WESTERN DEVELOPMENT COMMISSION

Capturing Real Time Regional Economic Trends:

Google Mobility data to February 2021

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WDC Insights
Providing insights on key issues for
the Western Region of Ireland

Contents

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Introduction

The current public health crisis has resulted in an unprecedented collapse in economic activity. Policymakers and stakeholders face important data gaps due to the inherent lag between economic activity and the publication of official statistics. To assess economic activity closer to real-time in the Western Region and wider Atlantic Economic Corridor (AEC), the Western Development Commission (WDC) has compiled a **set of timely economic indicators** in an attempt to bridge this gap.[1] The WDC acknowledges that this indicator set is limited given the lack of detailed and frequently published official economic data at the county level. To address this limitation the WDC aims to supplement the regular indicators report with a series of ad-hoc reports based on less conventional data sources. This report is the first such supplement to the **third Timely Economic Indicators report** and provides an update of the **previous Google Mobility Report** to include the period up to February 13th.

What is Google Mobility?

Google Mobility is a publicly available dataset compiled by Google to provide insight into how peoples' movements have changed throughout the pandemic. The dataset provides Google related data on visitor numbers (or duration for the residential category) to various categories of location each day. The categories are defined by Google as follows:

Retail & Recreation	Grocery & Pharmacy	Parks
• Mobility trends for places such as restaurants, cafés, shopping centres, theme parks, museums, libraries & cinemas.	• Mobility trends for places such as supermarkets, food warehouses, farmer's markets, specialty foodshops & pharmacies.	• Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas & public gardens.

Public Transport	Workplaces	Residential
• Mobility trends for places that are public transport hubs, such as underground, bus and train stations.	• Mobility trends for places of work.	• Mobility trends for places of residence.

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[1] Under the WDC Act 1998 the WDC's statutory remit is to '*...foster and promote the economic and social development of the Western Region'*. The Western Region is the seven counties of Mayo, Roscommon, Galway, Sligo, Leitrim, Donegal and Clare. The AEC is set out in Ireland 2040 as an initiative to drive balanced regional development and encompasses the Western Region as well as Kerry and Limerick.

Interpreting Google Mobility Statistics

Google measures visitor numbers (or duration in the case of the residential category) and compares changes relative to a pre-pandemic baseline. The baseline days represent a normal value for each of the week, given as the median value over the five-week period from January 3rd to February 6th, 2020. It is important to note that a return to the baseline does not necessarily equate to a return to "normal."[2] Looking only at baseline deviations will not accurately capture the comparative changes in normal mobility levels. Google offers the following advice when using the Mobility dataset:

Recognise Category Characteristics

- ☐ Visits to Parks and outdoor spaces are highly influenced by weather and holidays – we would expect larger spikes in this category.

- ☐ The Residential category shows a change in duration—the other categories measure a change in total visitors. You should therefore be careful in making comparisons to other categories.

- ☐ People already spend a lot of time at home (even on workdays), we'd generally expect smaller changes than in other categories.

Be Careful with Comparisons

- ☐ Avoid comparing day-to-day changes. Especially weekends with weekdays.

- ☐ Avoid comparing levels across countries or regions. Regions can have local differences in the data which might mislead.

- ☐ Don't infer that larger changes mean more visitors or smaller changes mean less visitors.

Data Note

To avoid a comparison of day-to-day changes a 7-day moving average was constructed, unless noted otherwise. The aggregates for the Western Region and AEC are reported, as well as each individual county. The Western Region and AEC aggregates should be interpreted carefully as they are constructed using the simple mean of the available data from each county for each day. The daily county data is converted into a 7-day moving average with no adjustment for the number of observations (as the WDC cannot access this data). Data gaps can be seen in some counties for some categories. Gaps arise where there is insufficient data available to meet Google's quality and privacy thresholds, for more detail see **here**.

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[2] The mobility data may suggest higher relative levels of mobility in a region/county, but this is based on a common baseline that fails to capture seasonal mobility. For example, historical summer retail and recreation mobility in Clifden is likely to have been much higher due to seasonal tourism than the winter months and this disparity between winter and summer is likely to be much larger than say in Dublin City.

Insights on Regional Economic Activity

The previous WDC Google Mobility reports noted strong regional variation during the summer months and suggested that this variation may have been driven by a "staycation" effect. Mobility reached or exceeded pre-pandemic levels in Retail & Recreation, Grocery & Pharmacy and Public Transport mobility, but this was only true in the Western Region and AEC. While these trends provided an indication of a strong increase in regional economic activity the worry was that these trends might not be sustained as they were likely driven by summer domestic tourism. This worry was borne out in the mobility data as any "staycation" effect abated from September. This suggested a contraction in economic activity even before the additional public health restrictions imposed in Dublin at the end of September, the Border counties, and the eventual National Level 5 (L5) restrictions at the end of October.

It should be noted that making inferences from the mobility data is highly problematic given we do not know what "normal" levels of mobility are during any period for any region/county. The data instead compares mobility in each category to a baseline that captures pre-pandemic mobility during January and February 2020. The baseline will fail to capture important seasonal and regional effects that may be sizeable for WR and AEC. For example, WR and AEC would normally have high levels of seasonal overseas tourism during the summer months and the economy in these regions is more reliant on the tourism sector, as discussed in previous **WDC analysis**.

That being said, the mobility changes in the key categories have been reflected in the official labour market statistics. The Western Region and AEC were found to have been hit comparatively harder in the labour market by the initial COVID-19 shock, but this regional labour market variation then subsided through the summer reopening phases. **Lydon & McGrath (2020)** explain how the regional dynamics of the COVID-19 labour market shock are influenced by pre-existing employment patterns and structural issues. Those factors suggest the Western Region and AEC are comparatively more exposed to the negative labour market shock of COVID-19.

The October L5 restrictions were less stringent than March 2020 and this was reflected in the mobility data. Retail & Recreation, Grocery & Pharmacy and Workplace mobility from November, up until the ease in restrictions during December, fell but remained above March levels. As documented in the **WDC Timely Economic Indicators**, the labour market impact broadly followed the regional variation observed during the initial phase of restrictions during March and April.

The eased restrictions during December coincided with a sharp rise in mobility. Retail & Recreation, Grocery & Pharmacy as well as Workplace mobility all reached or exceeded the summer peak nationally, and in Dublin, the Western Region & AEC.

There was much less regional variation in mobility during the December re-opening phase compared with the summer. One possible explanation is that the December rise in mobility was driven less by domestic tourism and more by local economic activity. Public transport mobility trends appear to support this explanation. During the summer, public transport mobility was rising and exceeded pre-pandemic levels in the Western Region and AEC. Nationally and in Dublin, public transport mobility remained below the baseline and for part of the period was falling when Western Region and AEC mobility was rising.   During December, there was much less regional variation in public transport mobility.

Following the December L5 restrictions, Retail & Recreation, Grocery & Pharmacy, Workplace and Public Transport mobility fell considerably and suggests compliance with the public health restrictions. The December L5 restrictions were more stringent than October and again this was reflected in the mobility data and the official labour market statistics. During February, mobility levels in these key categories was back to May/June levels. The share of the labour force in receipt of the Pandemic Unemployment Payment (PUP) was also back also back to June levels during January. Kerry (26 per cent) had the highest share nationally, during the week ending the 26th of January. Donegal (23 per cent) was 3rd and Mayo (22 per cent) was 6th. December Emergency Wage Subsidy (EWSS) data shows most Western Region & AEC counties below the national average and this is again related to structures of employment and economic activity.

The current levels of "non-employment" gives us an indication of future "unemployment". It seems reasonable to anticipate similar regional variation in eventual unemployment rates. The Central Statistics Office Labour Force Survey estimated a COVID-19 adjusted national unemployment rate of 19.4 per cent for Q4 2020. The Winter Economic and Social Research Institute quarterly economic report projects a national average unemployment rate of between 14.5-15 per cent for 2021.

In the short to medium term, a worry for the Western Region and AEC is the length and severity of restrictions into the future and highlights the importance of job retention and enterprise survival during periods of restrictions. In the longer term, the extent of economic recovery will ultimately depend on the ability to enhance productive capacity and grow employment. The WDC argue that Infrastructure, the '3Es' (Enterprise, Employment and Education) and Innovation are the key levers for effective regional development as detailed in WDC (2010) and WDC (2011).

The above must be caveated with a recognition that this is an unconventional data set and the WDC does not have access to the number of observations for each county in each category or have knowledge about what "normal" mobility is.

Regional Mobility Data

Figure 1. Regional Retail and Recreational Mobility

Source: Own Calculations from Google Mobility Data

Figure 2. Regional Grocery & Pharmacy Mobility

Source: Own Calculations from Google Mobility Data
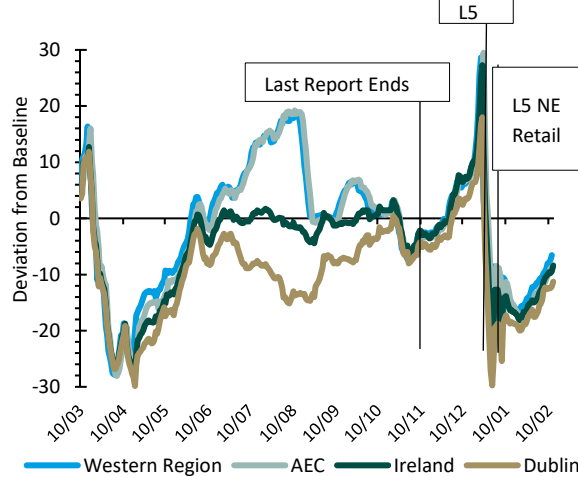
Figure 3. Workplace Mobility
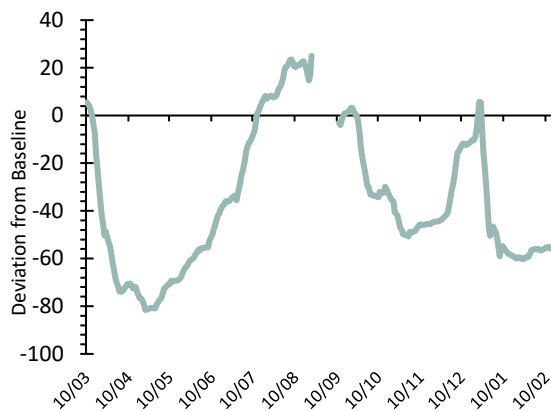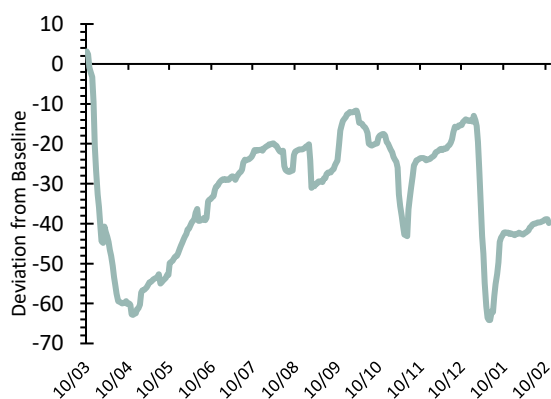

Source: Own Calculations from Google Mobility Data

Retail & Recreation Trends

- Trends suggest a regional "staycation" effect during July and August that ended before the national restrictions imposed at the end of October.

- Eased restrictions during December coincided with a sharp rise in mobility. Retail & Recreation mobility reached or exceeded the summer peak. Less regional variation in mobility was observed during December compared with the summer.

- Following December level 5 restrictions mobility levels have fallen sharply.

Grocery & Pharmacy Trends

- Sharp decline in WR and AEC from mid-August is partly explained by missing data (see county data below) but trend was clearly downward.

- Trends suggest a "staycation" effect may explain summer spike in mobility in WR & AEC.

- December L5 restrictions have coincided with a convergence of mobility levels nationwide to below the pre-pandemic baseline.

Workplace Trends

- Increase in mobility during re-opening phases.

- December L5 restrictions were more stringent than October/November. Mobility was below November Levels during January and February.

Public Transport Trends

Figure 4. Public Transport Mobility

Source: Own Calculations from Google Mobility Data

- Mobility in summer was above the pre-pandemic baseline in the AEC and WR and may reflect a "staycation" effect. In December, there was much less regional variation.

- L5 includes severe capacity constraints. Mobility during January and February was close to March/April levels.

Residential Trends

Figure 5. Residential Trends
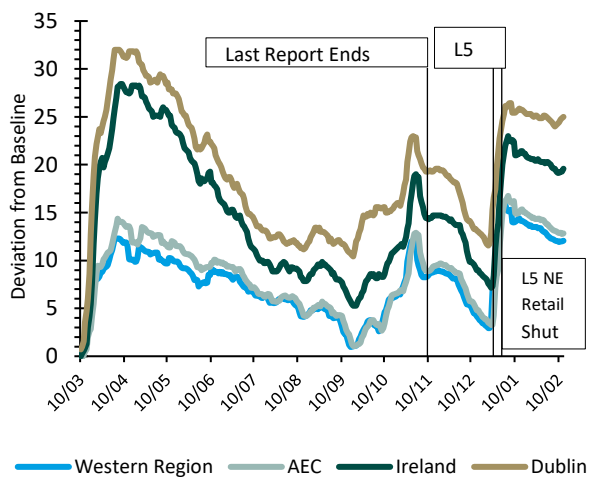
Source: Own Calculations from Google Mobility Data

- Residential trends are the reverse of workplace trends.

- Time spent at home has increased during the enhancement of restrictions and suggests high levels of compliance with public health restrictions.

- Time spent at home during January and February was higher than October but lower than March.

Parks Trends

Figure 6. Parks Trends
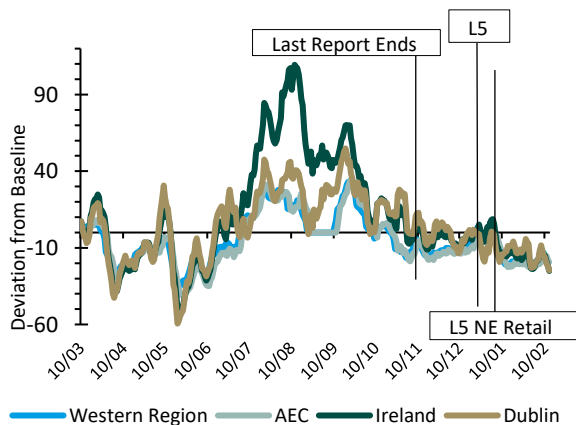
Source: Own Calculations from Google Mobility Data

- Parks mobility is driven by the weather thus a spike should be expected during the summer months.

Google Mobility Trends November-February Update

County Data – Clare

Figure 7. Retail & Recreation
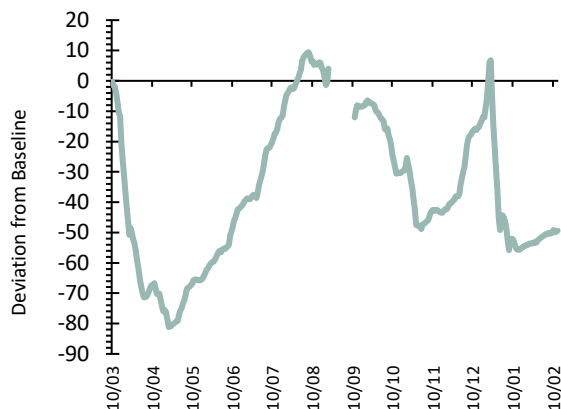
Source: Own Calculations from Google Mobility Data

Figure 8. Grocery and Pharmacy
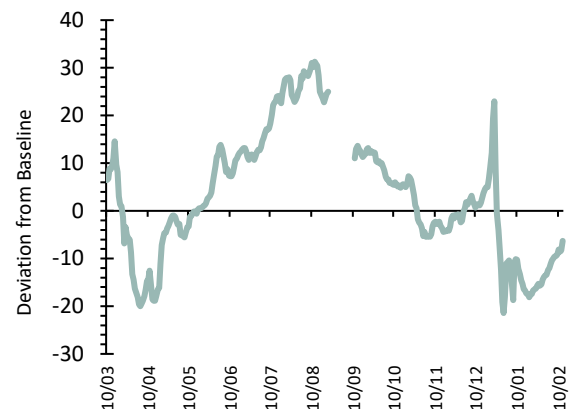
Source: Own Calculations from Google Mobility Data

Figure 9. Parks
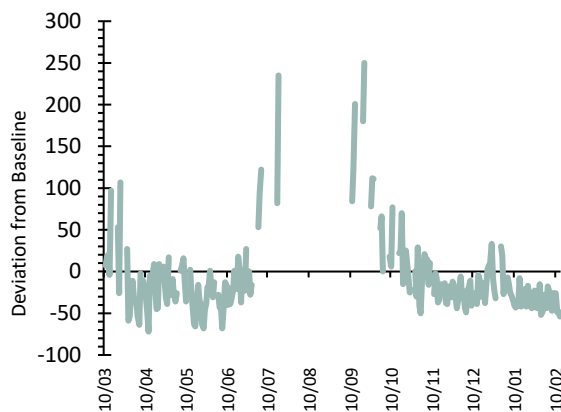
Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data

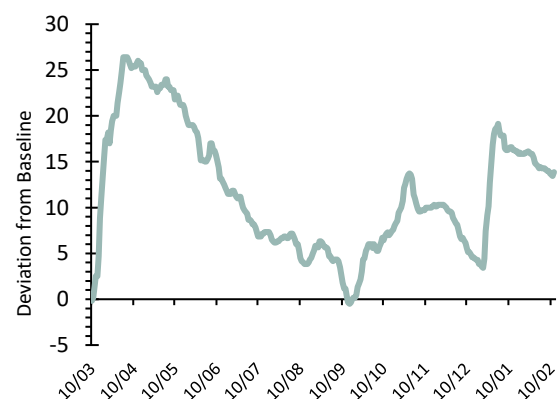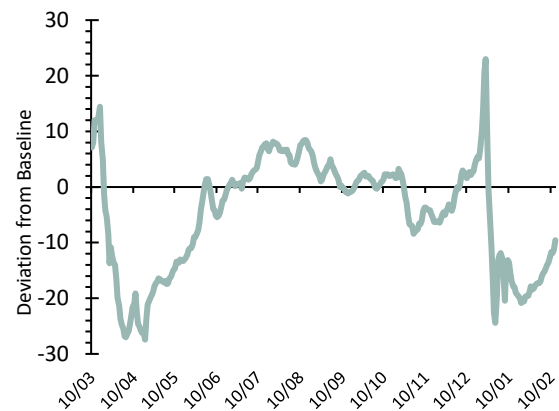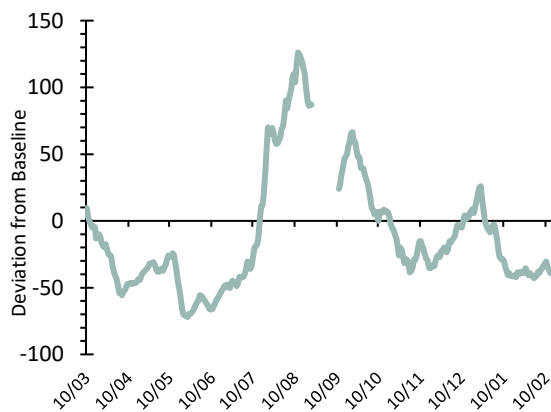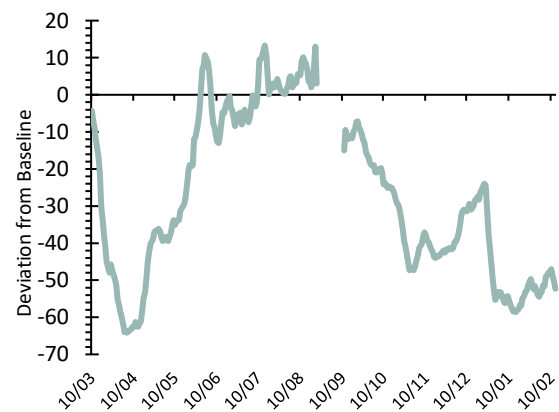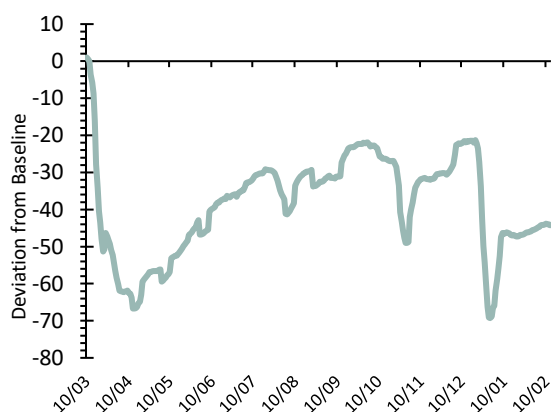*Figure 10. Public Transport Mobility*
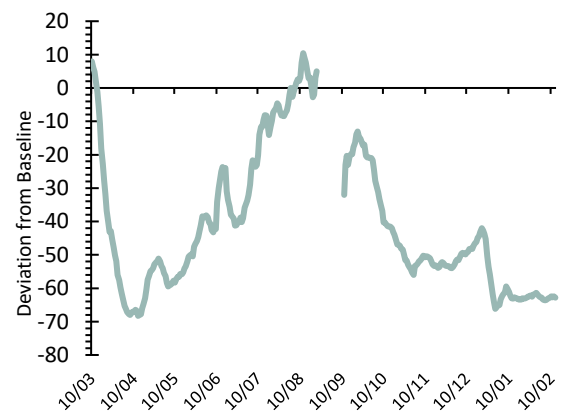
Source: Own Calculations from Google Mobility Data

Figure 11. Workplaces
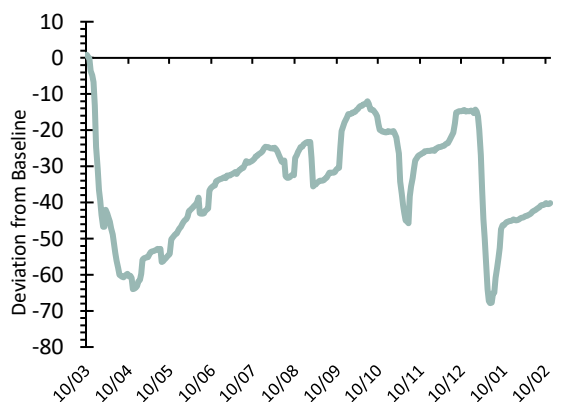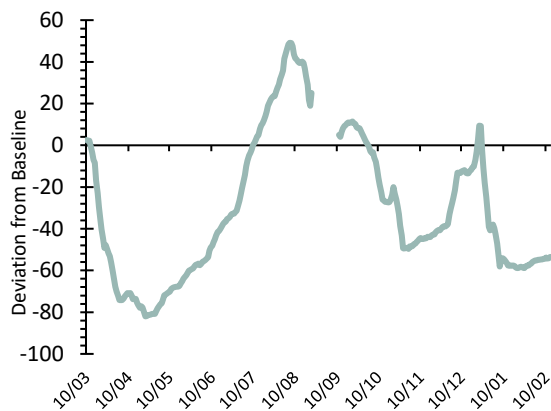

Source: Own Calculations from Google Mobility Data

Figure 12. Residential
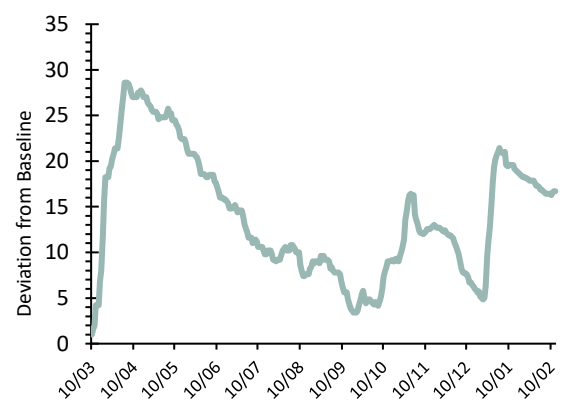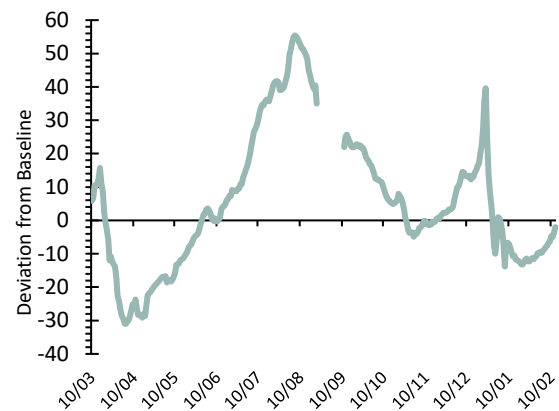

Source: Own Calculations from Google Mobility Data

County Data – Donegal

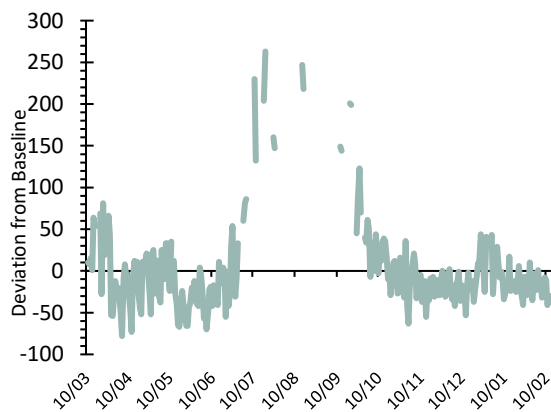*Figure 13. Retail & Recreation*

Source: Own Calculations from Google Mobility Data
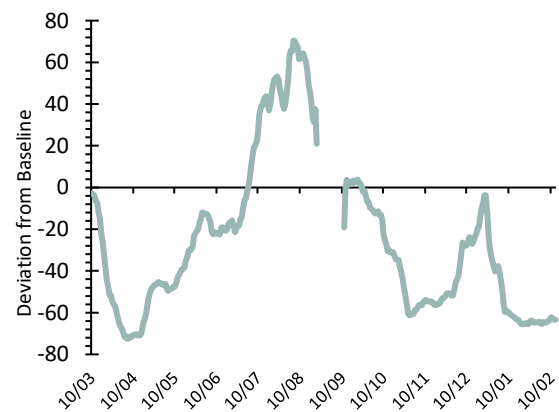
Figure 14. Grocery and Pharmacy
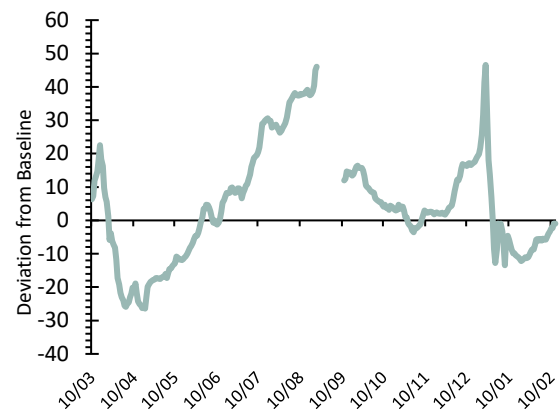
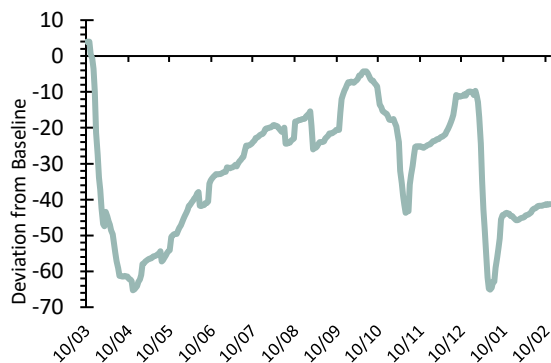*Source: Own Calculations from Google Mobility Data*

Figure 15. Parks
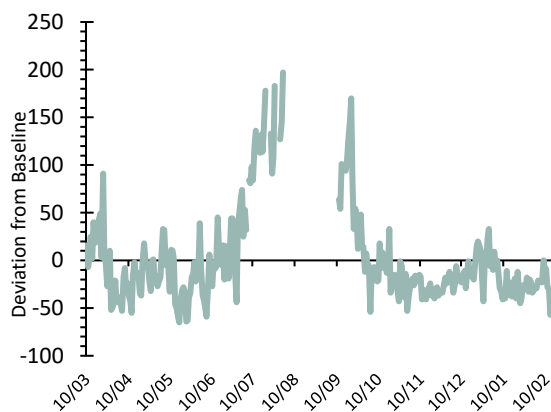
Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data
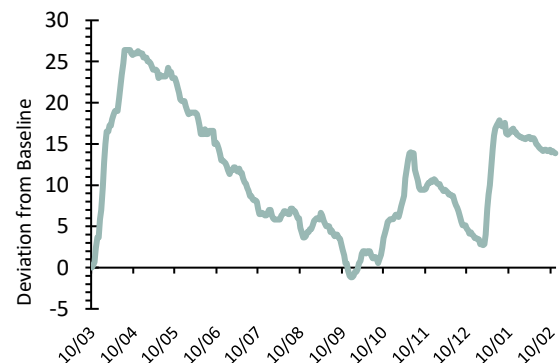
Figure 16. Public Transport Mobility
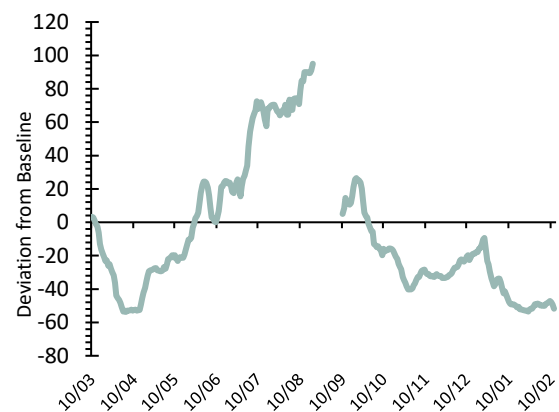
Source: Own Calculations from Google Mobility Data

Figure 17. Workplaces

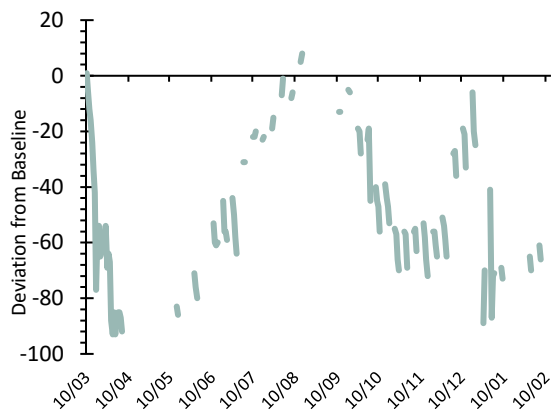*Source: Own Calculations from Google Mobility Data*

Figure 18. Residential

Source: Own Calculations from Google Mobility Data

Google Mobility Trends November-February Update

County Data – Galway

Figure 19. Retail & Recreation
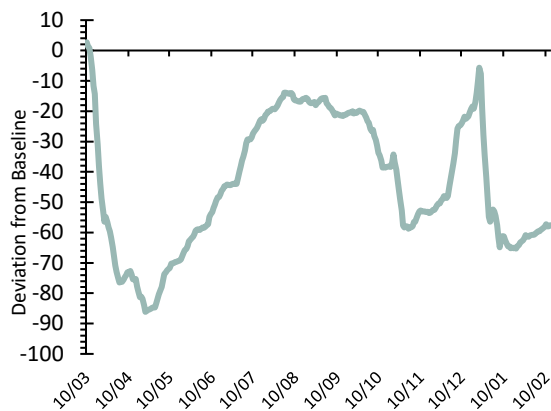
Source: Own Calculations from Google Mobility Data

Figure 20. Grocery and Pharmacy

Source: Own Calculations from Google Mobility Data

Figure 21. Parks

Source: Own Calculations from Google Mobility Data

Figure 22. Public Transport Mobility

Source: Own Calculations from Google Mobility Data

Figure 23. Workplaces

Source: Own Calculations from Google Mobility Data

Figure 24. Residential

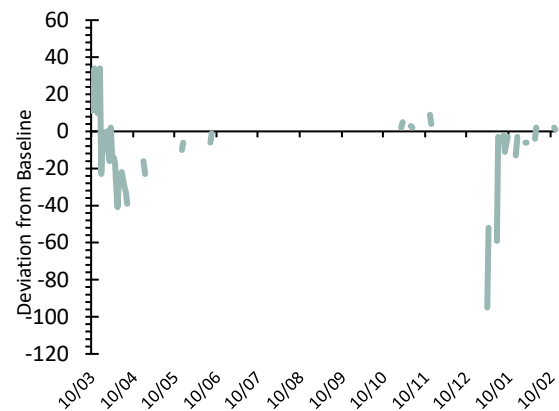*Source: Own Calculations from Google Mobility Data*

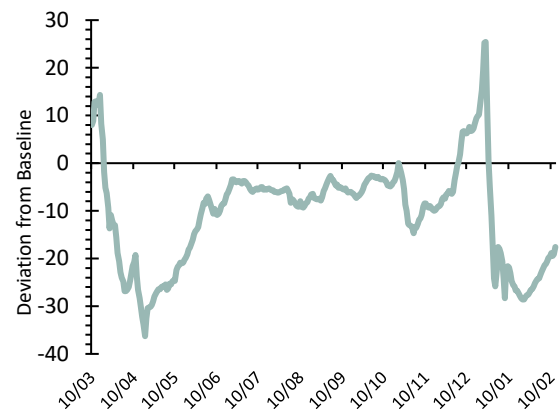**Google Mobility Trends November-February Update**
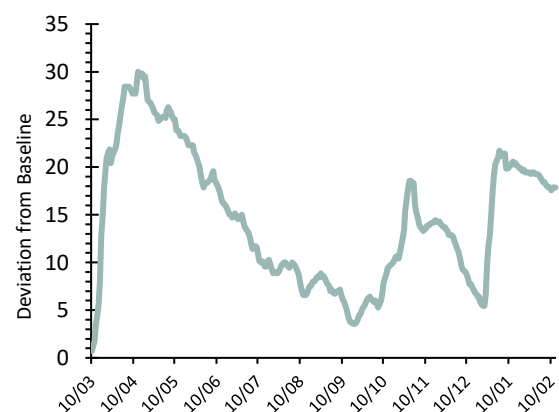
County Data – Kerry

Figure 25. Retail & Recreation

Source: Own Calculations from Google Mobility Data
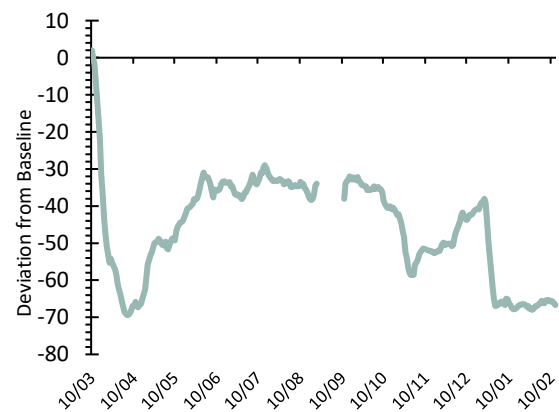
Figure 26. Grocery and Pharmacy

Source: Own Calculations from Google Mobility Data

Figure 27. Parks

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
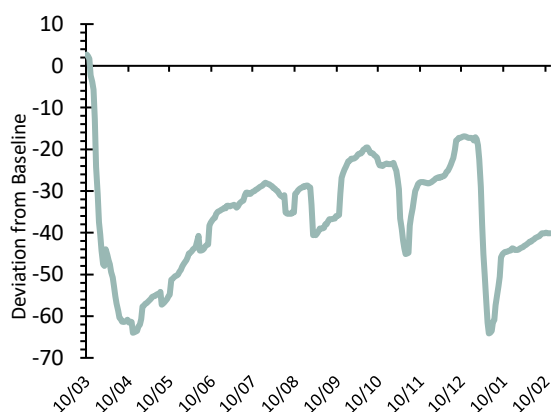*Source: Own Calculations from Google Mobility Data*

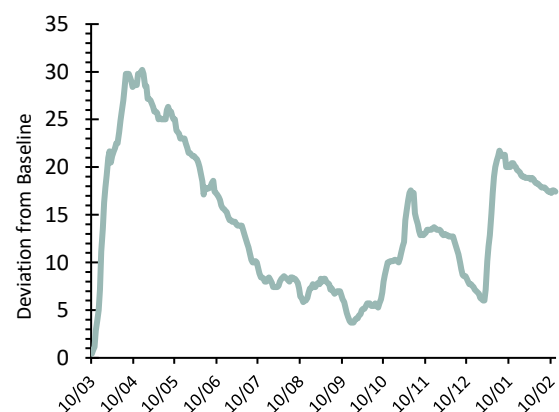*Figure 28. Public Transport Mobility*

Source: Own Calculations from Google Mobility Data

Figure 29. Workplaces

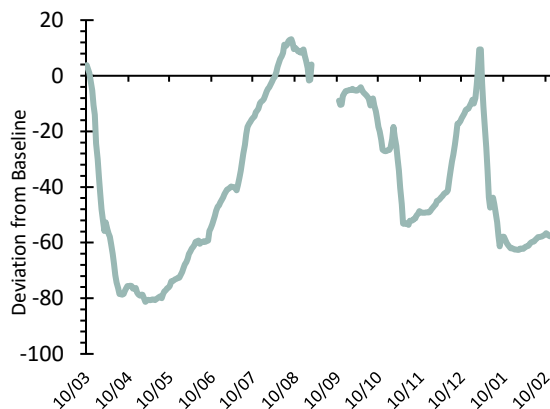*Source: Own Calculations from Google Mobility Data*

Figure 30. Residential

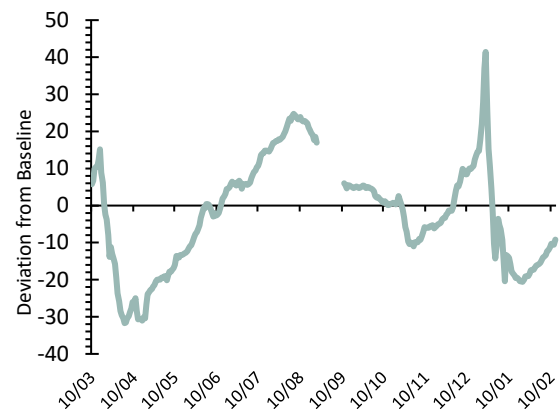*Source: Own Calculations from Google Mobility Data*

Google Mobility Trends November-February Update

County Data – Leitrim

Figure 31. Retail & Recreation

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data

No data availability for Public Transport, Residential or Parks for Leitrim as of 22nd February 2021.

Figure 32. Grocery & Pharmacy

Source: Own Calculations from Google Mobility Data

Figure 33. Workplaces

Source: Own Calculations from Google Mobility Data

Google Mobility Trends November-February Update

County Data – Limerick

Figure 34. Retail & Recreation
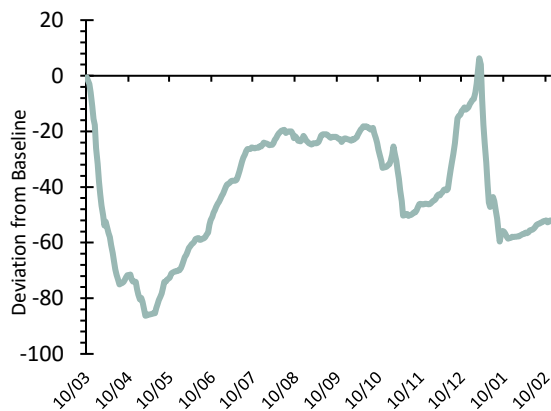
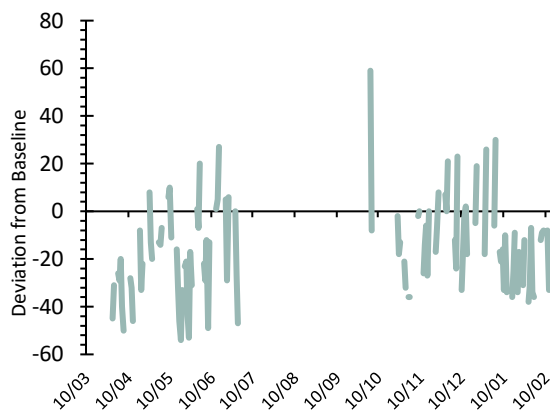*Source: Own Calculations from Google Mobility Data*
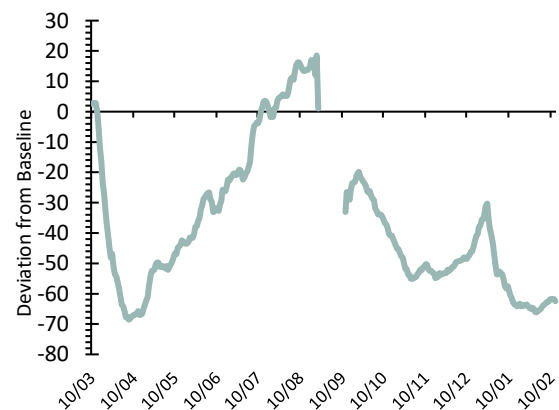
Figure 35. Grocery and Pharmacy

Source: Own Calculations from Google Mobility Data

Figure 36. Parks

Source: Own Calculations from Google Mobility Data

Figure 37. Public Transport Mobility

Source: Own Calculations from Google Mobility Data

Figure 38. Workplaces

Source: Own Calculations from Google Mobility Data

Figure 39. Residential

Source: Own Calculations from Google Mobility Data

County Data – Mayo

Figure 40. Retail & Recreation

Source: Own Calculations from Google Mobility Data

Figure 41. Grocery and Pharmacy

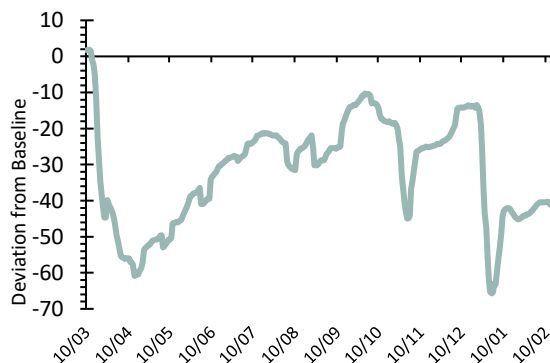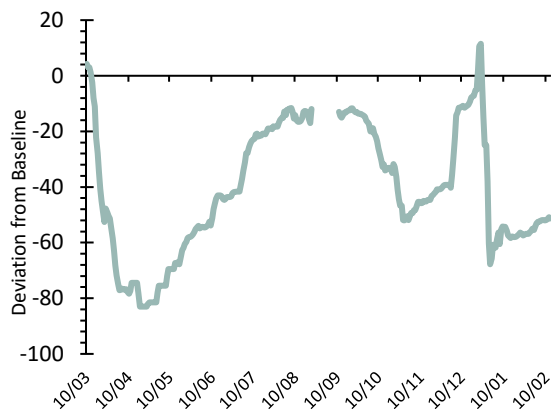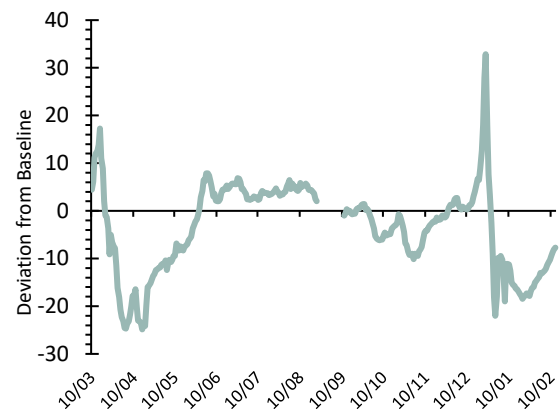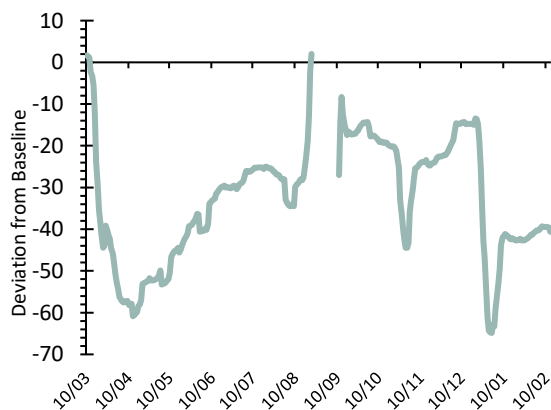*Source: Own Calculations from Google Mobility Data*

Figure 42. Parks

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data

Figure 43. Public Transport Mobility

Source: Own Calculations from Google Mobility Data

Figure 44. Workplaces

Source: Own Calculations from Google Mobility Data

Figure 45. Residential

Source: Own Calculations from Google Mobility Data

Google Mobility Trends November-February Update

County Data – Roscommon

Figure 46. Retail & Recreation

Source: Own Calculations from Google Mobility Data
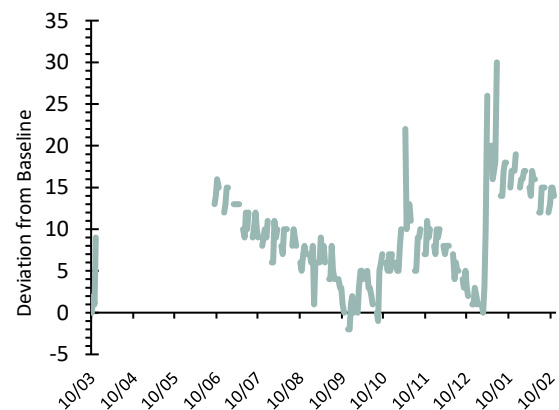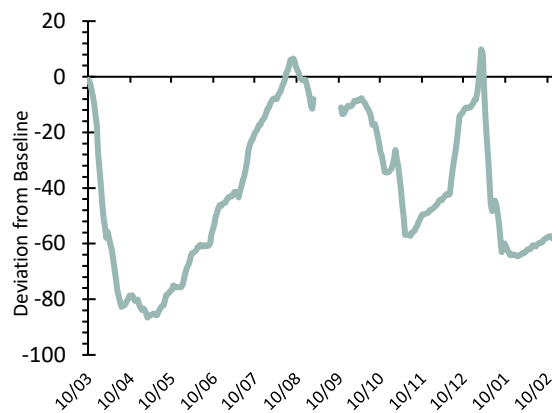
Figure 47. Grocery and Pharmacy

Source: Own Calculations from Google Mobility Data

Figure 48. Workplaces

Source: Own Calculations from Google Mobility Data

Figure 49. Residential

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data

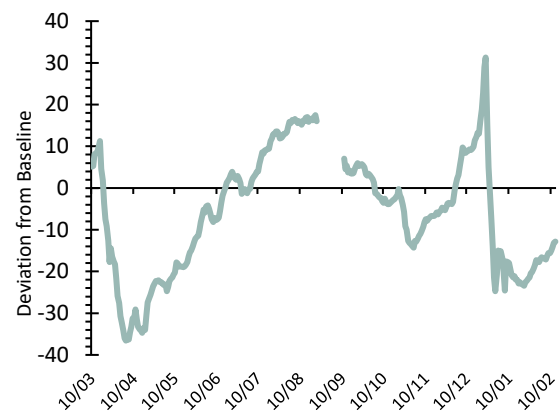- **No data availability for Public Transport or Parks for Roscommon as of 17[h] November 2020**
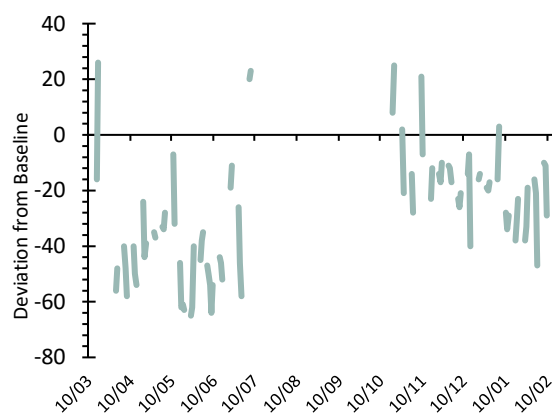
County Data – Sligo

Figure 50. Retail & Recreation

Source: Own Calculations from Google Mobility Data

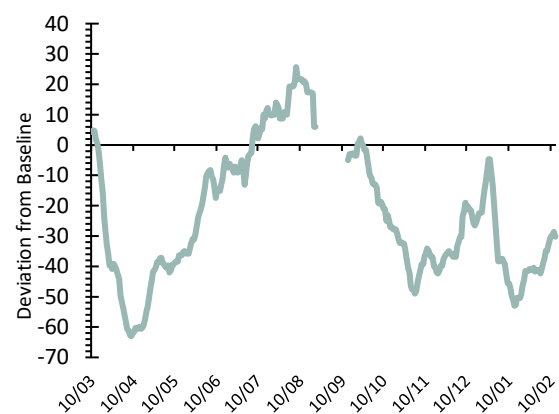### Figure 51. Grocery and Pharmacy

Source: Own Calculations from Google Mobility Data
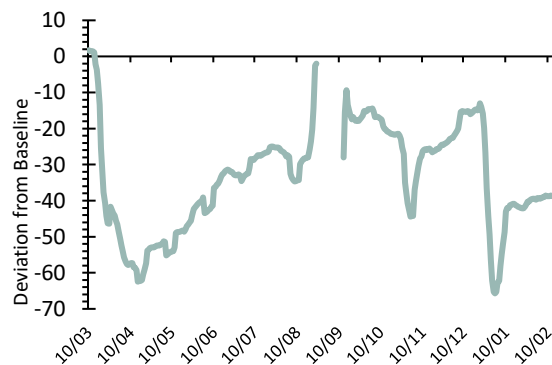
Figure 52. Parks

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data
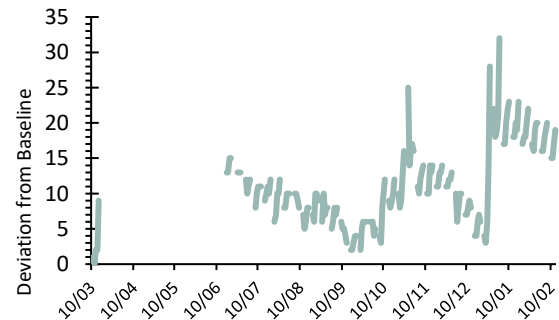
Figure 53. Public Transport Mobility

Source: Own Calculations from Google Mobility Data

Figure 54. Workplaces

Source: Own Calculations from Google Mobility Data

Figure 55. Residential

Note: As there is considerable missing data the raw data rather than the 7-day rolling average is illustrated.
Source: Own Calculations from Google Mobility Data

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Supporting communities to grow,
investing in businesses to scale and
planning for the future of the Western Region.