



Seirbhís Thithe
an Oireachtais
Houses of the
Oireachtas Service



*Using Data Visualisation Tools to Make Research Accessible:
The Experience of the Parliamentary Research Service*

Presentation to the 2021 PDST YEOTY Webinar

Darren Lawlor, Senior Parliamentary Researcher (Economics)
Oireachtas Parliamentary Research Service

Presentation overview

1. The Parliamentary Research Service (PRS)

- About us
- Why our experience matters
- Our Data Visualisation outputs

2. Statics (Infographics)

- Our journey (summary)
- The 'dark times'
- Seeing the light
- First steps and Feasibility Report
- Our approach and software
- Guidance and training
- Inspiration
- The templates

3. Interactives (Data animations) [and recent developments]

- Our journey
- Software
- Dedicated portal
- Guidance and training

4. My Advice (YEOTY)

About the Parliamentary Research Service

Not Data Visualisation specialists



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The Oireachtas Parliamentary Research Service (within the Library & Research Service) has c23 permanent research staff recruited as professional, subject matter experts.

Research teams include:

- Agricultural and Environment Science (2 staff)
- Economic & Statistical Analysis (4 staff)
- Legal Research / Analysis (4 staff)
- Private Members' Bills (3 staff)
- Public Administration / Political Science (2 staff)
- Social Science & Parliamentary Affairs (6 staff)

Our research and analysis outputs include:

- Legislative Digests
- Briefing Papers for Members
- Briefing Papers for Oireachtas Committees (elective)
- Briefing Papers for Oireachtas Committees (pre-legislative scrutiny and PMB scrutiny)
- Proactive/topical (Spotlights and Notes)
- Data Visualisation outputs (infographics, data animations, Constituency Dashboards)

Check out:

- Our website bit.ly/OireachtasPRS
- Our Data Visualisation & Analysis page bit.ly/OirDataViz



PRS: Why our experience matters

Not Data Visualisation specialists



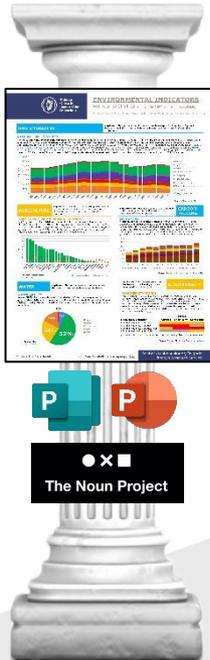
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Oireachtas

- PRS staff are subject specialists but **not Data Visualisation specialists** (with support, they developed proficiency very quickly and easily)
- **Our audience is non-specialists (Oireachtas Members/Committees)** and understanding / responding to our audience is paramount
- The purpose of Data Visualisation methods (presenting information in a clear, efficient and easily understandable way) **perfectly dovetails with our audience's** requirements that research be well scoped, timely (quick turnarounds) and written in Plain English
- Successive Member surveys highlight that Members receive and digest research/information in increasingly diverse ways, which has led to our **frontloading** summaries, key messages/insights/issues and 'recommendations' in all research outputs to remain relevant (as the parliamentary researchers)
- Researchers (as gifted as they are) **can be poor with the 'elevator pitch'** - an integral interpersonal/communication skill
- We know that being innovative and responsive to our Members is **embraced by staff as it leads to better engagement**
- A visual output is **(far) more easily disseminated**
- Members **love infographics and better recall the detail/data they present**
- Visual communication **is a must-have skill** in the social science / economics field to highlight your research (are we all data journalists now?)

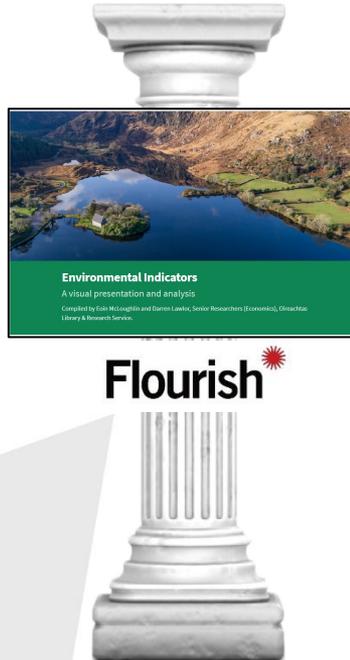
PRS: Our Data Visualisation outputs

The 'three pillars'

Statics (Infographics)



Interactives (Data animations)



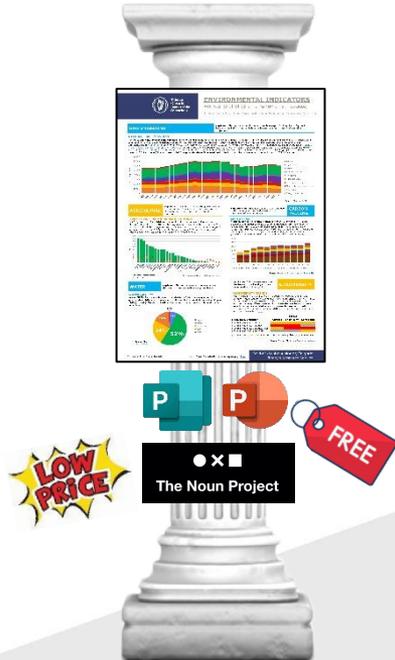
Constituency Dashboards (GIS/Mapping)



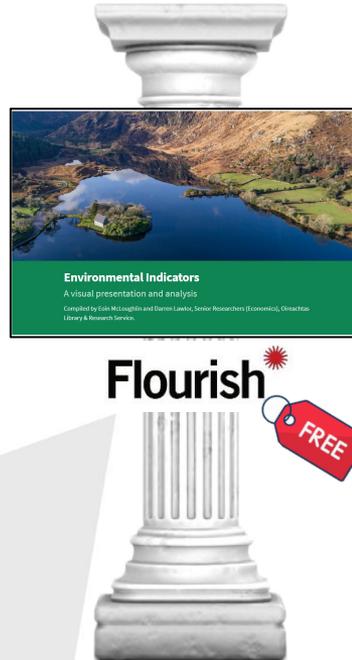
PRS: Our Data Visualisation outputs

The 'three pillars'

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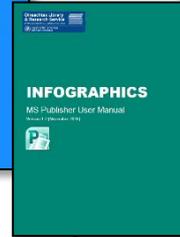
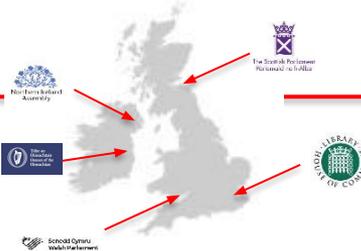
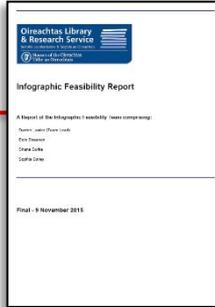
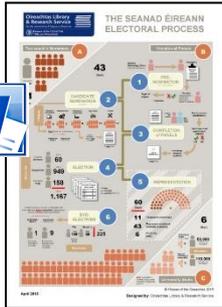
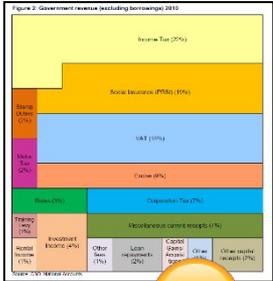


Constituency Dashboards (GIS/Mapping)



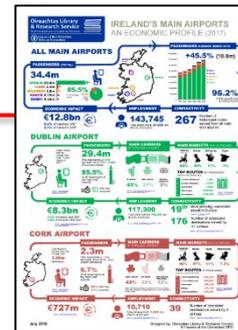
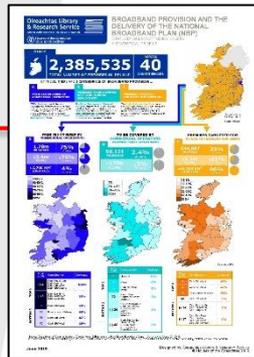
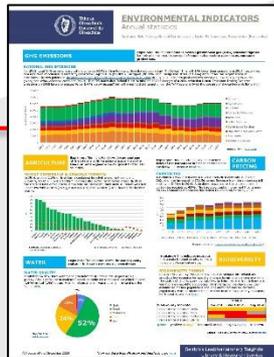
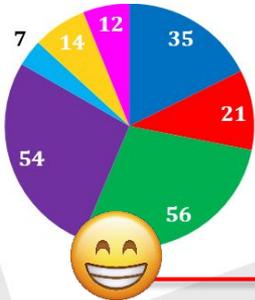
Statics: Our journey (summary)

At a glance (October 2014-present)



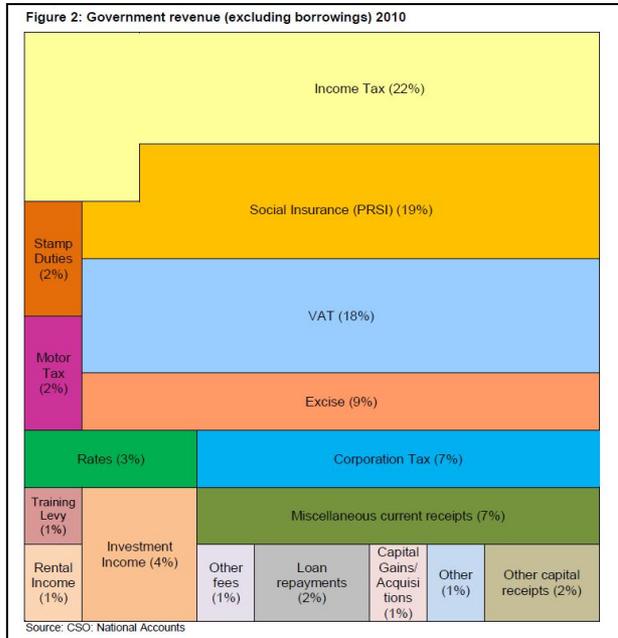
Our Static journey

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Statics: The 'dark times' At a glance (October 2014-present)

Some (limited) examples from before October 2014....



**Timeline charts...
Ahead of Budget 2012**

**Treemaps
Examples included in
Economic Indicators
publications**

Statics: Seeing the light...

Motivational factors behind our desire to develop our capacity to produce static infographics

New entrants / staff

A number of new entrants brought specific experience to the L&RS which included experience in/interest in data visualisation.

Infographics reflect best practice (parliamentary research services)

Research services must move 'with the times'. Infographics are self-contained graphic visual stories, presenting information, data or knowledge clearly, with meaning and context, and without bias. This is aligned well to the remit of a parliamentary research service.

Infographics clearly address information overload *and* are engaging

In the digital / social media age, multiple sources of information competing for attention. Infographics are Ideal, succinct products for time-poor Members of Parliament.

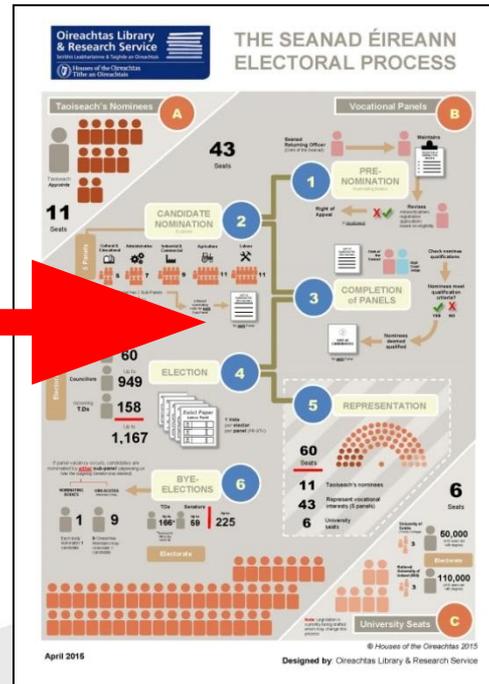
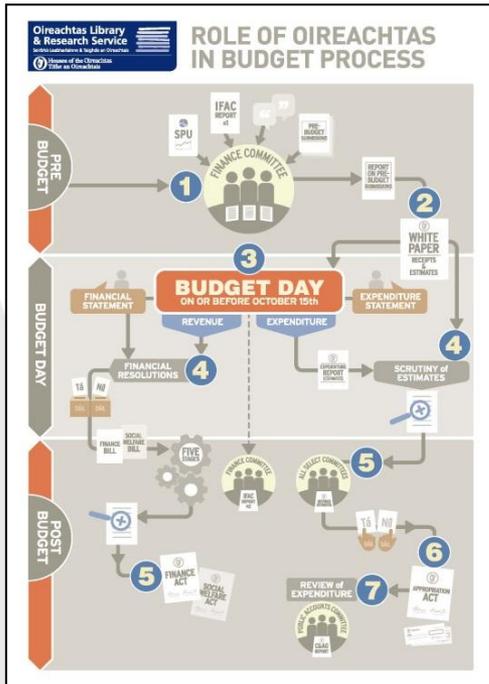
Infographics provide comprehensive and analytical information in an accessible and customisable format

By providing a memorable visual narrative, they provide a better research vehicle than traditional briefing papers.

Statics: First steps and Feasibility Report

October 2014-November 2015

Initially, we published **2** standalones



Externally (via a tender with FUSE Graphic Design)
October 2014 [available [here](#)]

Internally (drafted by L&RS)
April 2015
 [since updated, available [here](#)]

A dedicated project team was assembled to draft an Infographic Feasibility Report. This report (informed by other Parliamentary Research Services) was published in November 2015

Oireachtas Library & Research Service
 Seirbhís Leabharlaine & Teaghló an Oireachtas
 Houses of the Oireachtas
 Tithe an Oireachtas

Infographic Feasibility Report

A Report of the Infographic Feasibility Team comprising:

- Darren Lawlor (Team Lead)
- Eoin Sheanon
- Shane Burke
- Sophia Carey

Final - 9 November 2015

Statics: Our approach and software

Agreed in 2015 (Infographic Feasibility Report)

Approach	Software
No 'Data Viz specialist' staff / All staff approach	MS Publisher (more recently MS PowerPoint) + The Noun Project



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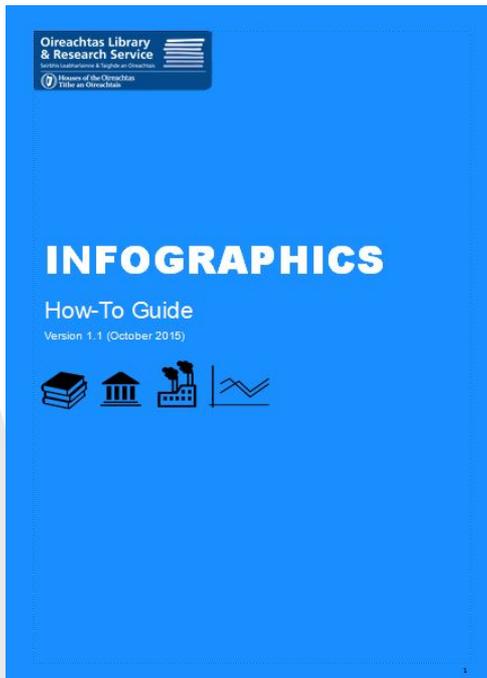


Supports

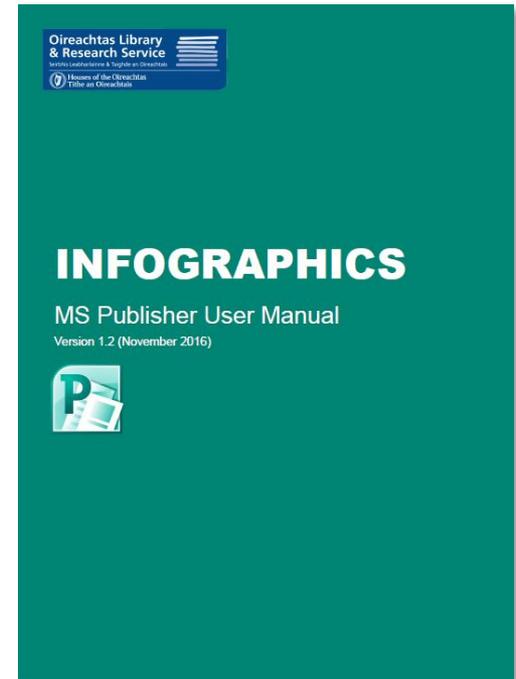
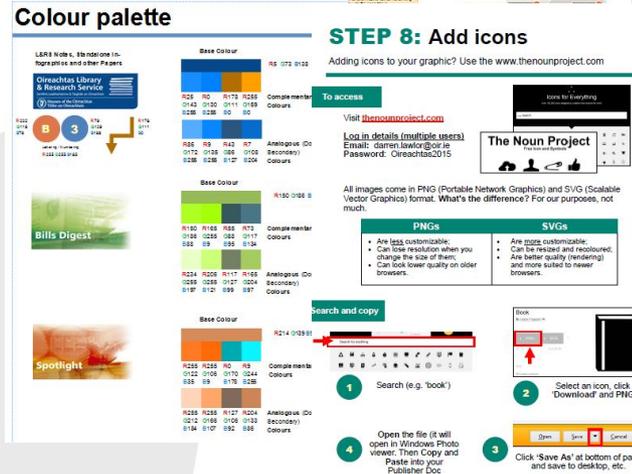
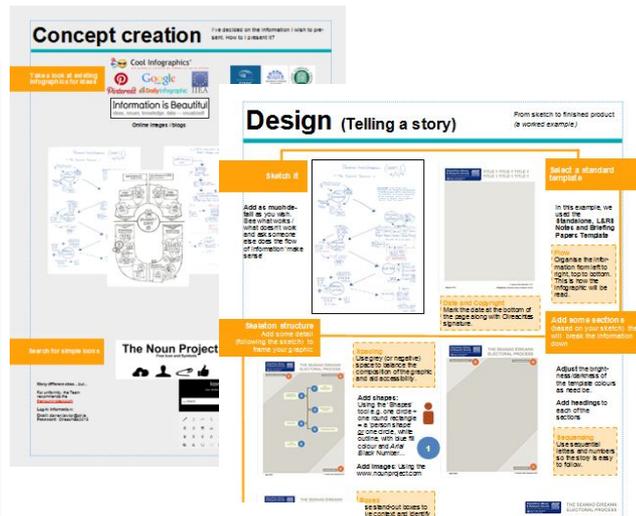
- **1-to-1 desk-based (software and infographic) familiarisation training** provided to all staff upon request (by the Data Visualisation Team, based on our experience / use to date)
- **A 'Which Chart' guide**
- **'Tips 'n tricks'** information is shared often with all staff (saved in a shared, central 'Data Visualisation' folder)
- Two **'How-To' Guides** produced (next slide)

Statics: Guidance and training

Two 'How-To' Guides for staff



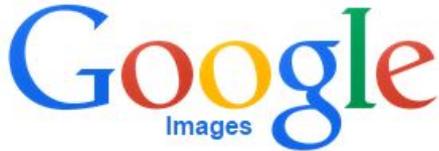
A gentle introduction...



For the nuts and bolts...

Statics: Inspiration

Many, many sources and resources



Online images / blogs / books



The Scottish Parliament
Pàrlamaid na h-Alba



Cynulliad National
Cenedlaethol Assembly for
Wales

Existing / similar infographics
from other legislatures

Statics: The templates

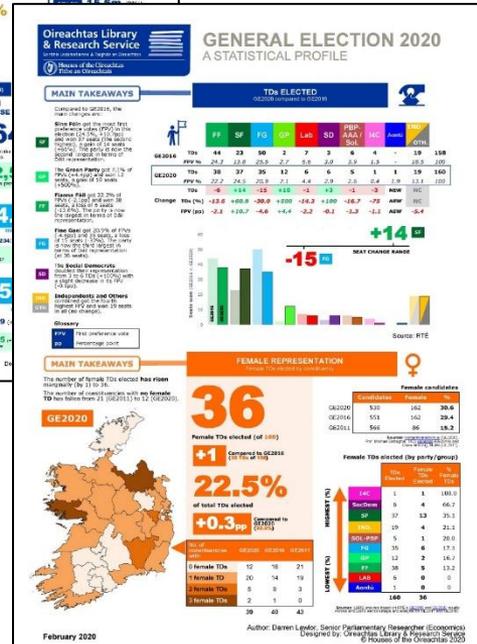
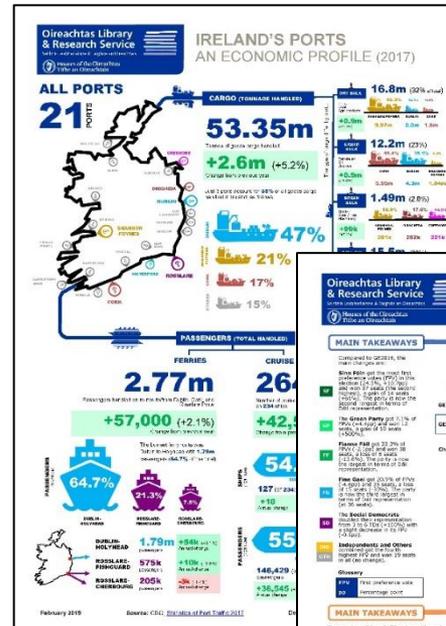
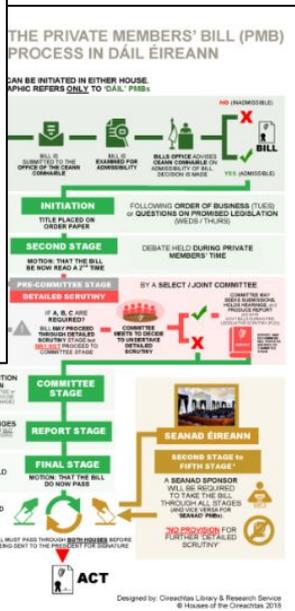
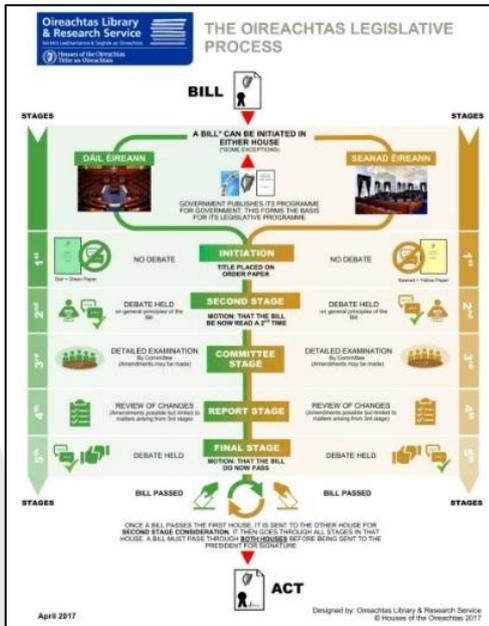
In total, **199** infographics published since October 2014

Develop replicable templates...but not just for data...

Process

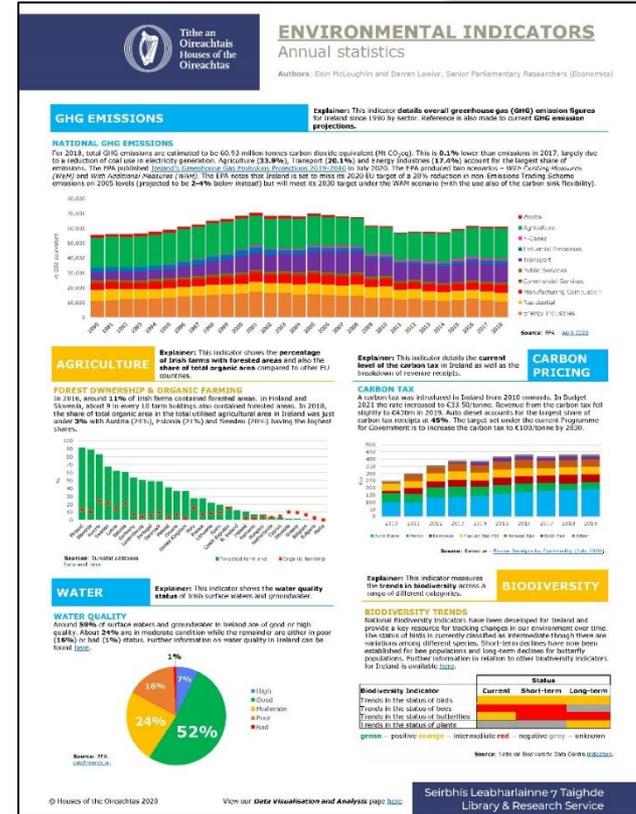
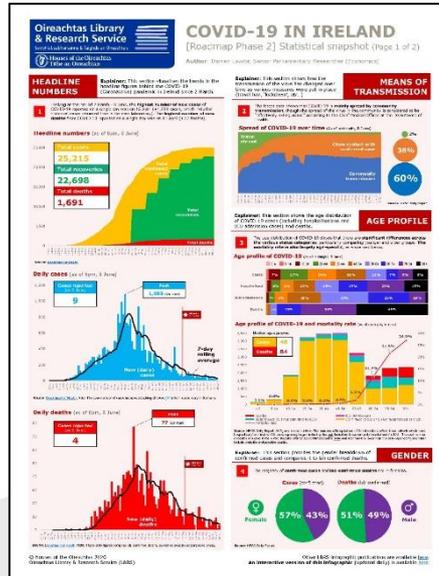
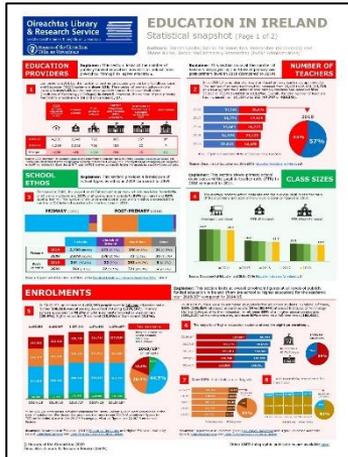
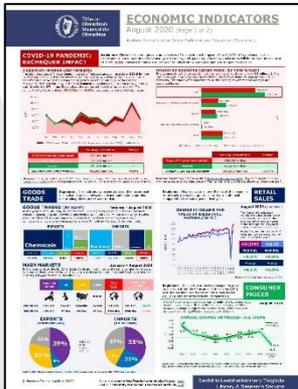
v.

Data



Statics: The templates

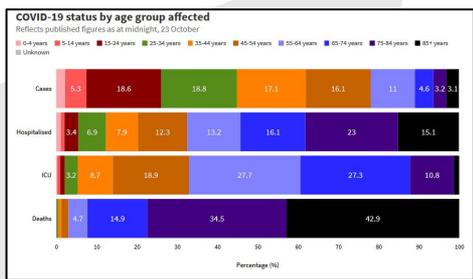
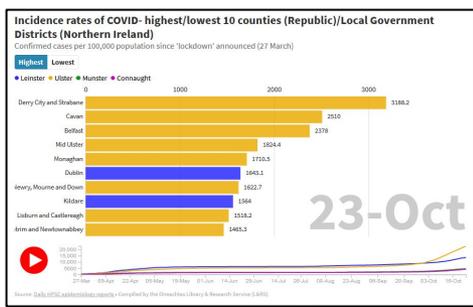
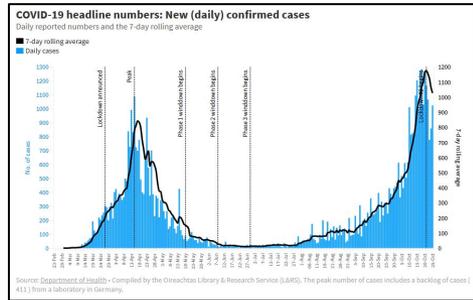
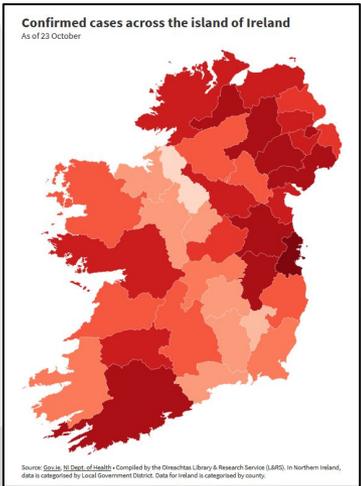
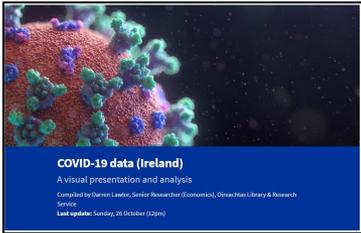
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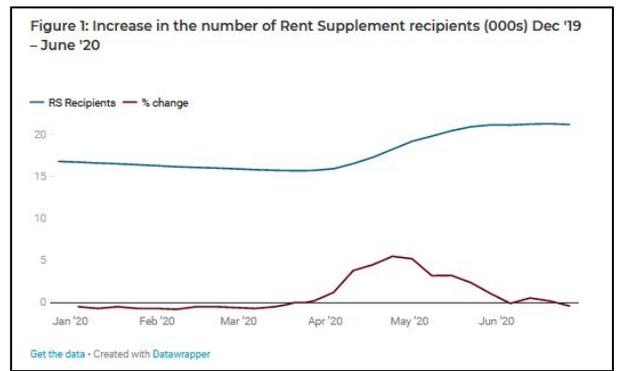
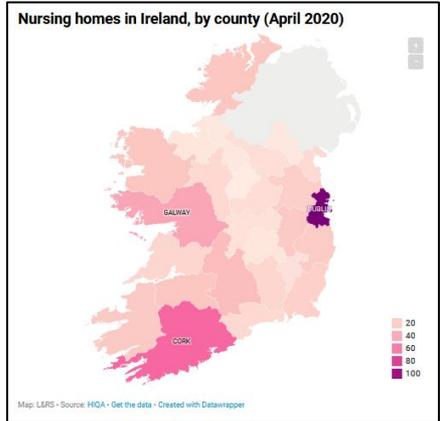
Interactives: Software

At a glance (March 2020 - present)

Flourish



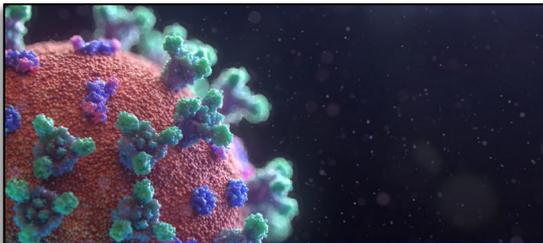
Datawrapper



Benefits: Intuitive, standalone, public and (did I mention) free!

Interactives: Software

In total, **40** data animations published since March 2020 (**8** incl. L&RS involvement).



COVID-19 data (Ireland)
A visual presentation and analysis

Compiled by Darren Lawlor, Senior Researcher (Economics), Oireachtas Library & Research Service
Last update: Sunday, 26 October (12pm)

April 2020



Fiscal data in Ireland (including impact of COVID-19)
A visual presentation and analysis

Compiled by Dr. Jacopo Bedogni, Head of Budgetary Research, Oireachtas Parliamentary Budget Office and Darren Lawlor, Senior Parliamentary Researcher (Economics), Oireachtas Library & Research Service
Last update: 19 October 2020

June 2020



Traffic and transport indicators (including the impact of COVID-19)
A visual presentation and analysis

Compiled by Darren Lawlor, Senior Researcher (Economics), Oireachtas Library & Research Service.
Updated: 22 September 2020

July 2020



Economic & fiscal profiles of Ireland's regions and counties
A visual presentation and analysis

Compiled by Dr. Keith Fitzgerald, Head of Budgetary Research, Parliamentary Budget Office and Darren Lawlor, Senior Parliamentary Researcher (Economics), Oireachtas Library & Research Service
Publication date: 15 July 2020

July 2020



Monitoring the Economic Impact of COVID-19 with the new PBO Weekly Domestic Activity Tracker
A visual presentation and analysis

Compiled by Alison Wrynn and Jacopo Bedogni, Oireachtas Parliamentary Budget Office
Last Updated: 07 October 2020

August 2020



Environmental Indicators
A visual presentation and analysis

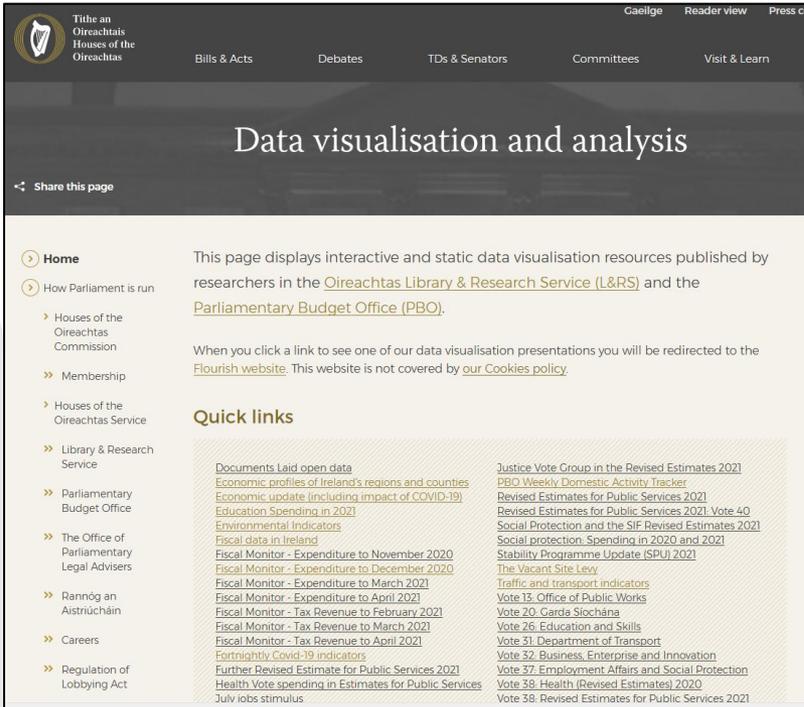
Compiled by Eoin McLoughlin and Darren Lawlor, Senior Researchers (Economics), Oireachtas Library & Research Service.

October 2020

All of the above are updated (frequency ranges from fortnightly to quarterly)

Interactives: Dedicated portal

In total, **40** data animations published since March 2020 (**8** incl. L&RS involvement).



The screenshot shows the Oireachtas Library & Research Service website. The header includes the Oireachtas logo and navigation links for Bills & Acts, Debates, TDs & Senators, Committees, and Visit & Learn. The main heading is "Data visualisation and analysis". Below this, there is a "Share this page" button and a "Home" button. The main content area is titled "How Parliament is run" and contains a paragraph explaining that the page displays interactive and static data visualisation resources published by researchers in the Oireachtas Library & Research Service (L&RS) and the Parliamentary Budget Office (PBO). It also mentions that clicking a link will redirect to the Flourish website. A "Quick links" section is visible, listing various data visualisation resources such as "Documents Laid open data", "Economic profiles of Ireland's regions and counties", "Fiscal Monitor - Expenditure to December 2020", "Fiscal Monitor - Expenditure to March 2021", "Fiscal Monitor - Expenditure to April 2021", "Fiscal Monitor - Tax Revenue to February 2021", "Fiscal Monitor - Tax Revenue to March 2021", "Fiscal Monitor - Tax Revenue to April 2021", "Fortnightly Covid-19 indicators", "Further Revised Estimate for Public Services 2021", "Health Vote spending in Estimates for Public Services 2021", and "Juliv jobs stimulus".



bit.ly/OirDataViz



Documents Laid Open Data | 1922-2019

The Oireachtas Library has published an open metadata dataset of all the documents laid before the Houses since 1922. The dataset was analysed by [Professor Derek Greene](#), a funded investigator at the [SFI Insight Centre for Data Analytics](#). Highlights of this analysis are presented in this animated presentation on [Flourish](#).

➤ See the Documents Laid Open Data presentation



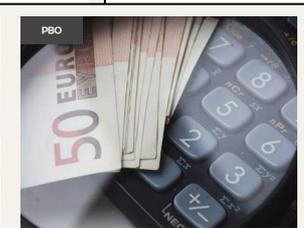
PBO Weekly Domestic Activity Tracker

➤ See the PBO Weekly Domestic Activity Tracker



Fiscal Monitor - Tax Revenue to March 2021

➤ Fiscal Monitor - Tax Revenue to March 2021



Fiscal Monitor - Expenditure to March 2021

➤ Fiscal Monitor - Expenditure to March 2021



Revised Estimates for Public Services 2021: Vote



Fiscal Monitor - Tax Revenue to February 2021

Interactives: Guidance and training

In total, **40** data animations published since March 2020 (**8** incl. L&RS involvement).

For step-by-step technical (interactive) training, we have a Data Animations 'How-To' guide

Not for circulation outside L&RS

Data animations

How-To Guide

Version 1.1 (July 2021)

Seirbhís Leabharlainne 7 Taighde
Library & Research Service

A handy reference manual and also a presentation provided to all staff

Using Flourish

Add a chart title, subtitle, header and footer

Step 8

The chart needs formatting. Start with chart title and subtitle.

Click on 'preview' tab.

Toggle on 'Change title style'

Line Height: 1.2 (Default)

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Using Flourish

There are 6 basemaps

1. Local Authorities
2. Counties
3. NUTS2 regions
4. NUTS3 regions
5. DAI Constituencies
6. Electoral Divisions

Maps Sidenote 1

Everyone loves a map.

Want to add a map element to your story? We have you covered.

Click out the 'Basemaps/templates' folder.

Toggle on 'data' and input your data.

and change your title subtitle and footer accordingly.

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Using Datawrapper

Examples

Here are some examples of using Datawrapper on blog posts and in-focus pages, to date.

[Blog] Homeless accommodation and COVID-19
<https://www.oireachtas.ie/en/wp-content/uploads/2020/09/homeless-accommodation-and-covid-19/>

[In-focus] Housing and homelessness
<https://www.oireachtas.ie/en/wp-content/uploads/2020/09/housing-and-homelessness/>

[Blog] COVID-19 emerging hotspots - risks and policy response
<https://www.oireachtas.ie/en/wp-content/uploads/2020/09/covid-19-emerging-hotspots-risks-and-policy-response/>

[Blog] Best areas and COVID-19
<https://www.oireachtas.ie/en/wp-content/uploads/2020/09/best-areas-and-covid-19/>

[Blog] The number of COVID-19 cases in the Republic of Ireland
<https://www.oireachtas.ie/en/wp-content/uploads/2020/09/the-number-of-covid-19-cases-in-the-republic-of-ireland/>

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Library & Research Service

My Advice: YEOTY

What our experience can tell you

Our (evidence-based) experience tells me that Data Visualisation / visual research:

- Is highly impactful / attention grabbing (brings data to life)
- Is easily (and more successfully) promoted via Social Media
- Is highly engaging
- Promotes/provokes debate/discussion
- Addresses information overload
- Is produced with minimal expertise (particularly in more recent years)
- Is produced with minimal (if any) cost

Specific to YEOTY, using Data Visualisation:

- Gives students an opportunity to be creative and 'showcase' their work (think *BT Young Scientist & Technology Exhibition*)
- Teaches students to avoid unnecessary commentary and get to/keep to the point
- Underscores the importance of understanding your audience's requirements in scoping your research (a lifelong lesson)
- Teaches students about using 'Big Data' databases and multiple sources around a single theme
- Facilitate students in building an intuitive narrative around their research (which helps with framing the research question)
- Teaches students how to synthesize and interpret complex data in an innovative way to deepen their understanding
- Encourages students to 'think visually' using memorable illustrative research methods (and by association, to think about research accessibility, succinctness, impartiality, etc.)
- Builds data visualisation skills which are increasingly desirable/essential requirements in the profession

Thank you!

Feel free to contact me / connect with me

Darren Lawlor

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Twitter: [@law_lord](https://twitter.com/law_lord)