PROJECTION OF DEMAND FOR TRUSSELL TRUST FOOD BANKS DUE TO THE COVID-19 CRISIS: QUARTERLY AT THE UK (NATIONAL) LEVEL

National Institute of Economic and Social Research, in association with Heriot-Watt University

NIESR Policy Paper 021

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Date: 14 September 2020

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National Institute of Economic and Social Research
2 Dean Trench St
London SW1P 3HE
T: +44 (0)20 7222 7665
E: enquiries@niesr.ac.uk
niesr.ac.uk
Registered charity no. 306083

This paper was first published in September 2020

Projection of Demand for Trussell Trust food banks due to the COVID-19 Crisis: Quarterly at the UK (national) level

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Abstract

The COVID-19 crisis is continuing to have devastating consequences for the UK population, particularly the poorest segments of society. Based on quarterly macroeconomic scenarios of economic growth, employment and wages from the NIESR's NiGEM model, we provide quarterly projections of persons in the UK facing severe food poverty. From this, we obtain projections of demand for food parcels facing the Trussell Trust food banks. The sources of demand are segregated by those who are unemployed, employed with low income, and the self-employed. Likely demand reflects 22 per cent growth in 2020Q1 over the previous year, rising to 85 per cent and 105 per cent higher demand in 2020Q2 and 2020Q3, respectively. Projected demand in 2020Q4 is about 2.5 times that in 2019Q4. There was 15 percent higher food bank demand in 2020Q1 relative to the counterfactual situation without COVID, with demand rising to 115 per cent above the non-COVID case by 2020Q4. The higher demand in 2020Q1 is due to income losses for employed workers and self-employed, with subsequent large rises in demand from self-employed workers in small businesses. Demand from the unemployed gain prominence in 2020Q3 and 2020Q4.

Headlines

- The NIESR has published the August Review 2020 (NIESR, 2020), providing analyses of a likely macroeconomic scenario of the COVID-19 impact, together with a range of alternate scenarios. This report takes the above likely scenario of the macroeconomic effects to obtain projections of the impact on demand for Trussell Trust food bank use for the UK, quarterly from 2020Q1 to 2021Q1. We also provide uncertainty bounds and analyse both an optimistic and a pessimistic scenario.
- Our headline projection is about 42,000 additional adults in need of food bank use in 2020Q1, rising to some 165,000 in 2020Q2, further to 225,000 and 417,000 in 2020Q3 and 2020Q4, before declining sharply to about 220,000 in 2021Q1.
- In terms of food parcels, this approximately translates to 22 per cent higher demand in 2020Q1 and 85 per cent higher demand in 2020Q2, both relative to the corresponding quarters of 2019. Projected demand in 2020Q4 is about 2.5 times that in 2019Q4. There was 15 percent higher food bank demand in 2020Q1 relative to the counterfactual situation without COVID, with demand rising to 115 per cent above the non-COVID case by 2020Q4.
- The above projections are obtained by taking estimates from the NIESR NiGEM (National Institute Global Econometric Model, NIESR 2018) model from the August 2020 Review (NIESR 2020) and comparing these against the non-COVID19 counterfactual based on projections from February 2020. Further insights are drawn from Round 6 of the UK Wealth and Assets Survey (representative sample for individuals from all regions of the UK except Northern Ireland in 2017), particularly to project the impacts of income shocks on individuals in employment (particularly self-employed individuals) and small businesses.
- Increased demand in 2020Q1 arose largely from loss of income for those employed and self-employed in businesses lacking government support. Self-employed workers constitute the bulk of the demand in 2020Q2, while demand from the unemployed becomes prominent in subsequent quarters as unemployment continues to grow.

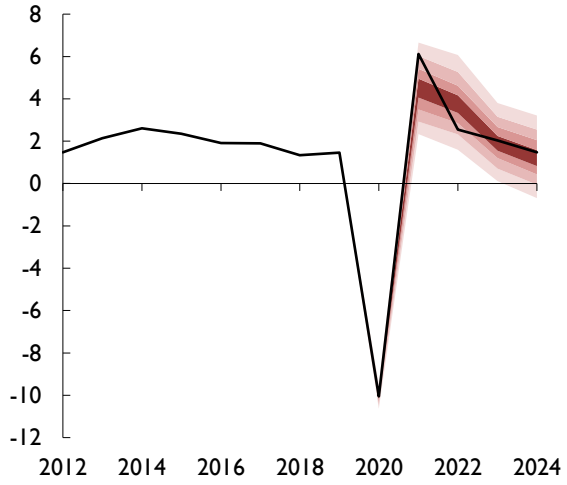
Reviewing the updated macroeconomic picture

The NIESR has published the August issue of the National Institute Economic Review (NIESR, 2020) with updated macroeconomic projections after taking into account the likely second wave of COVID-19 and the continuous government support for businesses that have been affected by the crisis. The Furlough scheme extended until October 2020 is continuing to cover up to 80% of wages of 9.4 million employees and supporting an additional 2.7 million who have used the Self-Employment Income Support Scheme across the UK (Foley et al., 2020).

This report to The Trussell Trust takes the above likely scenario to obtain projections of the impact on demand for food bank use for the UK, quarterly from 2020Q1 to 2021Q1. Together with the likely scenario, projections under an optimistic and a pessimistic scenario of the COVID-19 crisis are also provided. In a technical Appendix, we also provide a discussion of our modelling approach, together with methodology and assumptions. This complements a separate exercise (Bhattacharjee and Lisauskaite, 2020) providing insights on the distributional consequences of COVID-19, based on projections of the UK population in destitution by a dynamic microsimulation approach using the NIESR's LINDA (Lifetime INcome Distributional Analysis) model (NIESR, 2016).

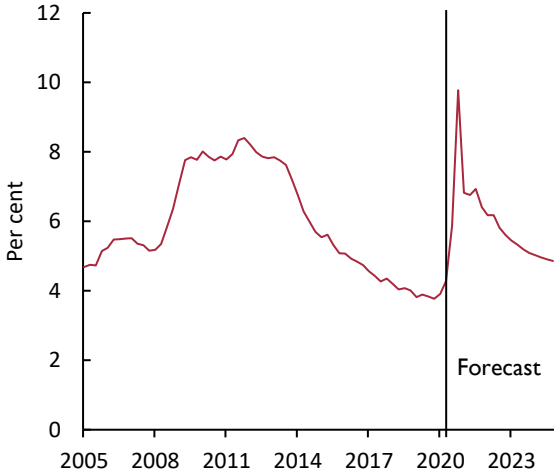
The latest projections from the August Review (NIESR, 2020) report a likely scenario where real GDP falls by 19.1 per cent in 2020Q2 relative to 2019Q2, with a growth of -21.7% in a pessimistic scenario and -16.5% in an optimistic case (Figure 1 and Table 1). Likely falls in GDP in subsequent quarters are 13 per cent, 6.3 per cent and 3.5 per cent in 2020Q3, 2020Q4 and 2021Q1 respectively. Substantially moderated by the extended Furlough scheme, the unemployment rate is projected to reach 9.8% in 2020Q4 (Figure 2 and Table 1), and a long-term increase of over 2 per cent from pre-COVID times is expected for the next two years.

Figure 1: GDP growth fan chart (per cent per annum)



Source: NIESR forecast and judgement (August Review, NIESR 2020). In addition to the usual uncertainty, the fan chart incorporates a 20-33 per cent change in the first half of 2021 of a second wave of Covid-19 with 40-80 per cent intensity of first wave effects.

Figure 2: UK ILO unemployment rate and forecast



Source: NiGEM and NIESR forecast (August Review 2020).

Table 1: Projected Growth rate of Real GDP (per cent relative to previous year)

Quarter	Growth rate scenarios		Likely path to recovery		
	Pessimistic	Optimistic	Likely growth	Relative to non-COVID19	Unemployment rate
2020Q1	-2.1	-1.4	-1.7	-2.3	3.9
2020Q2	-21.7	-16.5	-19.1	-20.5	4.3
2020Q3	-14.1	-12.0	-13.0	-14.4	5.9
2020Q4	-12.2	-0.5	-6.3	-8.2	9.8
2021Q1	-9.6	2.5	-3.5	-5.5	6.8

Projections of increased food bank use: optimistic versus pessimistic scenarios

In this section, we provide quarterly projections of Trussell Trust food parcel demand based on the macroeconomic factors outlined above, together with error bands, that is, comparing optimistic and pessimistic scenarios (Table 1). We also account for: (a) an increased demand for food banks by children, which is reported to be 60% of the demand from adults; (b) multiple use

of Trussell Trust food banks by placing the estimated number of times a single person approaches the food bank at 1.78; and (c) market share of Trussell Trust food banks that we place at 0.60.

We obtain projections of increased number of adults requiring food bank use under various scenarios for each quarter. Then, projected additional food parcels were obtained by inflating the adults proportionately by the figures at (a), (b) and (c) above, which is then placed at 60 per cent based on the updated Trussell Trust statistics. Counterfactual non-COVID demand was obtained by time-series regression of growth in semi-annual food parcel demand (Trussell Trust, 2020) on the unemployment rate and wages (in logarithms), after accounting for non-stationarity in the relevant variables. The above additional demand was added to this counterfactual to obtain projections of food parcel demand for each quarter, together with a comparison relative to the above counterfactual demand. Findings by different scenarios are reported in Table 2 below; see also Table 2a. The methodology is outlined in Figure 3.

Table 2: Projections of TT food parcels under the NIESR likely scenario (based on 60% market share)

Quarter	Increased demand on food bank use: Channels			Additional number of adults	Percent of working-age population	Likely TT food parcel demand & scenarios [Optimistic | Pessimistic]	Growth over: prev. year; non-COVID
	Unemployed	Lower income in jobs	Self-employed				
2020Q1	0	22,514	19,847	42,361	0.08%	554,115 [546,878 | 563,280]	22.0%; 14.9%
2020Q2	22,691	22,263	118,862	163,816	0.31%	762,464 [725,973 | 1,028,035]	85.1%; 57.5%
2020Q3	107,981	21,806	94,265	224,052	0.42%	885,992 [724,048 | 1,171,002]	105.4%; 75.4%
2020Q4	377,064	19,908	20,084	417,056	0.77%	1,324,575 [1,222,186 | 1,432,801]	152.8%; 115.2%
2021Q1	191,414	21,429	7,640	220,484	0.41%	1,006,742 [911,411 | 1,115,313]	88.6%; 59.3%

The projections indicate a marked difference and changing balance of importance between the different channels. First, the impact upon those who are employed in jobs is stable and moderate. This is because of the Furlough scheme initiated by the UK government. The most vulnerable are the unemployed and self-employed workers. We project that there were 278,487 additional food parcels demanded from the Trussell Trust in 2020Q2, out of which 202,065 were from self-employed people and their children. The government scheme supporting the self-employed base their pay-outs according to the tax returns over the previous two years, whereas the Furlough scheme pays 80 per cent of the 'usual wage', which is the month prior to furlough. As self-employment is less stable in terms of income, and a person could be self-employed by less than 2

years, the support they receive from the government is likely not to be enough to cover their basic needs, hence the sharp increase in 2020Q2. As more businesses laid off their employees, the demand coming from unemployed workers is projected to increase sharply in 2020Q3 and 2020Q4, reaching 708,995 additional food parcels in 2020Q4, of which additional demand from unemployed individuals in need of Trussell Trust food parcels is projected to be 641,008.

The projected numbers of additional need for food parcels are extremely high even when the new macroeconomic forecasts are applied. Based on our modelling of the counterfactual non-COVID demand for Trussell Trust food parcels, the likely scenario implies 554,115 parcels in 2020Q1 with the pessimistic scenario projection of 563,280 parcels demanded from Trussell Trust food banks. The demand rises progressively and reaches 1,324,575 parcels in 2020Q4 with the worst-case scenario of 1,432,801 parcels in need. This represents substantial excess demand over the non-COVID counterfactual, by 14.9 per cent, 57.5 per cent, 75.4 per cent, 115.2 per cent, and 59.3 per cent, over the successive quarters 2020Q1 through to 2021Q1, respectively. For these consecutive 5 quarters the above projections represent 22.0 per cent, 85.1 per cent, 105.4 per cent, 152.8 per cent and 88.6 per cent growth above the corresponding quarters of the previous year, respectively.

Conclusion

In this report on the macroeconomic projections of Trussell Trust food parcel demand, quarterly from 2020Q1 to 2021Q1, we have presented the updated overview of the macroeconomic forecast, using NiGEM (NIESR, 2018), from the most recent NIESR review of August 2020 (NIESR, 2020) and the implications of these on the aggregate effects of COVID-19 on the demand for food banks. In addition, we presented aggregate projections under two alternate scenarios – optimistic and pessimistic.

Overall, the impacts of the COVID-19 crisis, in terms of destitution and food bank demand, are devastating. The distributional impacts are also highly asymmetric across labour market states, with the increased demand arising largely from the self-employed workers in small businesses in 2020Q1 and 2020Q2, and then demand from the unemployed workers picking up subsequently.

The impact upon those in jobs, due to reduced hours and wages, is moderate in comparison, and this is largely due to the Furlough scheme. Like any other projection exercise, the figures themselves must be treated with caution, not least because of higher uncertainty on the downside.

Policies to mitigate against these adverse impacts are the order of the day (Bhattacharjee and Lisauskaite, 2020). The UK Government's measures are useful, but they offset only a small proportion of the adverse impacts (FT 2020). Beyond the Furlough scheme and assistance to small businesses, and beyond the recent changes to Universal Credit, the government must also continue to provide enhanced welfare support to the vulnerable.

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Technical Appendix: Macroeconomic Projection Methodology

Projections under different scenarios

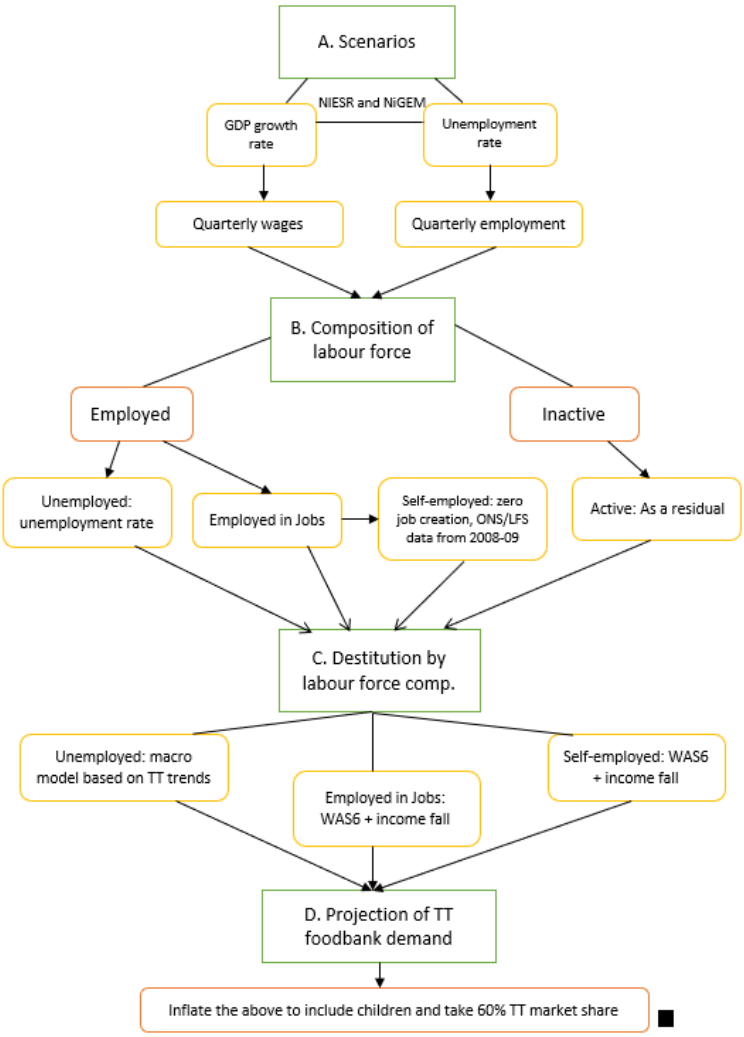
The economic growth scenarios together with projections of the unemployment rate (Table 1) allow us to project composition of the working age population (aged 16 years and older): labour force (unemployed, employed, and of which, self-employed) and economically inactive. For this purpose, as well as for comparison against the non-COVID19 counterfactual, we extensively used projections from the NiGEM (National Institute Global Econometric Model) (NIESR, 2018). NiGEM is a quarterly econometric model based on real economic data, and it provided a central COVID19 projection (August Review, NIESR 2020) together with a non-COVID19 counterfactual (projections from February 2020) and alternate optimistic and pessimistic scenarios (NIESR 2020).

To obtain the decomposition of working age population under different scenarios, we adopted the following strategy and assumptions. Like any other forecast exercise, the projections here need to be treated with caution, and carefully evaluated against the assumptions made. It was assumed that the number of economically inactive people is not affected substantially by the crisis. However, in principle, percentage of inactive people can be on the lower side, since other household members may find job search and retention more difficult. Inactivity rate had been falling over the past few years and just up to the crisis, it was at its lowest ever, at 35.6 per cent. This is assumed fixed at this proportion over the period under study.

GDP was projected according to the scenarios presented in Table 1. Labour productivity projections (productivity per hour, base 2016) were taken from NiGEM, falling from 101.9 in 2019Q4 to 100.6 in 2020Q1, then recovering gradually to 103.3 by 2020Q4. Output and productivity would in normal market conditions determine wages and employment, but here we have a Furlough scheme which is restricting the fall in employment till 2020Q3. Counterfactual quarterly employment levels were then calculated, and then based on the Furlough scheme paying workers with zero productivity 80 per cent of their wages, projected wages were calculated for these three quarters. For subsequent quarters, wages were taken from the NiGEM data and employment was backed out using output and productivity estimates. Then, under the above likely scenario of GDP growth, employment (in '000s) falls slightly from 33,134 in 2020Q1

to 32,355 by 2020Q3, and then sharply to 30,241 by 2020Q4, after which it recovers. As a result, wages fall a little bit during the lockdown compared to 2019Q4 and then stabilise, but they are still decreasing every quarter relative the non-COVID19 counterfactual and are at 96 per cent of non-COVID wages by 2021Q1. However, as discussed above, while fall in wages is moderate, the main effect is that employment falls sharply and unemployment rates rise correspondingly.

Figure 3: Methodological approach for macro projection – Flowchart



Next, we model the impact of COVID-19 shock. This is expected to affect unemployed workers, those in jobs and the self-employed, differently. Hence, we obtained a decomposition of self-employed workers within the employed population. Specifically, we consider the impact to be different for those employed in jobs and the self-employed. First, falls in income can have different effects on these two cohorts, many self-employed being on lower wages and therefore more susceptible to income shocks pushing them into food poverty. Further, some self-employed

people may not receive small business support from the government either because they pay lower taxes relative to their incomes or they largely pay themselves in dividends. We assume that there will be less job creation in the organised sector hence some people made jobless may become self-employed. We place this projection at the period of worst job creation in the recent times, which is December 2009 during the Global Financial Crisis. During the 3 months to January 2010, employment loss was around 500,000 and 61,000 more workers became self-employed. We made projections for all quarters from 2020Q1 using the above take-up rate for self-employment. Self-employment rates were historically the highest in 2019Q4 at 15.3 per cent of employed workers, and under our projection, this rate then increases to 20.3 per cent by 2020Q3, and then falls slowly.

Next, we apply the above income losses to the representative national data from the UK Wealth and Assets Survey Round 6. A macroeconomic forecasting or projection exercise, by its very nature, cannot take full account of micro-level changes in policy interventions related to social security. However, our projections account for the benefits system in two simple ways. First, the projections are based on income after housing costs, assuming that LHA and related benefits cover housing costs. Second, recent temporary enhancements to Universal Credit scale rates are approximately modelled by enhancing the destitution benchmark weekly earnings by £20. This provides proportion of people in working-age population who are pushed into destitution because of the COVID-19 shock.

The above figures are at the national level. To estimate the impact upon Trussell Trust food parcel demand, we also account for: (a) an increased demand for food banks by children, which is reported to be 60% of the demand from adults; (b) multiple use of Trussell Trust food banks by placing the estimated number of times a single person approaches the food bank at 1.78; and (c) market share of Trussell Trust food banks that we place at 0.60. This implies that aggregate Trussell Trust food parcel demand is an increment, over counterfactual non-COVID demand, of 1.7 times the increased 16+ population in destitution. The counterfactual non-COVID demand was obtained by time-series regression of growth in quarterly food parcel distribution (Trussell Trust, 2020) on the unemployment rate and wages (in logarithms), after accounting for non-stationarity in the relevant variables. About 53% of the total variation in annual growth rate of Trussell Trust food bank use is explained by this model. This is rather high given that this is not a complicated model as it does not account for regional variation and differences in household composition, etc.

Table 2a: Projections of TT food parcels under the NIESR likely scenario (based on 60% market share)

Quarter	Increased demand on food bank use: Channels			Additional number of adults	Percent of working-age population	Likely TT food parcel demand & scenarios [Optimistic | Pessimistic]	Likely TT food parcel demand (non-COVID)	Growth rate relative to	
	Unemployed	Lower income in jobs	Self-employed					Previous year [Optimistic | Pessimistic]	Non-COVID [Optimistic | Pessimistic]
2020Q1	0	22,514	19,847	42,361	0.08%	554,115 [546,878 | 563,280]	482,101	22.0% [20.4% | 24.0%]	14.9% [13.4 % | 16.8%]
2020Q2	22,691	22,263	118,862	163,816	0.31%	762,464 [725,973 | 1,028,035]	483,977	85.1% [76.2% | 149.5%]	57.5% [50.0% | 112.4%]
2020Q3	107,981	21,806	94,265	224,052	0.42%	885,992 [724,048 | 1,171,002]	505,105	105.4% [67.9% | 171.5%]	75.4% [43.3% | 131.8%]
2020Q4	377,064	19,908	20,084	417,056	0.77%	1,324,575 [1,222,186 | 1,432,801]	615,580	152.8% [133.2% | 173.4%]	115.2% [98.5% | 132.8%]
2021Q1	191,414	21,429	7,640	220,484	0.41%	1,006,742 [911,411 | 1,115,313]	631,920	88.6% [70.7% | 108.9%]	59.3% [44.2% | 76.5%]