



An Roinn Airgeadais
Department of Finance

Joint Research Programme on The Macroeconomy, Taxation and Banking

Annual Report for 2020

The joint research programme between the Department of Finance, the Revenue Commissioners and the ESRI on *The Macroeconomy and Taxation* began in January 2015 with the objective of undertaking research on a range of macroeconomic and taxation issues in Ireland. The programme was later expanded to also undertake research on issues related to banking and financial stability in Ireland.

This report has been prepared on behalf of the Steering Committee for submission to the Secretary General of the Department of Finance and the Director of the ESRI to describe the work undertaken in 2020. As a result of the dramatic change in economic circumstances coming from the COVID-19 pandemic, a number of proposed projects outlined in the workplan at the start of the year were put on hold in order to examine the economic implications of the pandemic and this has been a major focus of the work of the joint research programme for most of the year.

This report provides an overview of the projects completed along with associated costs. It also includes a brief overview of the proposed research for the programme's extension into 2021, subject to the approval of the steering committee.

The joint research programme continues to make an extremely valuable contribution to the evidence-base underlying the Department of Finance's policymaking. The collaboration with ESRI researchers produces significant knowledge-spillovers across the economics, tax and banking divisions, while outputs from the programme have had tangible applications within the Department's own work. The firm-level estimated revenue elasticity from a forthcoming paper on the responsiveness of corporation tax revenues to taxable income has now been integrated into the Department's tax forecasting methodology. Similarly, findings from research exploring the sectoral and economy wide impacts of shocks from both Brexit and the Covid-19 pandemic continue to feed into the Department's macroeconomic forecasting processes. The Department would like to acknowledge the continued commitment of both the ESRI and Revenue Commissioners to the programme.

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1. Description and Progress of Research Topics

Using macro-model scenarios to explore a range of potential recovery paths for the Irish Economy

The COVID-19 public health crisis precipitated a massive global and domestic economic shock and its unprecedented nature substantially increased the level of uncertainty on the future evolution of the Irish economy. This project used the ESRI's structural macro-model COSMO to examine a range of alternative scenarios for the Irish economy to help quantify the potential macro-economic impact of the public health shock. The impacts were measured relative to a counterfactual 'no public health crisis' baseline with the shape of the recovery depending on a range of factors including the spread of the virus and the persistence of containment measures.

The main channels that were used to model the COVID-19 shock were lower consumption and employment, due to the effects of the lockdown; temporary closures in some sectors, leading to lower production; and a lower path for the international economy, affecting the tradable sector. In COSMO, these shocks have knock on effects on the rest of the economy. For example, investment will naturally fall as activity slows down and government transfers will increase as unemployment goes up; these variables will be fine-tuned to match the observed data. The shocks were applied in a way to allow them to interact with each other.

The project involved two parallel tasks: one, gathering the most recent data and the latest research to properly calibrate the size and timing of the initial shock and, two, compiling all the available evidence and leading indicators to motivate the different scenarios/recovery paths. Three scenarios were agreed. In the first scenario, the economy recovers rapidly and returns to its pre-COVID-19 baseline by the end of 2023. In the second scenario it takes longer to recover and because of factors such as continued necessary public health measures and/or business closures etc. there will be some scarring effects. There is also a third scenario where there is a second wave of the virus in Q4 of 2020. In addition, the scenario work was extended to combine the impact of a 'No Deal' Brexit outcome to the COVID-19 scenarios. This leverages off previous Brexit scenario research completed under the Programme and draws on the key finding of the sector level work (described below) which suggested there would be fairly limited sectoral overlap in terms of exposure between Brexit and COVID-19 shocks.

The results indicated that the large shocks to employment will take some time to unwind, and even with a relatively strong recovery, employment remains below no-pandemic baseline until the middle of 2023, 2024 and 2026 in the Recovery, 2nd Wave and Delayed Recovery scenarios respectively, while the unemployment rate returns to no-pandemic baseline a few quarters after. Although the pandemic has a considerable negative impact on output in the short run, in each of the three scenarios there is a return to growth over the medium terms of around 4 per cent per annum.

The output was published in the ESRI Quarterly Economic Commentary in October.

Exploring the sectoral overlaps of the COVID-19 and Brexit shocks

With the COVID-19 pandemic having a major impact on the Irish economy and a hard Brexit without a free trade agreement apparently increasing in risk, it was decided to add a new project to the research programme investigating the possible interactions between the two shocks.

This project addressed the question of the potential interactions of the two shocks by comparing the extent of sectoral exposure. A rank was assigned to each of the 57 2-digit NACE sectors in the economy, using three categories: severely affected sectors (“Red”), moderately affected sectors (“Amber”) and unaffected sectors (“Green”). The sectors most exposed to the COVID-19 shock were ranked using data on the number of people receiving either the PUP or TWSS. The sectors worst affected were Wholesale and Retail Trade, Accommodation and Food Services, Construction and Industry. The Brexit exposure was measured using estimates based on modelling trade barriers in goods and services.

No sector was found to be in a category of severely exposed to both the Brexit and COVID-19 shocks and a number of sectors (7 out of 57) sectors are found to be unaffected by either shock (in particular, high-tech manufacturing). However, some sectors did fall into the category of being severely exposed to one shock and moderately exposed to the other, a combination that leaves them at some risk if the two shocks are combined. The paper also examined interlinkages between the exposed sectors to each shock in terms of supply chains to those exposed to the other shock. This allowed us to not just examine each shock separately but to also get a sense of possible “knock-on” effects from a reduction in activity in one sector to other areas of the economy. Again, the main finding was that the sectors exposed to each shock are not particularly closely connected to those affected by the other shock.

Overall, the findings suggest that adding the Brexit shock to that of COVID-19 brings a wider range of sectors exposed to risk but that the impacts are not magnified by interaction effects. This research was released as an ESRI working paper in September and presented at an IGEES conference in November.

Exploring the Vulnerability of the Irish SMEs to the COVID-19 Pandemic

The sector-level work described above and other ESRI research showed that the economic impacts of the pandemic were not evenly spread across all types of business. This research focused on estimating the scale of the revenue losses and liquidity shortfalls of the Irish small and medium enterprise (SME) sector. It provided estimates for the period of the stringent restrictions throughout the second quarter of 2020 and also across several outlook scenarios for the rest of the year.

The potential impact in terms of revenue shortfalls over the lockdown period in the second quarter of 2020 was estimated by calibrating the Department of Finance’s Credit Demand Survey data with estimates of the range of turnover reductions from surveys carried out by the CSO and by Chambers Ireland. Expenditure reductions were also included with reductions in labour costs and other input costs.

Estimates of how widespread revenue gaps were across firms were generated and these were compared to the reserves that firms had in place to cope with a negative shock. The firm-level results were then aggregated to build up a total estimate of the revenue shortfall for the SME sector as a whole. The estimates for the revenue shortfalls over the lockdown period were then extended to cover the full year 2020 under a range of different scenarios.

The main results suggest that between 40-55 per cent of micro enterprises experienced a revenue shortfall for three months to mid-June 2020. Approximately one-in three micro firms, and two-in-five small/medium-sized firms, did not have sufficient own resources to cover the three-month revenue gaps. Aggregating these revenue gaps generated an estimate of losses of between €6bn and €10bn as a result of the pandemic for the second quarter of 2020. Some of this can be covered by SMEs existing internal resources but, even assuming a full running down of SME cash resources, a revenue shortfall of between €2.2bn and €4.3bn remains.

The range of estimates for the full year effect is much wider given the importance of the health developments in determining the recovery path. In our base scenario, assuming a steady recovery over the second half of the year, the shortfall in SME liquidity is between €8.1bn and €12.3bn, however, this is reduced to between €3.9bn and €6.7bn if SMEs use their own reserves fully.

This paper was published as a Special Article in the ESRI Quarterly Economic Commentary and was released in September.

Exposure of Ireland to Potential Increased Protectionism in the USA

This paper mapped out the trade relationship in goods between the two largest trading blocs in the global economy – the EU and US. Detailed product category information was used to provide an in-depth description of current trade flows between the two markets, with a particular focus on how Irish-US trade patterns compare to those of the EU overall. Along with the overall size of the trade flows, it highlights the extent of diversification in terms of the number of products particularly dependant on the US market.

The research then examined the structure of current bilateral tariff rates and how these vary across product types. This was done at the most granular level possible, using the product level trade flows compiled by the United Nations and matching them to current tariff levels. This structure is then used to assess potential changes proposed to these tariffs, using the US June 2020 tariff announcement and EU retaliation as illustrations. This paper was published as a working paper in January 2021.

Growth enhancing fiscal policy

The aim of this project was to compare the Irish fiscal mix, trends in economic growth and their historical relationship with the associated EU averages. This was motivated by arguments that overall fiscal policy mix can prove to be a major factor in determining subsequent rates of economic growth. The first stage of this project was to estimate Effective Tax Rates (ETRs) based on harmonized and comparable data from the National Accounts in order to compare tax structures across countries on

a consistent basis. The second stage of the project was to use these ETRs along with various spending categories for an assessment of the effects of the fiscal policy mix on GDP growth for the EU, with a particular emphasis on how Ireland compares to the EU average and subgroups of countries.

The results showed that taxes that distort economic incentives and/or increase non-wage costs are significantly lower in Ireland compared to the EU average and to most individual European countries. Conversely, relatively less distorting taxes (such as taxes on consumption) are significantly higher in Ireland although since 2008 the Irish consumption tax indicator converged towards the EU average. The research also found that the Irish tax structure is positively linked to GDP growth as business investment and hours worked tend to be negatively correlated with distorting taxes (e.g. labour and capital taxes) which are relatively lower in Ireland than in other EU countries.

A report on the connection between the structure of the Irish tax system and growth in a European context was published in mid-November alongside a technical description of the data construction.

Evolution of the labour share of income

a) Productivity dispersion and sectoral labour shares in Europe

This project investigates determinants of the observed long-term decline in the labour share of national income. Using sector level data from EU KLEMS and ESCB CompNet, the research finds evidence that increased dispersion of productivity and concentration of activity in a smaller number of firms within sectors are key contributors to the reduction in the labour share. This is consistent with the work on US firms by Autor et al (2018) who argued that the emergence of “superstar firms” due to technological changes were allowing higher profits to be concentrated in a relatively small number of firms, thereby reducing the share of value added accruing to workers.

The work has examined several different measures of productivity using pooled country-sector data across Europe as well as testing the approach on individual countries and groups of sectors. We decompose the effects into those operating on the average labour share within a sector and those reallocating resources between firms. Consistent evidence is found that the effects mainly operate through the channel of reallocation between firms, thus providing support for the superstar firm hypothesis. Countries with higher levels of globalisation are also found to have lower average labour shares with changes in the cost of capital relative to labour also playing a role.

The initial findings from this sectoral analysis were presented at the Department’s Annual Policy Conference in April 2019, at the Economist Group of the IIEA in September 2019, the CompNet Data Users conference in Paris in October 2019 and at an OECD Workshop on “Trends in business dynamism, productivity growth and productivity dispersion” in Brussels in November 2019. The paper was published in May.

A second strand of the research on the evolution of the labour share of income was to look at it from a macroeconomic level, examining the extent to which the increase in the capital share of income across countries can be attributed to the increase in the returns to housing over the period. Focusing on a sample of EU countries, this paper finds that when the impact of housing services is excluded,

the labour income share does not follow the same downward trend; rather, it exhibits a relatively small increase by the end of the sample period.

Using recently developed panel time series estimators that can account for the heterogeneous impact of macroeconomic shocks, we empirically test the impact of capital deepening, the size of the government, globalization and financialization on the labour share. The results indicate that both relative prices and government size appear to be significant determinants of the labour share, while globalization and financialization do not have a significant effect. This paper was published as a working paper in December.

Measuring the macroeconomic effects of MNEs in Ireland

By international standards, multinational enterprises (MNEs) play a particularly important role in the Irish economy. The production structure of foreign owned MNEs is very different from the traditional structure of domestic firms. Multinational firms utilize intangible capital, skilled labour and unskilled labour to produce their products which are mostly exported abroad while the largest share of their profits is repatriated to their foreign owners. Because of the intangible capital-skill complementarity feature of MNEs production function skilled labour receive higher wages than unskilled labour. We can also allow for productivity spillovers between domestic tradable and non-tradable firms and MNEs.

The aim of this project is to follow a model-based approach to measure the effect of MNEs on the welfare of the Irish residents. In order to do this in the newly developed FIR-GEM model we will incorporate a multinational production sector separate from the tradable sector.

The initial empirical part of the project examined the effects of intangible capital on Ireland's economic growth in the post-1995 period. In particular, the analysis is based on a novel cross-industry dataset containing data for investment on the various types of intangible investment. Combining this dataset with data on employment and capital formation from the CSO and Eurostat, we create a dataset that covers both the total economy and the main economic activity sectors. The project attempts to answer a series of questions related to the patterns of economic growth. Firstly, we quantify the contribution of intangible capital to Irish economic growth. Secondly, how much output was unaccounted for due to the omission of certain categories of intangible capital? And, finally, how does the inclusion of intangible capital affect the allocation of growth between TFP and capital deepening/capital formation?

Our preliminary results indicate that for the Ireland, capital formation is the main source of growth for the Irish economy, with intangible capital's contribution being almost twice when compared to that of tangible capital. We also focus on applying the sources of growth exercise to all the sectors of the Irish economy, in order to identify which sectors are (in)tangible intensive and how this characteristic affects the growth of GVA in each sector.

In the second part of the project, we build a theoretical framework that resembles the unique structure of the Irish economy. In particular we distinguish between the domestic sector and the multinational sector. The domestic sector utilizes labour, physical and imported intangible capital to produce output. On the other hand, the multinational sector heavily relies on imported intangible

capital to produce goods that are fully exported to the rest of the world. Based on this theoretical framework to quantify the effect of multinational activity in the Irish economy we conduct two type of simulations. First, we consider the case of an indicative intangible investment shock in the multinational sector with an initial restrictive assumption that this shock does not have positive spillover effects in the production of the domestic sector. Second, we allow for a richer setup that is the imported intangible capital affects the multinational sector but has also positive spillover effects in the domestic sector of the economy.

Initial simulations of the model have been undertaken. The next steps are to embed this theoretical framework in the broader model FIRGEM with the new parameters will be calibrated using the analysis in the empirical part. The extended model will allow to follow more closely Irish National Accounts and address relevant macroeconomic policy issues. This project will be completed next year.

Corporation Tax Elasticities

This project was proposed to complete the suite of micro-founded revenue elasticities papers produced under the auspices of earlier Joint Research Programme commitments to now include an analysis of corporate income tax elasticities. The objective of the project is to explore the use of microdata on profit distribution and a range of other candidate metrics to calculate marginal tax rates of representative business entities using the Revenue Commissioners panel of Corporation Tax paying firms.

Baseline estimates for the annual aggregate revenue elasticities suggest that the tax elasticity has gradually trended up over time, reaching 1.34 for the latest year available (2018). The average elasticity across the baseline annual estimates is 1.3. This paper will be finalised in 2021.

Assessing the Potential Impact of Population Ageing on the Public Finances

Population ageing and long-run demographic changes are widely considered to have important implications for future economic growth and fiscal sustainability. This ageing process will put considerable upward pressure on public spending.

This project will use long-term demographic projections generated using the ESRI's demographic model. While the CSO produce population projections, these tend to only be updated every five years, and do not permit the examination of custom designed scenarios. Projections of net migration are determined in the ESRI's macroeconomic model (COSMO) and are driven by the relative attractiveness of alternative labour markets. Using COSMO (and the fiscal satellite) and the demographic model, it would be possible to generate alternative macro scenarios from which the implications of ageing for the evolution of the public finances could be analysed.

The fiscal satellite allows for a richer interaction between COSMO and the demographic model, with a more comprehensive view of public spending and how ageing could affect its different components. Consequently, on the public finances side, it is proposed to focus on the areas of spending which are most likely to be affected by population ageing, namely social welfare, health and education, while all

aspects of the public finances would have to be considered to provide the aggregate impacts on key variables like the general government balance and debt. Work on this project was begun in the final quarter of 2020 and will continue into next year.

SME Investment Report 2019

In order to examine the determinants of SME investment, a module was added to the Department of Finance Credit Demand Survey to explore in more detail the patterns of investment, its barriers, and its financing across Irish SMEs. This report used that data to examine investment patterns over the three years 2016-2018 across asset class, firm type, sector and region.

The report shows that around 80 per cent of SMEs invested in some form of asset or in their staff in each year from 2016 to 2018. Considerable variation across investment type was found with over 65% of SMEs investing in staff and 20% investing in buildings. Just 7 per cent of SMEs invested in intangibles, with a median investment value of €10,000. While most patterns were stable across years, reductions in the percentages of investing by UK exporting firms were observed in 2018 suggesting some Brexit uncertainty impacting on firm investment decisions. However, 80 per cent of Irish SMEs reported satisfaction either with the level of investment undertaken or the capacity they currently have (if they did not invest).

The data indicated that roughly 16 per cent firms faced a capital gap in 2018, a reduction since 2016. However, the capital gap continues to be highest for micro and younger firms. In terms of barriers to investment, uncertainty and insufficient internal funds were identified as two most important factors. Uncertainty was of particular importance in 2018 for firms which invested less than they would like. This report also contains some cross-country evidence provided by the European Investment Bank from data collected in their EIBIS survey. The report was published in September.

Macroeconomic effects of alternative capital buffer rules using COSMO

This research project proposes to develop and rework the COSMO banking sector model and enable an assessment of macroprudential capital buffers on the Irish economy. The research would allow the Department and ESRI to explore how changes to capital buffers (such as the countercyclical capital buffer) would impact Irish GDP, employment, fiscal policy and the broader mortgage market.

The project entails removing from COSMO the banking sector satellite model from the core COSMO framework and then revisiting the equations and structures that exist. These will need to be evaluated for their suitability for the capital buffer analysis, adaptations and changes made where required and re-estimation undertaken. The data will also have to be updated as the previous equations were only estimated up until 2014/2015. The model will then have to be re-attached to the core of COSMO and the simulations will be undertaken.

In order to facilitate work on the modelling of the economic response to COVID-19, work on this project was deferred and will be considered for inclusion in the 2021 workplan.

2. Outputs in 2020

Research Papers and Publications published in 2020

- “Exploring the impacts of COVID-19, a hard Brexit and recovery paths for the economy” by Adele Bergin, Abian Garcia Rodriguez, Luke Rehill and Éamonn Sweeney. *ESRI Quarterly Economic Commentary*, Autumn 2020.
- “Examination of the sectoral overlap of COVID-19 and Brexit shocks” by Luke Daly and Martina Lawless. ESRI Working Paper 677.
- “COVID-19 pandemic and SME revenues in Ireland: What’s the gap?” by Maria Martinez-Cillero, Martina Lawless and Conor O’Toole. *ESRI Quarterly Economic Commentary*, Autumn 2020.
- *SME Investment Report 2019: Developments between 2016 and 2018* by Martina Lawless, Maria Martinez-Cillero, Conor O’Toole, Eric Gargan, Leona Cantillon, Peter McGoldrick. ESRI Survey and Statistical Report Series No.86
- *Effective tax rates in Ireland* by Ilias Kostarakos and Petros Varthalitis. ESRI Research Series No.110.
- “Effective Tax Rates in the EU: An updated database over 1995-2017” by Ilias Kostarakos and Petros Varthalitis. Technical appendix to ESRI Research Series No.110.
- “Determinants of the (non-Housing) Labour Income Share in the EU” by Ilias Kostarakos. ESRI Working Paper 693.

Research Papers and Publications published in 2021 or forthcoming

- “EU-US Trade Structure and Risks” by Luke Daly and Martina Lawless. ESRI Working Paper 694 (January 2021).
- “Responsiveness of corporate taxes to profits and taxable income” by Jean Acheson, Martina Lawless, Donough Lawlor, Oisín Tarrant and Laura Weymes.

External recognition of research

The report on *The economic and distributional impacts of an increased carbon tax with different revenue recycling schemes* by Kelly de Bruin, Eoin Monaghan and Aykut Mert Yakut which was undertaken as part of the joint research programme in 2019 was awarded the 2020 Miriam Hederman-O’Brien prize by the Foundation for Fiscal Studies. The aim of the prize is to recognise outstanding original work from new contributors in the area of Irish fiscal policy, to promote the study and discussion of matters relating to fiscal, economic and social policy and to reward those who demonstrate exceptional research promise.

3. Proposed Research Topics for 2021

A range of new topics have been proposed for the 2021 work plan, described briefly below. Detailed terms of reference will be prepared for these and any new proposed topic for discussion and approval by the Steering Committee throughout the year.

Assessing the Potential Impact of Population Ageing on the Public Finances

Population ageing and long-run demographic changes are widely considered to have important implications for future economic growth and fiscal sustainability. The ageing process will put considerable upward pressure on public spending. Using COSMO (and the fiscal satellite) and the demographic model, it would be possible to generate alternative macro scenarios from which the implications of ageing for the evolution of the public finances could be analysed. The fiscal satellite allows for a richer interaction between COSMO and the demographic model, with a more comprehensive view of public spending and how ageing could affect its different components.

Macroeconomic effects of alternative capital buffer rules

This research project proposes to develop the COSMO banking sector model and enable an assessment of macroprudential capital buffers on the Irish economy. The research would allow the Department and ESRI to explore how changes to capital buffers (such as the countercyclical capital buffer) would impact Irish GDP, employment, fiscal policy and the broader mortgage market.

The role of firm dynamism in aggregate productivity growth

The establishment and growth of new businesses are key ingredients for economic growth and job creation. Across the OECD, however, the share of start-ups had been steadily decreasing and evidence from the US that finds a significant decline in business dynamism in the US over the last 30 years. For Ireland, the OECD has expressed concern that the rate of business entry-exit dynamism is particularly low. Extensive work on estimating firm productivity distributions using CSO micro-data has been undertaken by the Department and used in a previous project on productivity spillovers for this programme. This project proposes to utilise this data further and build on the previous analysis by focusing in on the contributions to overall productivity levels and distributions of firm turnover.

Anticipation and Response of Irish Trade Flows to Brexit

Despite extensive negotiations since 2016, the trading relationship that will exist between the EU and UK once the UK formally exits the EU's single market and customs union on 1st January 2021 remains uncertain. Even in the event of a tariff and quota free agreement being put in place, it is likely that additional trading costs will be attached to UK-EU trade. This project proposes to use the most quickly available data source on export flows to examine how trade with the UK evolved through the withdrawal process and the immediate effects on trade levels and composition of trade after 1st January 2021. This would make use of the monthly goods trade statistics at a detailed three-digit sector and country level which are released on a very timely basis.

Using macro-model scenarios to explore a range of potential recovery paths for the Irish Economy: An Update

The COVID-19 public health crisis precipitated a massive domestic and global economic shock. In 2020, work under this research programme used the macro-econometric model COSMO to explore the

potential macro-economic impacts of COVID-19. A range of subsequent development, including the severe lockdown associated with the third wave of the virus and the positive development of the rollout of vaccines, makes it timely to revisit and update this research. Separate scenarios could be generated that incorporate recent events and could focus on areas such as: (i) the impact further lockdowns in 2021; (ii) the heightened risk of scarring given the continued necessary public health measures; (iii) and a more benign scenario where vaccine rollout lessens the need for public health measures.

SME survival, recovery and investment following COVID-19

This project proposes to use the information collected through the Department's Credit Demand Survey to examine how the Irish SME sector is being affected by COVID-19. This will incorporate estimates of the resources, both internal and from policy supports, that firms can draw on and gaps where policy supports may be best targeted. The much greater detail on the composition of firm expenditures now available will be important in providing evidence on targeting of policy supports. This will be followed by a second strand of work taking a slightly longer-run perspective. This will examine how firm investment plans have been affected by COVID-19. This is an important question for the recovery period as there is a risk that the utilisation of reserves to survive the pandemic may negatively impact on longer-term growth and expansion of the firms by limiting their ability to undertake investments.

Transition to a Low Carbon Economy

To ensure a smooth and least-cost transition to a low-carbon economy, it is imperative that appropriate energy policies, including a carbon tax pathway, are designed. Under the 2019 Joint Research Programme (JRP), an increase in the carbon tax reaching €80 by 2030 was examined. The impacts for the macro economy, households and emissions were investigated. However, this work did not include other climate policy elements in the Climate Action Plan (CAP), most importantly the electric vehicle (EV) and retrofitting targets. Furthermore, recent international events including the COVID-19 crisis and the drop in energy prices are likely to have large impacts on the effectiveness of climate policies. This project therefore proposes to use the ESRI's I3E model to investigate the impacts of the latest proposed climate policies: a carbon tax trajectory reaching €100 by 2030, the CAP EV target and the CAP retrofitting target.

4. Budget 2020

Allocation of 2020 costs by project	
Modelling of the multinational sector	62,310
Capital buffers	18,434
Recovery scenarios from COVID-19	68,607
Impact of COVID-19 on SMEs	34,257
Corporation tax elasticities	13,944
Sectoral exposure to COVID and Brexit	38,346
US trade patterns and risks	40,670
Fiscal cost of aging	8,875
Total	285,443