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**Theme:** Business, Innovation & Economic Development

**Further Reading:**

O'Donoghue, C., Sologon, D., Kyzyma, I., McHale, J. (2020). Modelling the Distributional impact of the Covid-19 Crisis. *Fiscal Studies*, 41 (2): 321–336.

<https://doi.org/10.1111/1475-5890.12231>

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**Read More About:** Read more about the Macroeconomics and Finance cluster [here](#).

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## Modelling real-time changes to income distribution during the Covid-19 emergency

The Covid-19 emergency has provided a shock to societies unlike anything in recent memory. Often lacking good information, governments have had to formulate policy responses in a fog of uncertainty. The policy-imposed shutdown has had significant implications for the income of households, with differing effects across the income distribution. Governments have responded with temporary income support policies, including enhanced unemployment payments, wage subsidies and Covid-related illness benefits. There are also been some positive effects on the cash flow for households from the reduction in work-related expenditures, especially given the large number of people now working from home. Governments rely on modelling to predict the distributional impact of such supports and policy responses. With that in mind, this research develops a Microsimulation-Nowcasting model for Ireland to help understand and predict the income distribution implications of the emergency in close to real time.

### Research Findings

The Microsimulation-Nowcasting modelling framework is used to examine the effect of the shut down and policy responses as of early April 2020 compared to the immediate pre-emergency situation. Not surprisingly, when market incomes (i.e. incomes before benefits and taxes) are looked at, income losses are seen across all deciles of the income distribution, with larger losses in average monthly euro incomes for the better-off deciles. However, despite the large euro losses for the better off, income inequality as measured by the Gini coefficient increased compared to the immediate pre-emergency situation. Once benefits (i.e. move from market to gross income) are accounted for though, the model suggests a reduction in inequality over this initial emergency period. Accounting also for taxes (moving now from gross income to disposable income) indicates a small further decrease in inequality. Finally, taking into account the effects on work-related expenses and mortgage-related payments (referred to in the paper as adjusted disposable income) further falls in the Gini coefficient are evident, with the bottom six deciles actually showing small increases in average monthly-adjusted disposable income. This is an encouraging signal that the policy responses have been effective in avoiding serious adverse effects on the income distribution. The paper stresses, however, that such averages can hide substantial negative effects for particular households.

### Policy Implications

This early analysis of the likely effects across the income distribution at this early stage in the Covid-19 emergency demonstrates the value of the Microsimulation-Nowcasting framework in modelling the impact of the emergency in close to real time. The model should be useful to policy makers as they consider modifications to existing income support arrangements and consider alternative scenarios for the evolution of the shutdown. Of course, policy makers will still be navigating their way through the emergency in a dense fog of uncertainty. However, models that can capture the complexities of real world systems and quickly incorporate the latest available data – whether epidemiological or economic – should be important aids for navigating through this devastating health, economic and social emergency.