The cushioning effect of fiscal policy in the EU during the COVID-19 pandemic

Expert meeting on nowcasting mid-term projections through microsimulation models

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Outline

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Motivation I

- The COVID-19 pandemic hit Europe severely in 2020
  - Households faced an increased risk of unemployment due to lockdown measures and general reduction in economic activity.
  - This affects household income, consumption and therefore total demand.

- Rapidly increasing literature on the impact of the COVID-19 pandemic on household income
  - Using **up-to-date survey data** (Clark et al. (2020); Menta (2021))
  - **Reweighting** the underlying survey data (Almeida et al. (2021))
  - **Nowcasting** microdata to the new labour market characteristics using different modelling approaches (Brewer and Tasseva (2020); Bruckmeier et al. (2020); Figari and Fiorio (2020); Canto-Sanchez et al. (2021) etc.)

Motivation II

- **Automatic stabilizers** insure households against the risk of income loss **BUT** strong variation of Automatic Stabilzation across EU Member States.
- To further cushion the drop in household incomes, EU member states implemented several additional (discretionary) policy measures
  - With the support of the European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE)
- **Micro approach (Dolls et al., 2012)** vs. Macro approach (Larch et al., 2013)
- Drawback of the Macro approach:
  - separating discretionary policy measures from automatic stabilizers
  - identification problems resulting from endogenous regressors
- Drawback of the Micro approach:
  - does not account for the interactions with the rest of the economy.

Research Questions and Contribution

- **Research questions:**
  1. To what extent have the tax-benefit systems of the EU Member States protected household incomes during the COVID-19 pandemic?
  2. What stabilized the household income? Automatic Stabilizers or (discretionary) policy measures (and especially STW shemes)?

- **Our contribution:**
  1. EU-wide assessment of the cushioning effects of taxes and social transfers during the COVID-19 pandemic,
  2. Introduction of a **novel nowcasting methodology** for all EU MS.

Methodology and Data I

EUROMOD and the Labour Market Adjustment (LMA) Add-on:

- Novel and simplified nowcasting methodology within the microsimulation model EUROMOD.
- **Novelty**: simulation of labour market transitions to monetary compensation and short-time work schemes (STWs).
- **Flexibility:**
  - simulation of a large range of **actual and hypothetical labour market shocks** (e.g. for the recovery period).
  - simulation of **policy changes** (e.g. for unemployment benefits or STW schemes).
  - simulation of **counterfactual scenarios** (e.g. absence of STW schemes).
  - Disentangle Automatic Stabilization and discretionary policy measures.

Methodology and Data II

What we do:

- Use of the tax-benefit microsimulation model EUROMOD, with data from the 2018 EU-SILC (2017 incomes). Simulation of **2020 tax-benefit rules.**
- Adjusted micro-data to labour market conditions in 2020 due to COVID-19
- **Detailed statistics** (administrative country-level data or Eurostat data):
  - transitions to unemployment or monetary compensation (e.g. STW) schemes
  - **duration** in unemployment or STW
  - **hour reduction** in STW schemes
- Various levels of disaggregation (gender, sector, self-employed/ employees)
- Within each degree of disaggregation, workers were randomly assigned into new labour market status.

Methodology and Data III

- Comparison of two alternative scenarios for 2020:
  - **No COVID-19 labour market shock**: No transition to unemployment, or monetary compensation are simulated.
  - **COVID-19 labour market shock**: Transitions to monetary compensation schemes (such as STW schemes) and unemployment are simulated.

- Holding policies constant, this comparison allows us to focus on the extent to which 2020 policies cushioned
  - the **incomes of the households** that underwent these labour market changes
  - potential **inequality** increase
  - potential **poverty** increase

Methodology and Data IV

- We follow the approach of Dolls et al. (2012), who define the income stabilising coefficient (ISC) as:

$$ISC = 1 - \frac{\sum_i \Delta Y_i^D}{\sum_i \Delta Y_i^M} = \frac{\sum_i \Delta Y_i^M - \sum_i \Delta Y_i^D}{\sum_i \Delta Y_i^M}$$

  where ΔY_i^D is the change in disposable income and ΔY_i^M is the change in market income for an individual i.

- An $ISC = 0.8$ would imply that 80% of a shock to the market income is absorbed by the tax-benefit system.

Methodology and Data V

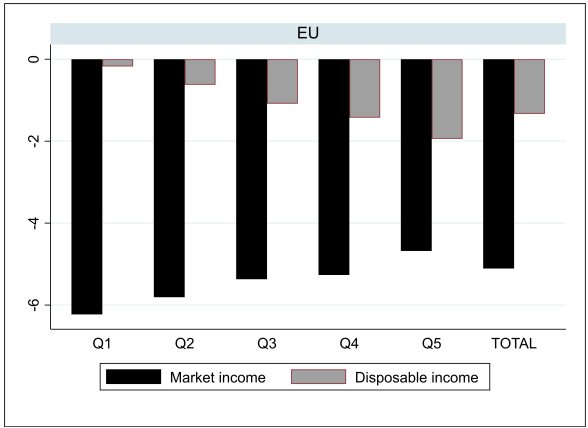
- We can further decompose the effect of several tax-benefit instruments:

$$ISC = \frac{\sum_i \Delta Y_i^M - \sum_i \Delta Y_i^D}{\sum_i \Delta Y_i^M} = \frac{\sum_i \Delta T_i - \sum_i \Delta UB_i - \sum_i \Delta MC_i - \sum_i \Delta OB_i}{\sum_i \Delta Y_i^M}$$

where T_i are taxes and social insurance contributions of individual i, UB_i unemployment benefits, MC_i monetary compensation schemes and OB_i other benefits and pensions.

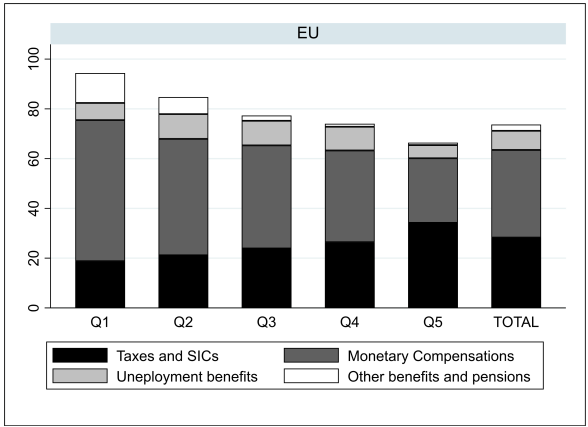
Results I

Change in market and disposable incomes (%) – EU



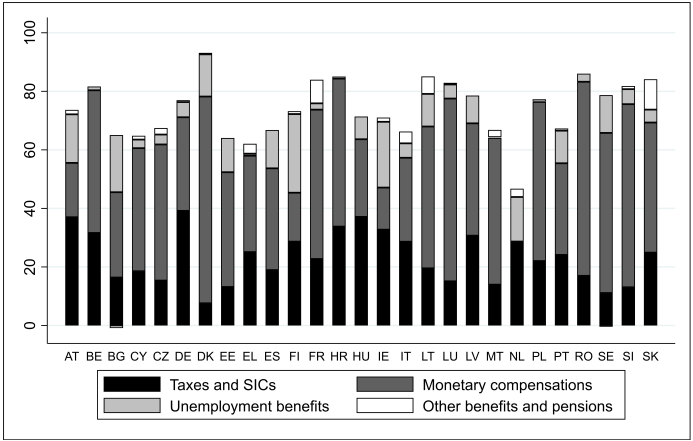
Results II

Income stabilisation coefficient - EU



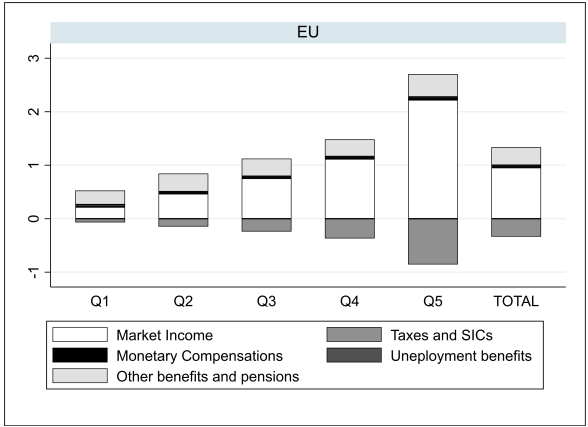
Results III

Income stabilisation coefficient - Member States



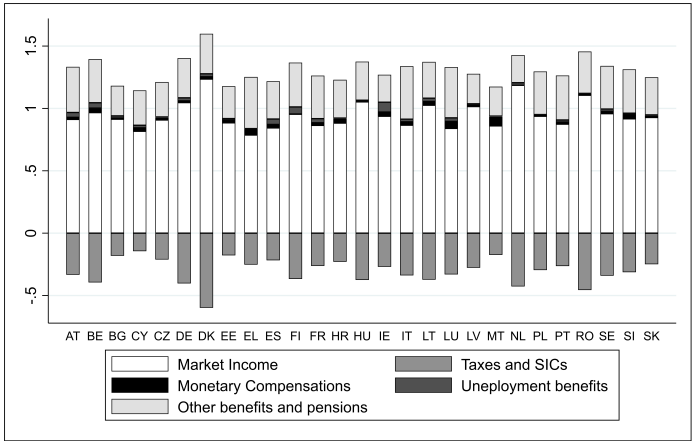
Results IV

Decomposition of average disposable income - EU



Results V

Decomposition of average disposable income - Member States



Results VI

Income inequality - Gini Index I

	Market income			Disposable income		
	2020 (baseline)	2020 with LMA	difference	2020 (baseline)	2020 with LMA	difference
EU	**0.499**	**0.505**	**0.006**	**0.289**	**0.287**	**-0.002**
AT	0.490	0.510	0.020	0.247	0.247	0.000
BE	0.491	0.498	0.007	0.212	0.208	-0.004
BG	0.542	0.546	0.004	0.400	0.400	0.000
CY	0.457	0.470	0.013	0.293	0.293	0.000
CZ	0.440	0.445	0.005	0.225	0.223	-0.002
DE	0.506	0.510	0.004	0.275	0.274	-0.001
DK	0.453	0.458	0.005	0.253	0.253	0.000
EE	0.449	0.458	0.009	0.289	0.286	-0.003
EL	0.554	0.564	0.010	0.316	0.305	-0.011
ES	0.514	0.528	0.014	0.315	0.313	-0.002
FI	0.507	0.510	0.003	0.240	0.240	0.000
FR	0.495	0.497	0.002	0.273	0.269	-0.004
HR	0.485	0.488	0.003	0.291	0.286	-0.005

Results VII

Income inequality - Gini Index II

	Market income			Disposable income		
	2020 (baseline)	2020 with LMA	difference	2020 (baseline)	2020 with LMA	difference
HU	0.481	0.485	0.004	0.321	0.322	0.001
IE	0.534	0.570	0.036	0.308	0.296	-0.012
IT	0.530	0.539	0.009	0.324	0.323	-0.001
LT	0.510	0.517	0.007	0.317	0.314	-0.003
LU	0.506	0.519	0.013	0.253	0.249	-0.004
LV	0.491	0.493	0.002	0.344	0.343	-0.001
MT	0.453	0.480	0.027	0.279	0.268	-0.011
NL	0.424	0.424	0.000	0.258	0.257	-0.001
PL	0.463	0.466	0.003	0.278	0.277	-0.001
PT	0.530	0.533	0.003	0.315	0.313	-0.002
RO	0.537	0.539	0.002	0.344	0.343	-0.001
SE	0.468	0.473	0.005	0.257	0.257	0.000
SI	0.451	0.458	0.007	0.229	0.228	-0.001
SK	0.382	0.387	0.005	0.204	0.204	0.000

Results VIII

AROP rates I

	2020 (baseline)	Fixed poverty line 2020 with LMA	diff	Floating poverty line 2020 with LMA	diff
EU	**16.3**	**16.6**	**0.3**	**15.9**	**-0.4**
AT	14.8	16.1	1.3	14.8	0.0
BE	10.3	10.5	0.2	10.1	-0.2
BG	23.2	23.7	0.5	23.2	0.0
CY	15.5	16.4	0.9	15.0	-0.5
CZ	8.4	8.7	0.3	8.2	-0.2
DE	13.9	14.2	0.3	13.7	-0.2
DK	11.2	11.3	0.1	11.3	0.1
EE	20.4	21.0	0.6	19.8	-0.6
EL	17.8	18.9	1.1	17.3	-0.5
ES	21.1	21.8	0.7	20.2	-0.9
FI	10.2	10.3	0.1	10.2	0.0
FR	12.9	12.2	-0.7	11.8	-1.1

Results IX

AROP rates II

	2020 (baseline)	Fixed poverty line 2020 with LMA	diff	Floating poverty line 2020 with LMA	diff
HR	19.8	19.8	0.0	19.6	-0.2
HU	22.6	23.0	0.4	22.5	-0.1
IE	18.5	20.6	2.1	15.0	-3.5
IT	19.8	20.8	1.0	19.8	0.0
LT	16.5	16.9	0.4	16.5	0.0
LU	11.5	11.5	0.0	9.6	-1.9
LV	22.7	22.9	0.2	22.9	0.2
MT	15.9	16.7	0.8	14.3	-1.6
NL	11.5	11.6	0.1	11.5	0.0
PL	15.8	16.0	0.2	15.9	0.1
PT	16.7	17.4	0.7	16.4	-0.3
RO	25.0	24.9	-0.1	24.9	-0.1
SE	14.7	15.1	0.4	14.7	0.0
SI	12.5	12.6	0.1	11.9	-0.6
SK	11.0	11.2	0.2	11.1	0.1

Conclusion I

- First attempt to **evaluate the effectiveness of the 2020 tax-benefit policies** in cushioning the impact of labour transitions in all EU countries.
- Most EU countries experienced **large drops in market incomes**.
  - Poorer households hit hardest.
- Tax-benefit systems **absorbed a significant share of the COVID-19 shock** and were able to **offset** – in most countries – **the regressive nature** of the shock on market incomes.

Conclusion II

- **Monetary compensation** schemes played a **major role in cushioning** the effect of adverse labour market transitions.
  - . . . although in aggregate terms they represent a minor component of household disposable income.
- **AROP rates:** increases if measured using a fixed poverty line / stable or slightly declining if measured using a floating poverty line.
- Evidence of stable or **slightly declining inequality** across EU Member States.

Future steps

- Update/improve statistics used to model labour market transitions.
  - Capture whole year 2020.
  - Further **homogenise sources** of information and levels of disaggregation.
- Redo the **analysis for 2021**.
  - Adding transitions from unemployment (or monetary compensation) to employment.
- Look at effect of the COVID-19 measures on **aggregate demand**.
- Analysis of the **fiscal impact of alternative income protection schemes** (STWs vs. unemployment benefits), depending on labour market transitions.
- Linking the micro approach with EUROMOD with macro-modelling (QUEST or with the VAR model of the JRC B2).

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Thank you