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The impact of Covid-19 on consumer spending

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Abstract.

This letter describes the impact of the pandemic on private consumption, which accounts for just over half of national income (GNI*). We outline a methodology for using high-frequency data to track developments in consumption, and show the importance of accounting for pandemic-induced changes in spending patterns when measuring aggregate output. The expansion of firms' online presence has mitigated the effect of the pandemic on total spending. The impact of the pandemic has varied across income groups with low income households more likely to see spending falls. While there may be significant forced savings accumulated as a result of the pandemic, this has largely been concentrated in higher income households. These households spend relatively less of each euro of additional income in normal times, meaning that the boost to consumption when the pandemic is over is likely to be lower than would be the case if the shock had been equally distributed.

1. Introduction

The Covid-19 pandemic has had a large impact on the domestic economy, of which spending by households is a substantial component. Consumer spending accounts for half of national income (GNI*) and in the second and third quarter of 2020 it fell by 13.5 percent, compared to a year earlier. Daily data see an average *fall* in personal card spending of 3.3 per cent in October and November, compared to the same months in 2019.² Using a novel methodology which accounts for spending weights, we use the high-frequency card payment data alone to estimate a 12.8 per cent year-on-year decline in aggregate consumption in the second and third quarters, very close to the National Accounts data for the same period.

This letter does four things. First, we use the Bank's card payment data to show the scale of the downturn in consumer spending, and how it has impacted highcontact settings such as restaurants, travel and entertainment particularly sharply. Second, we analyse the relative roles of the public health restrictions themselves, and show that restrictions have meant that those who did not suffer a change in their labour market circumstances still reduced their spending

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McElligott, Caroline Mehigan, Gerard O'Reilly and Maria Woods. Remaining errors are our own. ² Daily data is not available at sectoral level and is thus difficult to adjust for non-card spending effects.

significantly. Third, the pandemic has seen a significant reallocation between different types of spending. We outline a method for understanding the impact of reallocation in consumer spending baskets on overall consumption growth during the pandemic. Fourth, we show that a significant proportion (between 50 and 88 per cent) of savings accumulated during the second quarter may be forced. These savings have been largely concentrated in higher income households. Further, we show that these households spend relatively less of each euro of additional income in normal times, meaning that the boost to consumption when the pandemic is over is likely to be lower than would be the case if the shock had been equally distributed.

We focus on the short-run effect of Covid-19 on consumption dynamics. While it is likely that the pandemic will have permanent effects on consumption preferences, these effects are beyond the scope of this Letter.

2. Spending during Covid-19

The Covid-19 pandemic, and the measures to contain the spread of the virus, have had an impact on consumer spending through three different channels:

- Opportunity to Spend: Restrictions on activity have limited opportunities to spend over an extended period (Hopkins and Sherman, 2020), shifting spending towards available goods and reducing overall spending. With incomes supported, the reduced opportunity to spend has generated a rise in savings that can be thought of as forced savings.
- 2) Willingness to spend: Living with the virus has changed the way many people live. Even without formal restrictions consumers can avoid activities perceived to be high-risk in terms of contracting the virus (Krueger *et al*, 2020).
- 3) **Precautionary Saving:** When uncertainty increases, consumers tend to reduce their discretionary spending and increase their precautionary savings. Thus, actual and expected income loss can cause people to save more (Heffernan, Saupe and Woods, 2020).

The interactions between the three channels described above can be seen in Figure 1. Those who experienced income declines and/or saw changes in labour market activity were most likely to reduce their expenditure since March. However, large numbers of people who remained in employment and those who saw no changes in their income also registered spending declines, reflecting the roles of reduced opportunities for consumption, and changes in the willingness to spend due to the virus and precautionary saving.



Figure 1: Share of respondents who reduced expenditure during the Covid-19 restrictions by change in income and labour market activity, per cent

Source: CSO, Social Impact of COVID-19 Survey June 2020: A Snapshot of Experiences and Expectations in a Pandemic, 2020.

Note: Change in net income since COVID-19 restrictions is recorded as a categorical variable in the survey: Increased, Decreased, or No change.

* Too few observations.

Central Bank of Ireland Data Provides Full Market Coverage of Card Spending

The <u>daily card payments data</u>, which is updated and published on the Statistics webpage of the Central Bank of Ireland's website weekly in Table A.13.2, relates to all point of sale transactions which covers both online and in person transactions (pin and contactless), and ATM withdrawals. The data is a subset of the Central Bank's existing monthly <u>Credit & Debit Card Statistics</u>, allowing for comparison with previous months.

The data captures spending on euro-denominated credit and debit cards issued to Irish consumers and businesses. Cards issued by the largest Irish issuers of credit/debit cards are included in the data collection, ensuring a highly representative dataset with coverage of the vast majority of the card market in both value and volume terms. The real-time spending patterns illustrated during this period bring useful insights, which would not be attainable with lower-frequency data. Studies from the <u>ECB</u>, <u>Reserve Bank of Australia</u>, <u>Federal</u> <u>Reserve</u> and <u>Bank of Italy</u> also show the benefits of high-frequency retail transactions data as early indicators of household consumption and economic activity.

Figure 2 shows developments in spending estimated from cash transactions and personal card payments since early March 2020. Over this period, spending levels have been inversely related to changes in the severity of the public health measures in place at a given time.³

March to June

Between the introduction of the first containment measures, on March 12th, and the middle of April, total personal card spending (ATM and point-of-sale) fell by over a third and to a level 40 per cent lower than the same month in 2019. Some sectors fell more sharply than others. Consumer facing services were worst hit. Accommodation, Transport and Restaurant card spending (Figure 3), in particular, declined substantially during this period.⁴ In April, the month after schools, childcare, pubs and cultural sites closed, restaurant spending had fallen over two-thirds, whilst travel spending was down over 80 per cent, compared with the same month in 2019.



Figure 2: Daily data: cash and personal card payments compared to a year earlier, per cent

Final Observation is 23rd November 2020

Source: Central Bank of Ireland, Credit and Debit Card Statistics A.13 and A.13.2; Oxford COVID-19 Government Response Tracker, Blavatnik School of Government.

Note: Spending series are presented as 7-day moving averages; Stringency index is measured on a 0-100 scale where 100 signifies severe containment measures.

³ The Stringency Index is a composite measure based on eight policy response indicators recording information on containment and closure policies including school closures, workplace closures and restrictions in movement, rescaled to a value from 0 to 100 (100 = strictest) from Hale et. al (2020).

⁴ Refunds processed by credit cards were likely a factor in some sectors. Personal credit card spending in the Transport sector was negative in Sept 2020. However, we are not able to ascertain the level of refunds in any given sector in a particular month.

In contrast, however, card payments on Groceries and Perishables grew strongly over this period by 38 per cent year on year between March and June. A reallocation from spending outside to inside the home is a factor here. For example, McCarthy et. al (2020a) find 87 per cent of respondents to a national survey were working entirely from home in the first week of May 2020.

July to September

As the containment measures began to be eased from May, total card spending began to rebound, recovering, in year-on-year terms, to 2019 levels in late June. Two factors are likely at work here: restored opportunity to spend and pent-up demand. Spending did not register sustained growth on 2019 levels over the summer, despite further easing of restrictions and in part due to the reduced role for pent up demand after the initial opening. On average, total personal card spending was down 1.8 per cent over the July to September period, compared with a year previously. This was a substantial improvement on the 28 per cent annual declines seen, on average, in the April and May period. Retail sales data confirm this improvement, increasing by 9.7 per cent year on year in September.



Figure 3: Change in card payments compared with same month in 2019 by sector, per cent

Source: Central Bank of Ireland, Credit and Debit Card Statistics, Table A.13 and authors' calculations.

Final observation is October 2020.

The recovery in spending during the first phase of eased restrictions between July and September was uneven across sectors. For example, limits on the number of people that can be accommodated indoors continued to reduce consumption in such settings. Retail sales data (Figure 4) show that on average, between July and September 2020, bars registered sales 46 per cent lower than the same months in 2019, while spending on clothing and textiles was broadly similar in both years and, in contrast, sales of household equipment was up around one quarter over the same period in 2019.

October and November

More recent data on daily card spending show that the re-introduction of further national restrictions in October was followed by a sharp contraction in spending (11.5 per cent on the 28th October compared to the average daily card spend in October 2019), this has remained 6.6 per cent lower, on average, in the first three weeks of November compared to the average daily spending level in 2019. That this fall is substantially smaller than the fall in April and May provides some evidence of adaptation over time by both consumers and retailers in learning how to shop and sell safely.



Figure 4: Retail sales index annual growth in selected sectors (per cent)

Source: CSO, Retail Sales Index and authors' calculations.

While data are not available at the sectoral level for November, October card data show that face-to-face service sectors have been hardest hit in the second restrictions phase. Restaurant (transport) payments were down 21.9 per cent (56.3 per cent) year on year in October (Figure 3). Retail spending remains robust however, 11 per cent higher in the month compared to 2019 (Figure 4).

When a full set of data are available, it will be possible to undertake further work to understand the comparative effects of the first and second periods of restrictions and opening.

3. Using card payment data to understand aggregate consumption

Two features stand out from the description of developments in Section 2. There has been a severe contraction in aggregate consumption since early March 2020 and within that, there has also been a substantial reallocation of spending compared with previous long-established spending patterns.

National accounts data are released with a lag of between two and three months. During the pandemic, policymakers need access to more timely analysis of the scale and depth of the downturn, and in which sectors is it concentrated. For example, the first public health restrictions lasted from 27th of March until the 18th May, National Accounts data on this period were not released until 7th of September. Fortunately, Central Bank of Ireland Card payment data can provide a timely indicator of the impact of the pandemic on aggregate consumption. However, using the card data to provide an estimate of aggregate consumption requires two considerations. First, does the card data have adequate coverage across all spending categories, or sectors? As cards are not used for all spending transactions data coverage is partial. For example, services are under-represented in the card data (see below). We adjust for this by weighting the card spending changes in each sector by their share in the national accounts. Second, has the relative size of spending in each sector remained constant over the last 12 months? During the pandemic this is particularly important as people are spending now on different goods and services than a year ago. For example, there has been a large switch away from eating in restaurants and towards food and grocery spending. We adjust the card data to reflect this. This reallocation has occurred both between sectors and within sectors.

Covid-19 related reallocation: between sectors

The recession in 2020 has affected sectors differently, depending on their exposure to containment restrictions and their suitability to move online. Card data allows us to capture reallocation between sectors. Prior to 2020, sectoral shares in total card spending were broadly stable and the average sectoral share between March and October in 2019 and 2020 are shown in Table 1 below. The Covid-19 shock has resulted in a significant reallocation between sectors when comparing the period March to October 2019 with the same period in 2020.

Table 1: Sectoral share in total card payments and year on year spending change, per cent (March-October)

	Share in total card data		Change in value (per cent)
	2019	2020	2019 to 2020
Retail	47.4	55.5	20.4
of which, Groceries/Perishables	20.0	26.3	33.9
of which, Clothing	5.4	4.7	-7.0
Services	25.6	18.4	-24.2
of which, Transport	7.8	2.6	-64.2
of which, Accommodation	4.6	1.9	-54.1
of which, Education & Health	3.9	3.6	0.7
of which, Professional Services	5.2	5.2	5.9
Social	10.7	7.9	-21.8
of which, Restaurants	6.7	4.6	-26.6
Other	16.3	18.2	15.3
Total	100.0	100.0	3.6

Source: Central Bank of Ireland, Credit and Debit Card Statistics Table A.13 and authors' calculations.

For example, total retail spending accounted for 47 per cent of card spending in 2019 but over 55 per cent of card spending a year later, with this reallocation driven by changes in the groceries and perishables category. This category accounted for over a quarter of total card spending between March and October 2020, an increase of almost a third compared to the share in this spending category a year earlier (one fifth). In contrast, services have seen substantial falls in relative spending shares. Having accounted for a quarter of card payments prior to March 2020, the services spending share dropped to 18 per cent in the eight months to October 2020. The reallocation away from services is evident in the large annual falls in spending volumes in transport (64.2 per cent) and accommodation (54.1 per cent). Similarly, social services have seen large volume and share declines between March and October 2020. Spending on recreation and hospitality activities, which accounted for 10.7 per cent of all card spending in 2019, was down to 7.9 per cent in 2020, with restaurant spending seeing both share and volume declines of over one quarter to the end of October 2020.

Covid-19 related reallocation: within sectors

In addition to relocation between sectors, reallocation can also occur within sector from physical to online purchasing.⁵ Part of firms' efforts to adjust to public health restrictions included increasing their online offerings, facilitating a reallocation from physical to online purchasing. For example, IE Domain Registry saw new .ie domain names increase by close to half in April and May 2020, while McGeever et al. (2020) show growth in new retailers operating with an online presence between June and September. Retail sales and card data show that whilst online sales expanded strongly between February and April 2020, this had largely fallen back by August and September to pre-Covid-19 levels. Recently, the Department of Finance (2020) found that card payments have increased since the imposition of the latest level five restrictions. This is confirmed by Central Bank of Ireland card data with the value of online card spending in October 15 per cent higher than the average monthly 2020 value to September and over a quarter higher than the monthly average in 2019. In October online spending accounted for over 42 per cent of all card spending, similar to the June 2020 share. The relative fall-off in online retail purchases between containment phases indicates that firms are using online sales to mitigate the impact of premises closures during lockdown periods.

How reallocation has affected spending falls

The spending shares in the national accounts differ from the spending shares in the card payments data. Table 2 compares the weights of each spending category in the card payment and the national accounts data. There are some differences, for example, the card data shows that cards are used disproportionately for retail (48.2 per cent) as opposed to services spending (24.9 per cent), whereas national accounts data sees these relative weights inverted with retail accounting for 21.7 per cent of total spending and services 49.7 per cent. Consequently, changes in consumption in the national accounts will differ from what is implied by the card data.

⁵ Figure 2 provides evidence of an acceleration in the reallocation from cash to card payments in the early weeks of the COVID-19 pandemic, with the card and ATM series diverging sharply between March and May 2020 before resuming a slower divergence from June onwards – in line with pre-2020 trends.

Table 2: Sectoral share in total spending in 2019, card payments compared with national accounts (per cent)

Card Sector	Weight in Card Data	National Accounts Sector	Weight in National Accounts
Retail	48.2	Retail ¹	21.7
of which, Groceries/Perishables	20.1	of which, Food	7.6
of which, Clothing	5.6	of which, Clothing	3.3
Services	24.9	Services ²	49.7
of which, Transport	7.5	of which, Transport	12.5
of which, Accommodation	4.3	of which Housing, water, electricity, gas and other fuels	25.5
of which, Education & Health	3.8	of which, Education & Health	6.7
of which, Professional Services	5.1	of which, Insurance + Financial Services + Other Services N.E.C	4.9
Social	10.7	Social ³	21.7
of which, Restaurants	6.5	of which, Catering services	12.9
Other	16.2	Other	6.9
Total	100	Total	100

Source: Central Bank of Ireland, Credit and Debit Card Statistics Table A.13; Eurostat, Final consumption expenditure of households; and authors' calculations.

Notes: ¹ Sum of Food and non-alcoholic beverages; Alcoholic beverages, tobacco and narcotics; Clothing and footwear; Furnishings, household equipment and routine household maintenance.

² Sum of Housing, water, electricity, gas and other fuels; Health; Transport; Communications; Education; Insurance, Financial Services, Other Services N.E.C.

³ Sum of Recreation and culture; Restaurants and hotels.

As we have shown, Covid-19 has had a significant impact on spending patterns and we construct an estimate of total consumer spending which takes account of that impact and shows what the effect on the national accounts aggregates would be if they were calculated taking account of the 2020 spending reallocation between sectors evident in the card data, rather than being based on 2019 spending patterns. To do this, we adjust spending changes taking account of:

1) Sectoral weights in the national accounts

2) The reallocation in spending between sectors.

The national accounts methodology generates larger spending falls than the card data alone would indicate (Table 2). Adjusting the national accounts weights for the changes in spending shares in the card data is particularly important given the reallocation in spending discussed above.

To implement this methodology, we use card data to *adjust* the national accounts weights in order to estimate what the reallocation in spending between sectors means for aggregate spending in the second and third quarters of 2020 (Table 3). The year on year growth in card spending is 3.6 per cent between March and October (Table 1). Table 3 shows the contribution to total spending growth using two different consumption weights. Column 1 applies the 2019 national accounts weights to the card data resulting in an aggregate spending fall of 11.3 per cent between March and October. This is due to the relatively large weight of services compared to retail in total spending in the national accounts data. For example, restaurant (food) spending has a weight of 6.5 (20.1) in the 2019 card data and 12.9 (7.6) in the 2019 national accounts data.

Assuming, however, that the changes *within* sectors in the card data *approximate* the economy-wide spending change in each sector, we adjust the national accounts weights for the spending reallocation between March and October of 2020. This suggests (Table 3, column 2) that the increase in food spending (averaging 33.9 per cent year on year during March to October), would add 4 percentage points, on average, to consumption during each week affected. This is a substantial mitigation of the fall in spending as measured in the national accounts.

Sectors	National Accounts Weight (2019)	National Accounts Weights (2019) adjusted for reallocation in 2020
Retail	4.4	6.1
of which, Groceries/Perishables	2.6	4.0
of which, Clothing	-0.2	-0.2
Services	-12.0	-10.2
of which, Transport	-8.0	-3.2
of which, Accommodation	-13.8	-6.8
of which, Education & Health	0.0	0.1
of which, Professional Services	0.3	0.3
Social	-4.7	-4.1
of which, Restaurants	-3.4	-2.8
Other	1.1	1.4
Total	-11.3	-6.8

Table 3: Sectoral contribution to total spending, 2020 March to October (per cent)

Source: Central Bank of Ireland, Credit and Debit Card Statistics Table A.13; Eurostat, Final consumption expenditure of households and authors' calculations.

The difference in these numbers is relevant because if we think about consumption in welfare terms, this suggests the impact on households is not as large as a fixed-weight national accounts approach might suggest. The reason for this is that large spending falls in some items, for example restaurants and transport, are partly offset by significant spending in other sectors, for example food and groceries. Taking accounting of these shifting weights suggests a lower impact on households.

4. Implications for spending and savings

Incomes have been largely supported by the state since March, whilst spending was curtailed due to consumers being unable to visit many retail outlets and recreation/social outlets.

In the absence of substantial income falls, the reduced level of spending has generated a significant increase in savings. Heffernan et. al. (2020) find sharp increases in household deposits during the Covid-19 restrictions whilst the

saving rate in the second quarter was 35.4 per cent, a substantial increase on the pre-Covid-19 savings rate (~10 per cent). This was the largest increase in the savings ratio in the euro area in the second quarter, which is primarily reflects the fact that Ireland suffered the second largest decline in consumption.

The motives for these increased savings: precautionary (due to heightened uncertainty or behavioural changes) or forced (i.e. due to lack of spending opportunities), will determine if high levels of savings might translate into increased spending once the virus abates, restrictions are reduced and the economy re-opens. For example, while savings from reduced spending opportunities may result in elevated spending once the virus abates; savings accumulated due to heightened uncertainties may be used to smooth spending during spells of unemployment if these turn out to be prolonged.

Expectations of future unemployment are important in explaining historical changes in the savings rates. Specifically, unemployment expectations can be thought of as a proxy for precautionary behaviour in savers. ECB (2020) find that unemployment expectations explain a tenth of the elevated savings during Covid-19 in five large euro area countries, the remainder of the increase in Q2 being attributed to forced savings. We apply this methodology to Irish data, using the same simple model. The typical drivers of savings in the literature are unemployment, incomes and some measure of the outlook for the economy. Following ECB (2020), we estimate a model which relates the level of savings in a given quarter to current unemployment, the outlook for unemployment, and income expectations.⁶

Of course, during the Covid-19 pandemic, many employees were furloughed using the pandemic unemployment payment scheme. As such, current period unemployment in the second quarter may suffer from measurement error. To account for this, we estimate the model twice – first using the standard unemployment rate and second using the CSO's Covid-19 adjusted unemployment rate. The CSO refer to these as upper and lower bound estimates on the rate of unemployment during Q2 2020 (see Byrne and Keenan, 2020). Not surprisingly, the resulting estimate of "precautionary savings" for Ireland is quite sensitive to the measure of the unemployment rate used. Using the Covid-19 adjusted unemployment rate (27 per cent in the second quarter) implies that approximately 50 per cent of the increase in household savings in the second quarter could be explained by the model, that is were precautionary. This suggests that 50 per cent of accumulated savings in the quarter were "forced". It is important to note that this measure is an upper bound for precautionary savings. Using the standard unemployment rate yields an

⁶ The outlook for unemployment is derived from the KBC consumer sentiment survey, which asks 1,000 participants per month about their view of whether the unemployment rate will be higher or lower than present twelve months from now. Income expectations are proxied using previous quarter income, as in ECB (2020).

estimate of forced savings of approximately 88 per cent. This is closer to the estimate of 90 per cent "forced savings" by ECB (2020) for the euro are big 5 countries. Either way, these estimates suggest a non-trivial role for precautionary savings during the pandemic to date. This is important because precautionary deposits may be "stickier", i.e. may flow more slowly into consumption as the pandemic eases.

Higher income households see large spending falls...

Figure 5 shows higher income households spend comparatively higher shares of their incomes on trips and holidays, in normal times. Together, card payments on transport and accommodation have seen falls of 60 per cent in the year to date and produced a 10 percentage point drag on our estimate of aggregate consumption in the eight months to October. It is higher income households then, that are likely to have seen the largest, proportionate, spending falls and savings increases. Hacioglu et. al. (2020) find the top quintile of the income distribution account for half of the pandemic-related decline in aggregate consumption in the UK, consistent with the large role of forced savings in ECB (2020).



Figure 5: Consumption-Income shares across the income distribution, by spending category (median, per cent)

Source: CSO, Household Finance and Consumption Survey 2018 and authors' calculations.

Forced savings may be spent slowly...

Understanding how and when forced savings might be spent is important in tracing possible paths for aggregate spending going forward. In this regard, it is important to know whether the income shocks are expected or unexpected, whether they are temporary or permanent (Jappelli and Pistaferri, 2010) and where in the income and wealth distributions households experiencing income shocks are located (Carroll et. al. (2017). As incomes have been largely

supported during the pandemic (Coffey, et al, 2020), any forced savings accumulated during the pandemic shock can be thought of as a positive, unexpected, temporary income shock, accruing disproportionately to higher income households.

Using survey data for Irish households we can estimate the marginal propensity to consume out of a temporary, unexpected shock for households at different points along the income and wealth distributions.⁷ Following methodology in Banco de Portugal (2020), we categorise households by their ability to meet regular expenses out of regular income and/or wealth and estimate the marginal propensity of these households to spend additional, unexpected and temporary income (Figure 6).

Households whose incomes and/or wealth are in excess of their expenses i.e. who are able to save in normal times, tend also to have higher incomes (Horan et al, 2020), and are likely to have accumulated disproportionately high levels of savings during pandemic restrictions. However, whilst these households⁸ account for two fifths of all households in Ireland, they have relatively lower marginal propensities to consume out of income (Figure 6). Out of an unexpected windfall, better off households are likely to spend almost half of the windfall, saving the rest, whilst less well-off households are likely to spend over three fifths of the windfall. This means the recovery in spending in the medium term may be lower than would be the case if the shock had been equally distributed across households, even as public health restrictions ease.

⁷ The Household Finance and Consumption Survey (2018) contains a question asking responding households what portion of an unexpected income windfall, equal to one month's gross earnings, they would spend. The share of this windfall that households would spend as a share of gross income is the measure of marginal propensity to consume (MPC) we use in this letter.

⁸ Following methodology in Banco de Portugal (2020).



Figure 6: Marginal propensity to consume out of income, by ability to meet expenses out of income and save

Source: CSO Household Finance and Consumption Survey 2018 and authors' calculations. *Note:* * Regular household expenses i.e. recurrent non-durable goods and services consumption. NLA (net liquid assets) are defined as liquid financial assets less non-collateralised debt.

Figure 7 shows that more than half of those with additional available money, as a result of pandemic-related restrictions, intend on saving some of that money going forward. Over a third of people intend to spend some of the additional money on home and garden improvements and over a quarter of people hope to use some of the money for future holidays.





Source: CSO, Social Impact of COVID-19 Survey June 2020: A Snapshot of Experiences and Expectations in a Pandemic, 2020.

Note: Spending intentions are not mutually exclusive in this survey. The responses in Figure 7 were gathered in June and are likely to be sensitive to the evolving nature of the virus itself

5. Conclusion

The combination of demand and supply pressures due to the virus and associated containment measures as well as the pronounced impact on sectors typically characterised by in person engagement with customers, for example travel and hospitality, has resulted in the spending impact of Covid-19 being unlike that in previous recessions.

In this letter, we use a high-frequency measure of spending from the Central Bank to establish a number of stylised facts about consumption developments in Ireland during the pandemic. We outline a methodology for using this highfrequency data to track developments in consumption, and show that pandemicinduced changes in spending patterns, alongside national accounts consumption weights are important when examining the impact of the pandemic on aggregate output. However, that the expansion of firms' online presence has mitigated the impact on spending. We find that between March and October consumption declined by 6.8 per cent compared with 2019 levels. State-provided income supports, few opportunities for consumption and on-going economic uncertainty have seen savings rise, all of which will be crucial to spending patterns going forward. We find that approximately half of the savings accumulated during the second guarter of 2020 were precautionary, while the other half were forced savings - resulting from the lack of opportunity to spend coupled with the protection of incomes. Those most likely to have disproportionately curtailed their spending since March 2020 and to have been in a position to accumulate savings are also those with relatively low marginal propensities to consume. This means that the boost to consumption when the pandemic is over may be lower than would be the case if the shock had been equally distributed across households. There is also considerable uncertainty as to where and how quickly these savings will be spent, which will have significant implications for the recovery. For example, will the savings accumulated as a result of public health restrictions be spent in the areas that were closed, including restaurants and hotels? Figure 7 shows that home improvements and future holidays feature highly in households' intentions while building savings is the most likely use. A potential avenue for these savings could be down payments on residential property mortgages. Given the scale of the uncertainty, further work in this area will be required as new data becomes available.

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