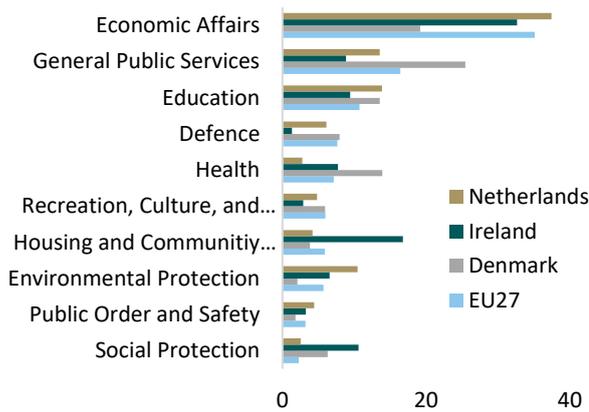
Source: Eurostat and CSO

Figure 5.4 shows how Ireland has allocated its capital expenditure over the last 25 years (Average 1995-2019) in comparison to the EU27, Denmark, and The Netherlands. Ireland has allocated significantly more of its public investment towards social protection and in particularly housing and community amenities. Ireland has allocated significantly less capital than the EU27 average for defence and general public services (e.g. basic research)⁴. The two top categories for Ireland are economic affairs (e.g. transport)⁵ (32.6 percent) and housing and community amenities (16.7 percent), making up just short of 50 percent of total public investment in Ireland. The next biggest share, social protection makes up 10.6 percent of total government investment in Ireland.

⁴ Includes foreign aid, basic research, public debt transactions

⁵ Includes Transport, communication, fuel and energy, agriculture, forestry, fishing and hunting, and general economic, commercial and labour affairs. Full subsector breakdown on Eurostat.

Figure 5.4: Government GFCF by Sector, Percentage of Total (Mean 1995-2019)



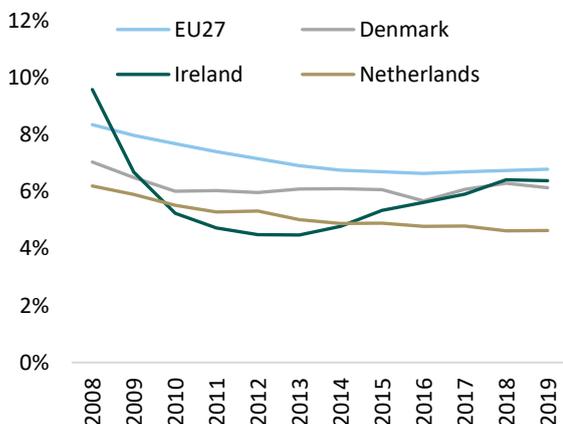
Source: Eurostat

It is important to note that much of the investment data above is financial in nature (e.g. expenditure and capital stock) and as such should only be seen as indirect measures of Ireland’s infrastructure. This data does not represent the infrastructure outputs delivered or the value for money achieved from the investment.

5.3 Construction Sector

Construction sector employment is a key indicator for the capacity of the construction sector to deliver projects. Figure 5.5 shows construction sector employment as a percentage of total employment. Like both public and private investment, construction sector employment in Ireland has been quite cyclical. From a peak around 2006 to 2008, construction sector employment fell significantly from above our comparators to below at a low of 4.47 percent in 2013. This rose to 6.38 in 2019, above both The Netherlands and Denmark but still below the EU27 average.

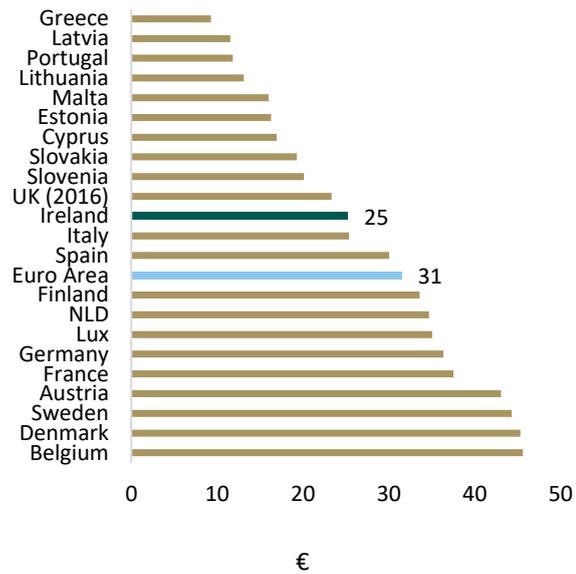
Figure 5.5: Construction Sector Employment as Percentage of Total Employment



Source: Eurostat

Figure 5.6 provides a measure of construction sector productivity across European countries, gross value added per hour worked. As discussed in Section 3, the Irish construction sector scores poorly on productivity measures relative to the domestic-dominated sector. This is also true with international comparisons. Ireland’s construction sector is less productive (€25) than the Eurozone average (€31), The Netherlands (€35), and Denmark (€45). This must be addressed to achieve the output necessary to achieve the goals of the National Development Plan.

Figure 5.6: Construction Sector Gross Value Added per Hour Worked (2017)

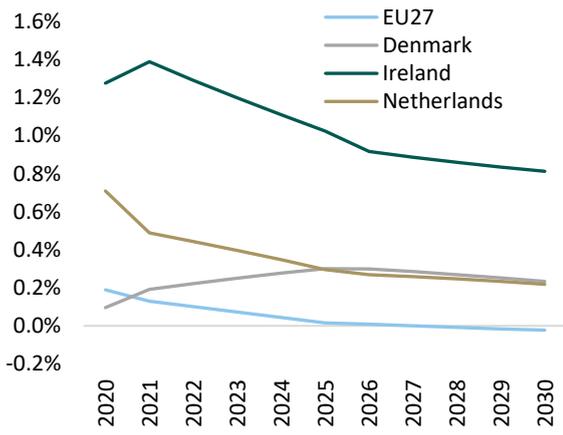


Source: Eurostat

5.4 Population Projections

Population projections give an indication of future demand for public infrastructure. Figure 5.7 shows Eurostat’s population growth central/baselining projections up to 2030. As is clearly shown, Ireland is expected to grow significantly more than the EU27 average, Denmark, and the Netherlands. It is important to note that according to the available data on Eurostat, Ireland is expected to have the 3rd highest percentage population growth in Europe up to 2030, after Malta and Iceland. This will mean a higher level of demand for public infrastructure in Ireland compared to other European countries. It should be noted that these Irish projections are on average 0.28 percentage points higher than the projections from the National Planning Framework which are from the ESRI (See Table 3.2).

Figure 5.7: Population Growth Projections



Source: Eurostat

Section 6:

Summary and Risks

6.1 Overview

This paper has examined the macro-economic context for Ireland in order to inform the Government's decision on investment levels in an updated NDP to be published in 2021. The data has confirmed that there will be significant demand for investment out to 2030, including an increased level of demand from more ambitious climate action targets adopted since 2018. However, supply side constraints are likely on both the public sector side in the short-term and construction sector side in the short- to medium-term. Taking these elements into account suggests that while a further increase in public investment levels may be appropriate, it should be limited in the short-term and subject to monitoring and review given the risks of overheating and poor value for money.

6.2 Capital Investment

This paper began by setting out the existing levels of public capital investment currently included in the National Development Plan. Project Ireland 2040 was launched in February 2018 and set out ten year public capital investment ceilings incorporating €91 billion of Exchequer investment and €25 billion of non-Exchequer investment including the commercial semi-state sector. This brought total planned public investment to €116 billion over the 10 years to 2027. This incorporated public investment reaching a target of 4 percent as a share of GNI*.

Capital expenditure saw its largest ever increase in 2020. While there was a pre-Covid increase planned in 2020, there were direct once-off increases related to Brexit, the Covid response (e.g. health and enterprise) as well as counter-cyclical stimulus measures announced in July. This amounted to an additional increase of €1,706 million in 2020, bringing the overall capital investment to €9,887 million or 4.8 percent of GNI*. This was an unprecedented year on year increase of 38 percent.

Budgeted capital expenditure in 2021 will be more than double the 2017 pre-NDP level of €4,601 million. Exchequer capital investment increased by 30 percent, 19 percent and 38 percent over 2018 to 2020. This was significantly higher than general increases in public expenditure over that period and significantly higher than economic growth over that period.

While the large annual increases over recent years were in part a return to the level of public investment present before the financial crisis, similar increases

are unlikely to be sustainable over the coming years due to the constraints detailed in this paper, in particular on the supply side.

6.3 Supply Side Constraints

Increasing levels of capital carryover in recent years may indicate challenges for Departments in spending the recent large increases in capital expenditure with little lead in time for the necessary appraisal, planning, consultation design, procurement etc. Planned, consistent and manageable increases would allow the necessary time for these processes while also giving Departments the opportunity to further increase their delivery capacity.

A range of measures are underway to increase public sector delivery capacity including establishment of a Commercial Skills Academy, an Infrastructure Network, expansion of the Irish Government Economic and Evaluation Service, the *Supporting Excellence* report on the capacity of the public sector and the establishment of a new Planning and Environmental Court.

Construction sector capacity constraints were clearly evident prior to the onset of the Covid-19 pandemic with elevated tender price inflation and a plateauing of employment growth in the sector. This risk was highlighted in the annual Build Report produced by the National Investment Office which noted that "potential risks and constraints are present in the form of cost inflation, limited sources of additional labour supply and stagnant productivity growth".

Despite a fall in private investment in construction due to the Covid-19 pandemic, this is likely to be short-lived. Construction sector capacity may therefore be a constraint on public and private investment going forward.

Industry is being supported to expand its capacity with three broad policies: communicating for industry confidence, securing the skills pipeline, and driving innovation. Specific actions include the establishment of the Build Digital Project to drive digital adoption across the built environment sector and work by Enterprise Ireland to assess the potential for a Construction Technology Centre.

6.4 Demand for Investment

The demand for public investment in Ireland is significant and relatively well-established.

The estimated needs to cover Ireland's infrastructure maintenance costs are 2 percent of national income. For Ireland in 2021, that would equate to approximately €4 billion.

In terms of demographics, the latest ESRI modelling based on the NPF indicates an average annual increase of approximately 0.74 percent out to 2040, leading to an increased demand for infrastructure.

The economic projections detailed in the Stability Programme Update indicate that the economic recovery from Covid-19 will result in real GDP growth of 4.5 percent and nominal GNI* growth of 3.6 percent in 2021, leading to an increased demand for infrastructure services to support economic activity. Longer-term economic projections indicate continued nominal growth over the period 2021-2025 in the region of 6 percent of GNI*, dropping to 4 percent of GNI* over the period 2026-2030.

The impacts of Covid-19 will take time to assess. However, research by ComReg found that the figure of those working remotely from home has more than doubled to 61 percent. Maintaining higher levels of remote working in the future may result in a decreased demand for transport infrastructure/services with positive implications for the reduction of carbon emissions.

6.5 Fiscal Constraints

The funding available for public investment is to a large degree dependent on the overall medium-term fiscal strategy adopted by the Government. At a basic level this means that a surplus/deficit target is set for the period and in a given year this may result in fiscal space becoming available to be allocated across current expenditure, capital expenditure or tax expenditures. It is a matter for Government as to what proportion is dedicated to capital expenditure.

Looking forward, as indicated in Section 4, the scale of additional funding available to be provided to capital projects will also be influenced by wider expenditure considerations of the State – in particular, policy commitments for expenditure priorities set out in the Programme for Government, such as the roll out of Slaintecare and the hypothecation of increased

carbon tax revenues for agreed Government spending priorities. Furthermore, outside of policy decisions, cost pressures arise each year relating to public service pay and pensions and areas of expenditure that are demand-led. These costs must be met from unallocated resources and limit the scope for the implementation of new policy initiatives if the upcoming fiscal strategy is to be fully adopted.

6.6 International Comparisons

In recent years Ireland has had a relatively high level of investment compared to other EU countries.

In 2020 total private and public investment in construction in Ireland stood at 12.2 percent as a share of GNI*. This was above the comparator countries of The Netherlands (11.1), Denmark (11.2) and the EU27 average (10.7).

Public investment (GFCF) in Ireland in 2020 stood at 4.7 percent as a share of GNI*, above The Netherlands (3.4), Denmark (3.6) and the EU27 Average (3.3).

Compared to the EU27 average, Ireland has allocated a significantly greater share of its public investment towards housing (+10.9 percentage points), social protection and community amenities. Ireland has allocated a significantly lower share of government investment than the EU27 average in defence (-6.3 percentage points) and general public services (e.g. basic research).

In terms of supply side comparisons, in 2020 construction sector employment in Ireland stood at 6.0 percent of total employment, below Denmark (6.3) the EU27 average (6.6) but above both The Netherlands (4.6).

In terms of the demand side, Ireland's population is expected to grow by 10.8 percent between 2020 and 2030 which is significantly higher than the EU27 average (0.32), Denmark (2.61), and The Netherlands (3.25).

6.7 Investment levels in new NDP

All of the factors examined in this paper need to be considered and balanced against each other when setting the planned level of public capital investment for the period 2021-2030.

The increases in public capital investment of between 19-38 percent each year for the last three years represent a major step change under Project Ireland 2040. These major increases included additional investment over the planned core provision of €8.2 billion in 2020. These were once-off investments directly related to Brexit, the Covid response (e.g. in health and enterprise) and further counter-cyclical stimulus measures announced in July 2020 totalling

€1.7 billion above the core spend. Similarly before the onset of Covid-19 the core investment for 2021 was €9.8 billion with additional measures increasing this to €10.2 billion.

These increases have put pressure on public and construction sector capacity to deliver this investment efficiently. However, there is also clearly an increased demand for public investment, in particular as it relates to the adoption of more challenging climate action targets.

Any increase in public investment to meet this demand needs to be planned and sustainable over the lifetime of the ten year plan in order to reduce risks of overheating and poor value for money. This would also allow for delivery capacity to continue to be expanded.

A sustainable capital expenditure strategy in this context could combine two elements: an annual increase above the core investment level, combined with a target level of investment as a share of GNI* to be achieved over the period 2021-2030.

In 2021 core capital expenditure will reach 4.5 percent as a share of GNI*. This is in excess of the target of 4% set out in the NDP as published in 2018. This higher level of investment is in part due to increases in ceilings since 2018 as well as a lower level of economic growth in 2020 and 2021 than originally projected.

Taking into account all the factors mentioned previously, it is proposed that the average level of investment in the new NDP be maintained at approximately 5 percent of GNI* over the period 2021-2030 with an annual average increase of investment of approximately 5 percent.

This would result in a total Exchequer Gross Voted Capital Expenditure in the new NDP of approximately €136 billion compared to the existing €91 billion. This represents an increase of 49 percent. When combined with Non-Exchequer Investment of €28.6 billion, this would bring the entire investment plan under the new NDP to approximately €165 billion compared to the existing €116 billion NDP. The delivery of public capital investment benefits from long-term planning and stability. However due to Covid-19 there is significant uncertainty relating to many of the different factors which need to be considered when setting public capital investment levels. It will therefore be critical to ensure developments are monitored closely and some flexibility is maintained in capital ceilings if adjustments or additional measures are necessary.

6.8 Risks

Investing too little in public capital expenditure would

result in unmet demand and the necessary infrastructure and services not being provided to the public. Investing too much could leave limited resources available for other areas of public expenditure.

Investing too much could also add to inflationary pressures and crowd out some desirable private sector investment, for example in certain types of housing which are already experiencing some viability challenges.

As highlighted in the Build 2019 and Build 2020 reports by the National Investment Office, such risks and pressures were already observable in the Irish construction sector before Covid-19.

This risk can be mitigated by increasing supply side capacity, and a number of initiatives which are already underway in this regard were outlined in section 2.3.4. However these will take time to come to fruition.

In addition, there is potential for measures to be taken to reduce demand in the private sector in order to make space for the increased public investment. In its mid-term evaluation of the National Development Plan 2000-2006, the ESRI suggested that a similar approach may have been necessary at that time.

Reducing certain elements of private sector demand may be a relevant policy option to be considered again in due course in the context of an increased level of public investment under a new NDP for 2021-2030. Targeted taxation measures could be necessary to reduce private sector construction demand (in areas other than housing) and free up capacity for the increased public investment.

At the same time there is the possibility that there could be a structural decline in activity in some elements of the non-residential construction sector due to Covid-19 impacts (e.g. offices, hotels & retail), however there is a lower level of visibility of the private sector pipeline and it is too early to tell at this point the degree to which demand in that sector will change over the coming years.

Continued monitoring of inflation and capacity constraints by the National Investment Office in conjunction with the Construction Sector Group will be necessary to inform any policy decisions related to this going forward.

Regardless of the ultimate level of public investment it will be essential that there is a robust focus on prioritisation of the investments which provide the highest level of social and economic return and value for money; and on strengthening the capability of the public sector to deliver fully on these priorities.

Annex 1

Definitions of Public Capital Investment

There are a number of different definitions of public capital investment used throughout this report. Before examining these definitions, it is important to note the distinction between public capital investment carried out by the General Government sector and private capital investment carried out by private companies or member of the public. In some sectors of the Irish economy the majority of capital investment is carried out by the Government, e.g. transport infrastructure, while in other sectors the majority of investment is carried out by the private sector, e.g. housing.

Public Gross Fixed Capital Formation (GFCF)

This is the measurement which is generally used for making international comparisons of public capital investment. This is a broad measure of public capital investment in the sense that it includes central and local government expenditure.

Where the term public GFCF is used in this report it refers to GFCF in the General Government sector.

According to the European System of Accounts (ESA) 2010, "gross fixed capital formation (P.51) consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realised by the productive activity of producer or institutional units. Fixed assets are produced assets used in production for more than one year".

The General Government sector in Ireland includes central Government, local Government and other agencies and bodies. It should be noted that there are public bodies which are not included in the General Government sector e.g. the ESB and Dublin Airport Authority. The CSO publishes an official Register of Public Sector Bodies.

Public GFCF does not include items of Exchequer expenditure such as capital grants to bodies outside of the General Government sector.

Gross Voted Capital Expenditure

This is a measurement which relates directly to the budgetary decisions made by the Government.

This is the figure for gross capital expenditure by Departments and agencies, which is voted by the Dáil on an annual basis. This is Exchequer expenditure, i.e. it comes from the Exchequer Account, into which all Government receipts are paid and from which all Government expenditure is funded, unless provided otherwise by law. Unlike GFCF this measurement does include items of expenditure such as capital grants.

This measurement differs from Net Voted Capital Expenditure in that it does not include appropriations in aid, i.e. Departmental receipts which, with the agreement of the Dáil, need not be paid directly into the

Exchequer, but which may be retained to defray the expenses of the Vote to which they refer.

Non Voted Capital Expenditure

This measurement mostly covers Semi-State Companies but also includes a number of other agencies and bodies, e.g. the E.S.B. and Coilte Teo. Non-Voted Capital Expenditure is summarised in Appendix 9 of the Revised Estimates for Public Services 2017.

This is capital expenditure which, by reference to specific statutes, may be incurred from the Central Fund without annual reference to the Dáil in the Estimates for the Supply Services.



**An Roinn Caiteachais
Phoiblí agus Athchóirithe**
Department of Public
Expenditure and Reform

Tithe an Rialtas, Sráid Mhuirfean Uacht,
Baile Átha Cliath 2, D02 R583, Éire
Government Buildings, Upper Merrion Street,
Dublin 2, D02 R583, Ireland

T:+353 676 7571

@IRLDeptPER

gov.ie/per