

Accounting for labour market developments in the COVID-19 era using EUROMOD's LMA AddOn: the case of Greece

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Aim of presentation

- Estimate the distributional impact of the Covid-19 crisis, accounting for:
 1. Monetary compensation scheme
 - ✓ Both for employees and for self-employed
 2. Increase in unemployment
 - ✓ Using the LMA AddOn
- EL as a case study
- Focus on the methodology, not on the results

1. Monetary compensation scheme (MCS)

- **Available information**

- Scheme available for 2.5 months (mid March - May) for employees and self-employed
- €534 per month
- Number of employees transiting to the scheme by NACE code
 - ≈ 830 thousand employees
 - 51% of transited employees come from two sectors: wholesale/retail trade and hotels/restaurants
- Number of self-employed transiting to the scheme
 - ≈ 410 thousand self-employed

- **Simulation strategy**

- Using the template provided by JRC
- Random allocation of employees using variable lindi (NACE code)
- Random allocation of self-employed using their social insurance fund



(not the main focus of this presentation)

1. Monetary compensation scheme (MCS)

- Implementation in EUROMOD

Policy	Grp/No	EL_2020	Comment
▶ ● yemcomptime_el		on	DEF: months in wage compensation scheme
▶ ● ysecomptime_el		on	DEF: months in yse compensation scheme
▶ ● yemcomp_el		on	BEN: wage compensation scheme Covid-19
▶ ● ysecomp_el		on	BEN: yse compensation scheme Covid-19
▶ ● yemadj_el		on	INC: wage recalculation
▶ ● yseadj_el		on	INC: yse recalculation
▶ ● yemmyadj_el		on	DEF: yemmy recalculation
▶ ● ysemyadj_el		on	DEF: ysemy recalculation

- 8 policies (...) - the first two are switched off in the baseline

1. Monetary compensation scheme (MCS)

- Implementation in EUROMOD

Policy	Grp/No	EL_2020
▶ ● yemcomptime_el		on
▶ ● ysecomptime_el		on
▶ ● yemcomp_el		on
▶ ● ysecomp_el		on
▶ ● yemadj_el		on
▶ ● yseadj_el		on
▶ ● yemmyadj_el		on
▶ ● ysemyadj_el		on

creation of **lmcee_s** variable:
 random selection of people to be transferred in the scheme, based on lindi



Policy	Grp/No	EL_2020
▼ ● yemcomptime_el		on
▼ fx Elig		on
Elig_Cond		(yemmy > 0) & (lnu=0)
TAX_UNIT		tu_individual_el
▼ fx BenCalc		on
Who_Must_Be_Elig		one
Comp_Cond	1	(lindi = 1) & (stk01_s < 0.05)
Comp_Cond	2	(lindi = 2) & (stk01_s < 0.3)
Comp_Cond	3	(lindi = 3) & (stk01_s < 0.15)
Comp_Cond	4	(lindi = 4) & (stk01_s < 0.35)
Comp_Cond	5	(yemmy > 0) & (lindi = 5) & (stk01_s < 0.82)
Comp_Cond	6	(lindi = 6) & (stk01_s < 0.22)
Comp_Cond	7	(lindi = 7) & (stk01_s < 0.06)
Comp_Cond	8	(lindi = 8) & (stk01_s < 0.41)
Comp_Cond	9	(lindi = 9) & (stk01_s < 0)
Comp_Cond	10	(lindi = 10) & (stk01_s < 0.23)
Comp_Cond	11	(lindi = 11) & (stk01_s < 0.21)
Comp_Cond	12	(lindi = 12) & (stk01_s < 0.73)
Comp_perTU	1	1
Comp_perTU	2	1
Comp_perTU	3	1

1. Monetary compensation scheme (MCS)

- Implementation in EUROMOD

Policy	Grp/No	EL_2020	Comment
▼ fx	Elig	on	selected in step 2 -> eligible for step 3
	Elig_Cond	(lmcee_s = 1)	
	TAX_UNIT	tu_individual_el	
▼ fx	BenCalc	on	step 3a: random allocation of months in compensation scheme (based on external statistics)
	Who_Must_Be_Elig	one	
	Comp_Cond	1 (stk02_s <= 0.66)	for 65% of the total eligible
	Comp_perTU	1 \$mc_my	...2.5 months
	Comp_Cond	2 (stk02_s > 0.65)	for the rest
	Comp_perTU	2 \$mc_my - 1	... 1.5 month
	UpLim	min (yemmy, \$mc_my)	
	Output_Var	bwkmceemy_s	
	TAX_UNIT	tu_individual_el	

... and of **bwkmceemy_s** variable (months in the MCS), based on administrative information

1. Monetary compensation scheme (MCS)

- Implementation in EUROMOD

Policy	Grp/No	EL_2020	Comment
● yemcomp_el		on	BEN: wage compensation scheme Covid-19
▸ fx DefVar		on	temporary variables
▸ fx Elig		on	eligibility condition for the policy
▸ fx ArithOp		on	"real" monthly salary when not in compensation scheme
▸ fx ArithOp		on	"real" monthly non-reported earnings when not in CS
▾ fx BenCalc		on	"real" monthly benefit paid by the state while in compensation scheme
	Who_Must_Be_Elig	one	
	Comp_Cond	1	(bwkmceemy_s > 0) for all cases...
	Comp_perTU	1	\$mc_amount
	Output_Var	i_bwkmcee_s	
	TAX_UNIT	tu_individual_el	
▾ fx ArithOp		on	average monthly benefit paid by the state while in compensation scheme
	Who_Must_Be_Elig	one	
	Formula	$i_bwkmcee_s * bwkmceemy_s / 12$	"real" monthly compensation * months in compensation / 12
	Output_Var	bwkmcee_s	
	TAX_UNIT	tu_individual_el	
▸ ● ysecomp_el		on	BEN: yse compensation scheme Covid-19
▸ ● yemadj_el		on	INC: wage recalculation
▸ ● yseadj_el		on	INC: yse recalculation
▸ ● yemmyadj_el		on	DEF: yemmy recalculation
▸ ● ysemyadj_el		on	DEF: ysemy recalculation

...and finally, of **bwkmcee_s** variable

the EL case is relatively straightforward, as the MCS is a lump-sum amount...

...adjusted for the number of months in receipt

2. Increase in unemployment

- **Available information**

- According to the EC's [Spring 2020 Economic Forecast](#), unemployment in Greece will go up by 2.6 ppts
 - \approx 230 thousand new unemployed
- No info on economic sector or other characteristics...

- **Simulation strategy**

- **Use EUROMOD's LMA AddOn => an 'enhanced' version**
 - *Work in progress with S. De Poli, T. Hufkens, A. Papini*
- Target: move \approx 230 thousand people from employment to short-term unemployment
- Assumptions:
 1. Individuals transiting to unemployment are not the same as those moving to monetary compensation schemes
 2. Their random allocation will follow the distribution of NACE depicted in the transitions from employment to MCS

Working with the current LMA AddOn (1/2)

- LMA AddOn: one of the four publicly available EUROMOD AddOns
- In order for it to run for 2020, we need the following variables:

lma20

- lma20 = 0 → No transition
- lma20 = 1 → Non-employed to employed
- lma20 = 2 → Employed to short-term unemployment
- lma20 = 3 → Employed to long-term unemployment
- lma20 = 4 → Short term unemployed to long term unemployment

yem_a

- imputed wage for people with lma20=1

lhw_a

- imputed hours worked per week for people with lma20=1

- Until now, these variables had to be added in the EM input dataset

...making its use not very straightforward



Working with the current LMA AddOn (2/2)

- `lma20` can now also be created in the model, in the `InitVarsLMA_xx` policy

Policy	Grp/No	EL_2020
Who_Must_Be_Elig		one
Comp_Cond	1	(lindi = 1) & (stk05_s < 0.02)
Comp_Cond	2	(lindi = 2) & (stk05_s < 0.10)
Comp_Cond	3	(lindi = 3) & (stk05_s < 0.06)
Comp_Cond	4	(lindi = 4) & (stk05_s < 0.13)
Comp_Cond	5	(yemmy > 0) & (lindi = 5) & (stk05_s < 0.41)
Comp_Cond	6	(lindi = 6) & (stk05_s < 0.07)
Comp_Cond	7	(lindi = 7) & (stk05_s < 0.02)
Comp_Cond	8	(lindi = 8) & (stk05_s < 0.15)

- For practical reasons, in the EL example only individuals with `yemmy = 12` were chosen for these transitions
- `yem_a` and `lhw_a` are also produced by `InitVarsLMA_xx`
 - both equal to zero, as no transitions to employment were modelled

Enhancing the LMA AddOn

(1/4)

- The LMA AddOn used to work with the assumption that individuals are transiting to unemployment for a period of 12 months
 - When the AddOn ran, yemmy/ysemy were set to zero for those with lma=2
 - This assumption can now be relaxed: in the case of EL, we assume that 230 thousand people are transiting to unemployment after the end of the lockdown, i.e. for a period of 7 months (June - December)
 - A new variable is being created in InitVarsLMA_xx: **yemmy20_a** (months in employment for those in transition)

- set equal to 5 in the EL example

Policy	Grp/No	EL_2020
fx BenCalc		on
Comp_Cond	1	(lma20 = 1)
Comp_perTU	1	12
Comp_Cond	2	(lma20 = 2)
Comp_perTU	2	5
Output_Var		yemmy20_a
TAX_UNIT		tu_individual...

Enhancing the LMA AddOn

(2/4)

- The enhanced LMA AddOn now (heavily) uses the new variable:

Policy	Grp/No	LMA_EL_orig	LMA_EL
fx BenCalc		n/a	on
Comp_Cond	1	n/a	{GetSystemYear = 2018}
Comp_perTU	1	n/a	yemmy18_a
Comp_Cond	2	n/a	{GetSystemYear = 2019}
Comp_perTU	2	n/a	yemmy19_a
Comp_Cond	3	n/a	{GetSystemYear = 2020}
Comp_perTU	3	n/a	yemmy20_a
Output_Var		n/a	yemmy_a
TAX_UNIT		n/a	tu_individual_=cc=

Enhancing the LMA AddOn

(3/4)

- yemmy_a is used when adjusting variables such as lcs, loc, lse, lfs, lindi, lhw...

Policy	Grp/No	LMA_EL_orig	LMA_EL
fx BenCalc		on	on
Comp_Cond	1	{lma = 1}	{lma = 1}
Comp_perTU	1	4	4
Comp_Cond	2	{lma = 2} {lma = 3}	{lma = 2} & {yemmy_a = 0} {lma = 3}
Comp_perTU	2	0	0
Comp_Cond	3	{lma = 4}	{lma = 4}
Comp_perTU	3	lindi	lindi
Comp_Cond	4	{lma = 0}	{lma = 0}
Comp_perTU	4	lindi	lindi
Comp_Cond	5	n/a	{lma = 2} & {yemmy_a != 0}
Comp_perTU	5	n/a	lindi
Output_Var		lindi	lindi
TAX_UNIT		tu_individual_==	tu_individual_==

...we assume that individuals keep their original state if yemmy_a != 0 and change it if yemmy_a = 0

Enhancing the LMA AddOn

(4/4)

- yemmy_a is also used when adjusting variables such as yem*, yemmy, kfb, kfbmy, bhl, bunct...

Policy	Grp/No	LMA_EL_orig	LMA_EL
▼ fx BenCalc		n/a	on
Comp_Cond	1	{lma = 1}	{lma = 1}
Comp_perTU	1	12	yemmy_a
Comp_Cond	2	{lma = 2} {lma = 3}	{lma = 2} {lma = 3}
Comp_perTU	2	0	yemmy_a
Comp_Cond	3	{lma = 4}	{lma = 4}
Comp_perTU	3	0	yemmy
Comp_Cond	4	{lma = 0}	{lma = 0}
Comp_perTU	4	yemmy	yemmy
Output_Var		yemmy	yemmy
TAX_UNIT		tu_individual_cc=	tu_individual_cc=

Policy	Grp/No	LMA_EL_orig	LMA_EL
▼ fx BenCalc		on	on
Comp_Cond	1	{lma = 1}	{lma = 1}
Comp_perTU	1	yem_a	yem_a * yemmy_a/12
Comp_Cond	2	{lma = 2} {lma = 3}	{lma = 2} {lma = 3}
Comp_perTU	2	0	yemre * yemmy_a/yemmy
Comp_Cond	3	{lma = 4}	{lma = 4}
Comp_perTU	3	0	yemre
Comp_Cond	4	{lma = 0}	{lma = 0}
Comp_perTU	4	yemre	yemre
Comp_Cond	5	n/a	n/a
Comp_perTU	5	n/a	n/a
Output_Var		yemre	yemre
TAX_UNIT		tu_individual_cc=	tu_individual_cc=

Running EUROMOD with the LMA AddOn

- Compared to a baseline where only transitions to MCS are simulated

	el_2020 (base)	el_2020_lma	Difference to base
Total market incomes	59,434.97	57,801.87	-1,633.10
... income from (self) employment	55,516.24	53,883.14	-1,633.10
... other sources	3,918.73	3,918.73	0.00
Government expenditure on social transfers	29,760.24	30,206.76	446.52
by target group			
... unemployment benefits	1,981.77	2,412.78	431.01
... family and education benefits	1,164.31	1,174.81	10.50
... social assistance and housing benefits	1,271.92	1,277.13	5.22

	Poverty Risk for el_2020 (base)	Poverty Risk for el_2020_lma	Difference to base
Population	17.49 %	17.90 %	0.41pp
Children	19.89 %	20.54 %	0.65pp
Working Age	18.16 %	18.64 %	0.48pp
Working Age Economically Active	10.19 %	10.63 %	0.44pp
Elderly	13.69 %	13.73 %	0.04pp



Conceptual

- Allowing for double transitions
 - Currently the eligibility condition for the creation of `lmcee_s` (i.e. people transiting to monetary compensation) excludes individuals with `lma = 2`
- Allowing for more transitions
 - `lma20 = 0` → No transition
 - `lma20 = 1` → Non-employed to employed
 - `lma20 = 2` → Employed to short-term unemployment
 - `lma20 = 3` → Employed to long-term unemployment
 - `lma20 = 4` → Short term unemployed to long term unemployment
 - `lma20 = 5` → Non-employed to self-employed

Technical

- Moving `yemadj_xx/yseadj_xx` and `yemmyadj_xx/yemmyadj_xx` policies from the spine to the LMA AddOn
- Combining `InitVarsLMA_xx` and `yemcomptime_xx/ysecomptime_xx` into a single policy, where all random allocations needed for labour market transitions will be performed
- Using the LMA AddOn to account for transitions to both unemployment and monetary compensation schemes
 - Currently transitions to monetary compensation schemes can be performed without having to use the LMA AddOn

EL-specific

1. Relaxing the assumptions that only individuals with `yemmy = 12` transit to unemployment for a period of 7 months

Thank you for your attention!

