The aim of these exercises is to learn how to run ETMOD, produce micro-output, practice how to use the Statistics Presenter tool, modify existing policies, and implement new policies.

Exercise 1: Running ETMOD and producing summary statistics.

The aim of this exercise is to learn how to run ETMOD, produce micro-output and learn how to use the Statistics Presenter tool.

Tasks:

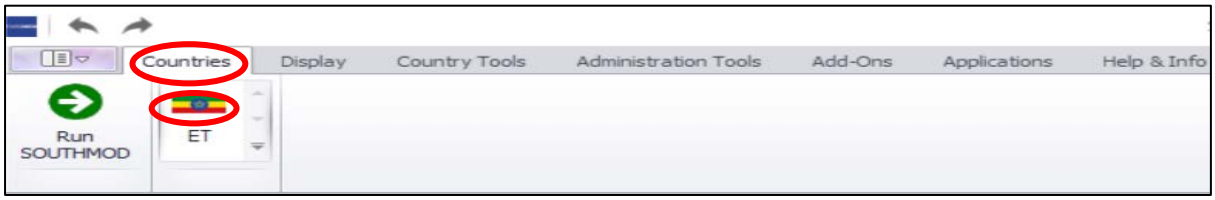
1. Run ETMOD for 2021 and 2022 policy systems.
2. Use the Statistics Presenter Tool to generate government revenue and expenditure and summaries of income distributions using consumption and income approaches.

Solution and further information

Task 1: Producing micro-output for 2021 and 2022 systems

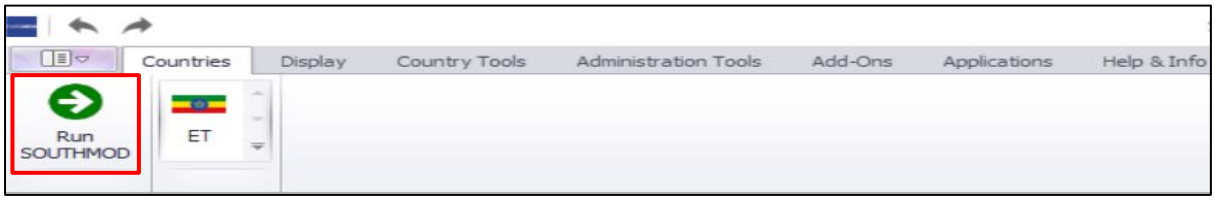
When we open SOUTHMOD, the tab in the ribbon bar – Countries, will be automatically shown (Figure 1.1), by clicking on Ethiopian flag we can open the Ethiopian tax-benefit model.

Figure 1.1



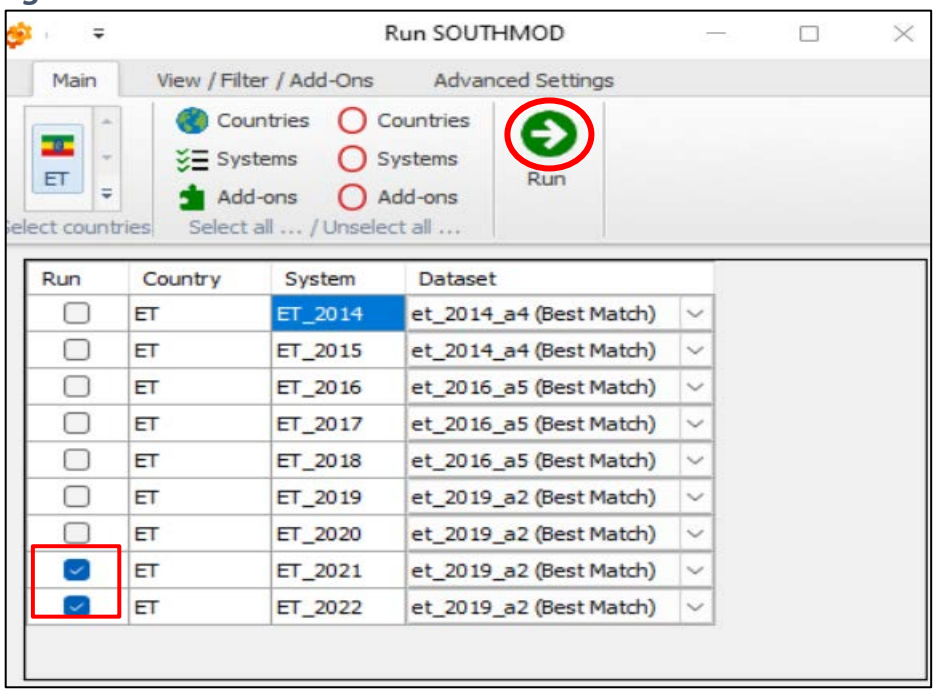
We can start the process to run the model pressing the "Run SOUTHMOD" button in the Countries tab (Figure 1.2).

Figure 1.2



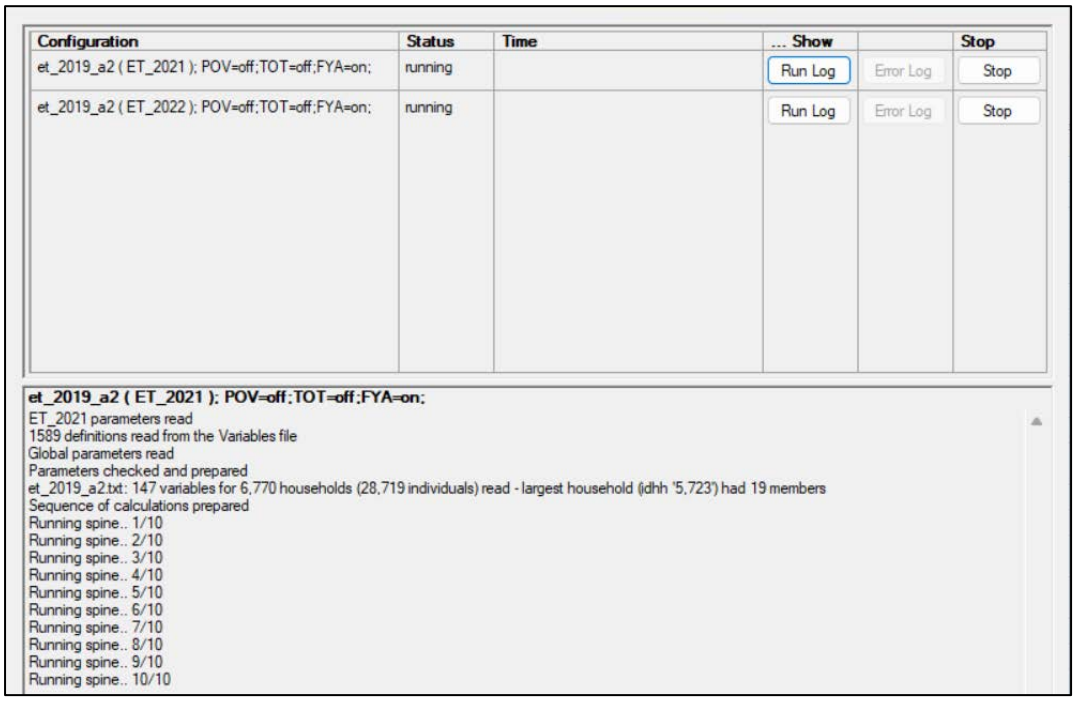
Then SOUTHMOD will automatically bring up a dialogue box displaying existing policy systems in ETMOD with available datasets - the best-match data (Figure 1.3). We produce output files by selecting the 2021 and 2022 systems and clicking on the corresponding boxes. Finally, click the "Run" button in the dialogue box.

Figure 1.3



While running, ETMOD will indicate progress as well as the selected systems and chosen data sets (Figure 1.4). If you want to see "line by line" progress, you should simply click on the Run Log button and each process will be shown in the square below. If you want to stop processing before finishing (e.g. in case you have chosen the wrong systems/datasets), you only need to press Stop button. If there is any error/warning, it stops processing, and the error message will be shown. If the run was without any errors/warnings, Status will be changed from running to finished.

Figure 1.4

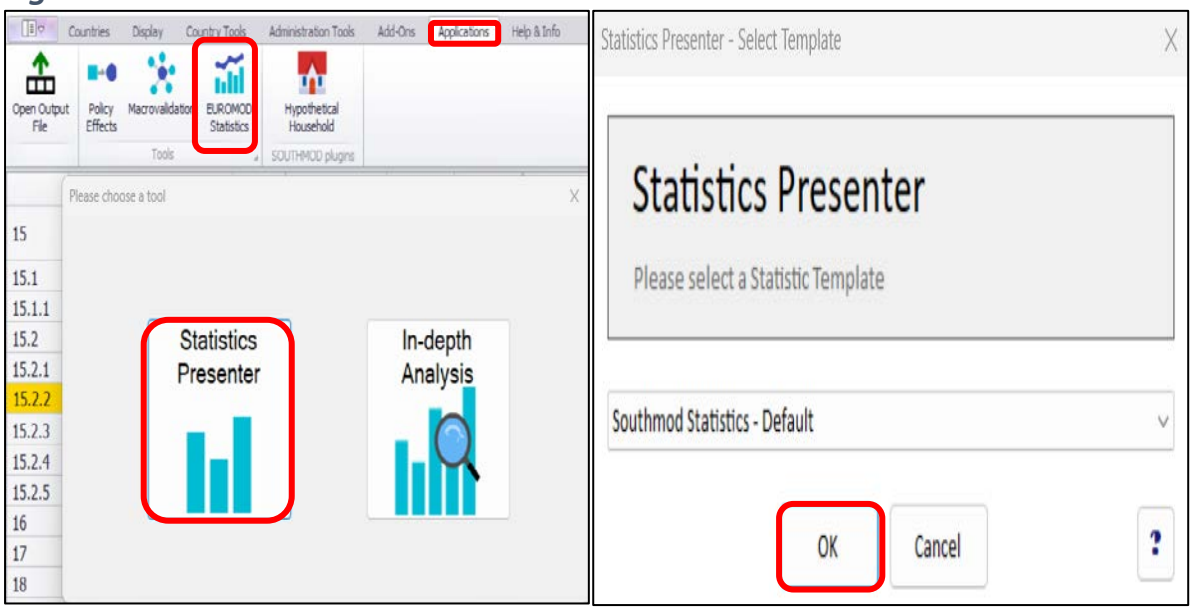


Task 2: Producing summary statistics

After running ETMOD, the output files are stored in the Output folder (if you have not specified it differently). The Statistics Presenter tool will use these outputs, so it is very important to check your systems are running without any errors and warnings.

To access the Statistics Presenter Plug-in, you should go to the tab Applications, press EUROMOD Statistics and click on the Statistics Presenter Plug-In button to launch the tool (Figure 1.5).

Figure 1.5

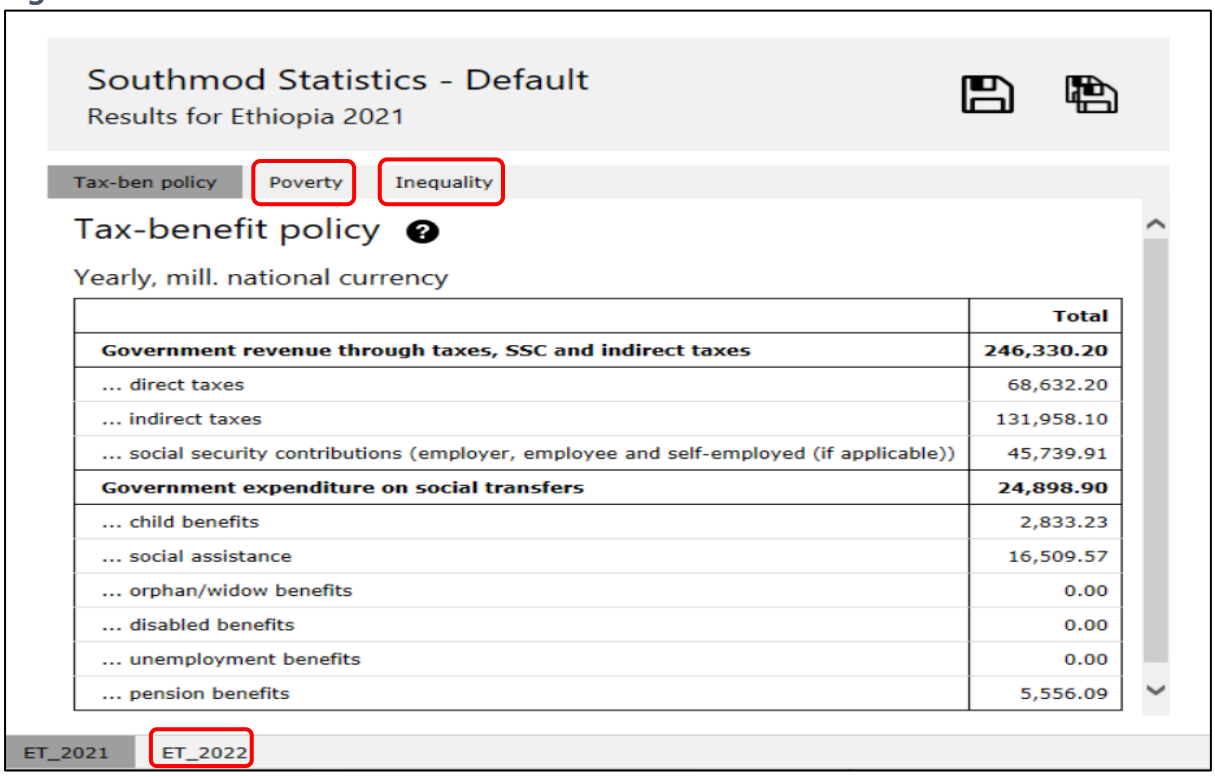


In the dialogue box (Figure 1.5), default statistic appears as the first option. It presents relevant figures on the selected system. An interested person can explore the difference between selected systems just by switching to Baseline/ Reform statistics in the drop-down menu.

An output path is automatically suggested by clicking “Ok” in Figure 1.5. One can easily choose the output file by clicking on it; in our case, select 2021 and 2022 policy systems. To select multiple files, hold ctrl or shift and then click on the files. For the exercise, choose et_2021_std.txt and et_2022_std.txt. Then click “Ok”; a new window will appear that allows the user to fix either income or consumption-based measures. Finally, click the “OK” option to get the result.

As shown in Figure 1.6, the Statistics Presenter tool displays one sheet (2021 system) at a time. Navigate to “Poverty” and “Inequality” tabs to see the respective numbers. Go through to “ET_2022” to view government tax revenue and expenditure on social transfer, poverty, and inequality based on 2022’s system.

Figure 1.6



Exercise 2: Modify the existing personal income tax policy on 2020 policy system.

Tasks:

1. Decrease the second and third bands' tax rates from 10% and 15% to 8% and 12%, respectively.
2. Increase the monthly tax exemption threshold (Upper limit of first income tax bracket) from 600 to 1300 ETB.

Solution and further information

Task 1: Decrease the second and third bands' tax rates from 10% and 15% to 8% and 12%, respectively.

First copy the 2020 system and rename it as “ET_2020_reform1”. Then navigate to spine number 14.1 (DefConst function), under “tin_et” policy. Then change the tax rates in spine 14.1.2 and 14.1.3 as shown in Figure 2.1 by modifying the tax rates to 8% and 12%, respectively.

Figure 1.1

	Policy		Grp/No	ET_2014	ET_2015	ET_2016	ET_2017	ET_2018	ET_2019	ET_2020	ET_2020_reform1
14	tin_et			on	on	on	on	on	on	on	on
14.1	fx DefConst			on	on	on	on	on	on	on	on
14.1.1		$it_rate1	1	0	0	0	0	0	0	0	0
14.1.2		$it_rate2	2	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08
14.1.3		$it_rate3	3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.12
14.1.4		$it_rate4	4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
14.1.5		$it_rate5	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
14.1.6		$it_rate6	6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
14.1.7		$it_rate7	7	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35

Task 2: Increase the monthly tax exemption threshold (Upper limit of first income tax bracket) from 600 to 1300 ETB.

Open spine 14.2 and 14.4 to change the tax schedule for employment and business profit tax. This can be done by replacing the existing exemption threshold (600) to 1300. This activity has been demonstrated in Figure 2.2.

Figure 2.2

	Policy		Grp/No	ET_2014	ET_2015	ET_2016	ET_2017	ET_2018	ET_2019	ET_2020	ET_2020_reform1
14.2	fx SchedCalc			on	on	on	on	on	on	on	on
14.2.1		Base		yem	yem	yem	yem	yem	yem	yem	yem
14.2.2		Band_Rate	1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1
14.2.3		Band_UpLim	1	150#m	150#m	150#m	600#m	600#m	600#m	600#m	1300#m
14.2.4		Band_Rate	2	$it_rate2	$it_rate2	$it_rate2	$it_rate2	$it_rate2	$it_rate2	$it_rate2	$it_rate2
14.2.5		Band_UpLim	2	650#m	650#m	650#m	1650#m	1650#m	1650#m	1650#m	1650#m
14.2.6		Band_Rate	3	$it_rate3	$it_rate3	$it_rate3	$it_rate3	$it_rate3	$it_rate3	$it_rate3	$it_rate3
14.2.7		Band_UpLim	3	1400#m	1400#m	1400#m	3200#m	3200#m	3200#m	3200#m	3200#m
14.2.8		Band_Rate	4	$it_rate4	$it_rate4	$it_rate4	$it_rate4	$it_rate4	$it_rate4	$it_rate4	$it_rate4
14.2.9		Band_UpLim	4	2350#m	2350#m	2350#m	5250#m	5250#m	5250#m	5250#m	5250#m
14.2.10		Band_Rate	5	$it_rate5	$it_rate5	$it_rate5	$it_rate5	$it_rate5	$it_rate5	$it_rate5	$it_rate5
14.2.11		Band_UpLim	5	3550#m	3550#m	3550#m	7800#m	7800#m	7800#m	7800#m	7800#m
14.2.12		Band_Rate	6	$it_rate6	$it_rate6	$it_rate6	$it_rate6	$it_rate6	$it_rate6	$it_rate6	$it_rate6
14.2.13		Band_UpLim	6	5000#m	5000#m	5000#m	10900#m	10900#m	10900#m	10900#m	10900#m
14.2.14		Band_Rate	7	$it_rate7	$it_rate7	$it_rate7	$it_rate7	$it_rate7	$it_rate7	$it_rate7	$it_rate7
14.2.15		Output_Var		tin01_s	tin01_s	tin01_s	tin01_s	tin01_s	tin01_s	tin01_s	tin01_s
14.2.16		TAX_UNIT		tu_individu...	tu_individu...	tu_individu...	tu_individu...	tu_individu...	tu_individu...	tu_individu...	tu_individual_et
14.3	fx BenCalc			on	on	on	on	on	on	on	on
14.4	fx SchedCalc			on	on	on	on	on	on	on	on
14.4.1		Base		yse - tscer_s	yse - tscer_s	yse - tscer_s	yse - tscer_s	yse - tscer_s	yse - tscer_s	yse - tscer_s	yse - tscer_s
14.4.2		Band_Rate	1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1	$it_rate1
14.4.3		Band_UpLim	1	150#m	150#m	150#m	600#m	600#m	600#m	600#m	1300#m

Follow steps under exercise 1 to run ETMOD, produce outputs, and analyse the results.

Exercise 3: Introduce a categorical benefit policy on 2021 policy system.

Tasks:

1. Implement system that offers a monthly 120 ETB to children below 15 and 100 ETB for old age above 65.

Solution and further information

Start by creating a new policy system based on the 2021 system and call it as "ET_2021_bchoa". Then add new benefit policy called "bchoa_et" after "tva_et" policy. Then add "Cash transfer for children and old age" as description of the new benefit policy in the Comment column. Add "DefConst" function with two "placeholder" parameters, rename each to $i_child and $i_old_age. Then input the proposed benefit amounts.

Add "DefVar" with one "placeholder" parameters, rename it to "bchoa_s". The initialized output variable for categorical benefit takes zero value in the beginning.

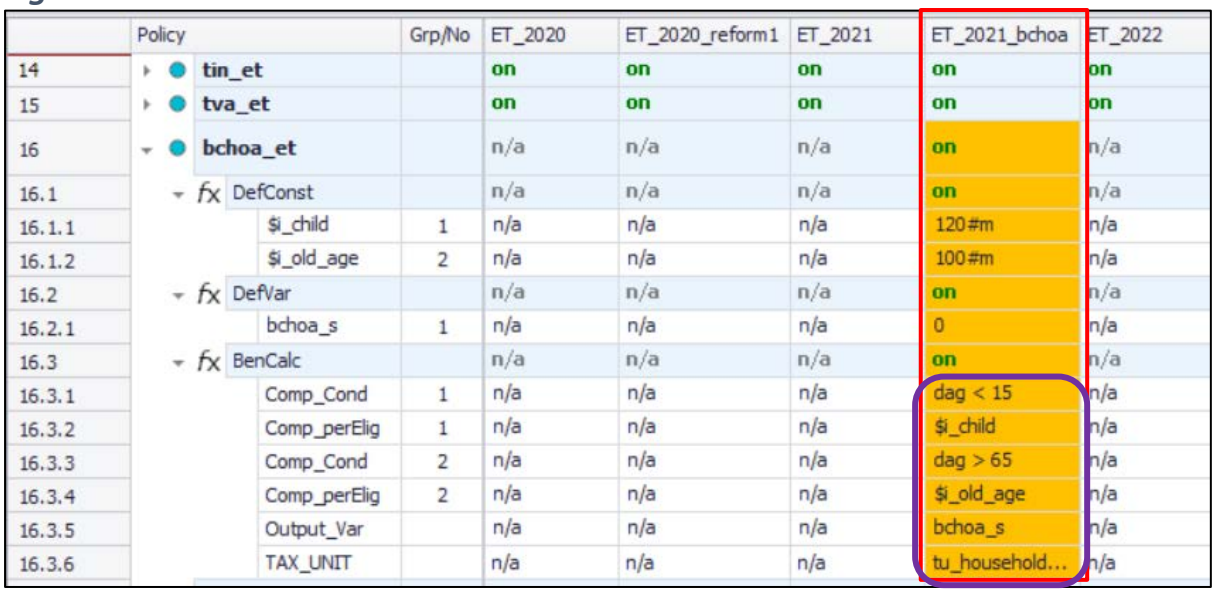
Every switch under new policy should be "ON". The above procedures have been shown in Figure 3.1.

Figure 2.1

	Policy	Grp/No	ET_2020	ET_2020_reform1	ET_2021	ET_2021_bchoa	ET_2022	Comment
14	tin_et		on	on	on	on	on	TAX: Income tax
15	tva_et		on	on	on	on	on	TAX: Value added tax (VAT)
16	bchoa_et		n/a	n/a	n/a	on	n/a	BEN:Cash transfer for children and old age
16.1	fx DefConst		n/a	n/a	n/a	on	n/a	
16.1.1	$i_child	1	n/a	n/a	n/a	120#m	n/a	
16.1.2	$i_old_age	2	n/a	n/a	n/a	100#m	n/a	
16.2	fx DefVar		n/a	n/a	n/a	on	n/a	
16.2.1	bchoa_s	1	n/a	n/a	n/a	0	n/a	

The task can be finalized by assigning the categorical benefit amount for individuals who satisfy the eligibility criteria using BenCalc function, it is demonstrated in Figure 3.2.

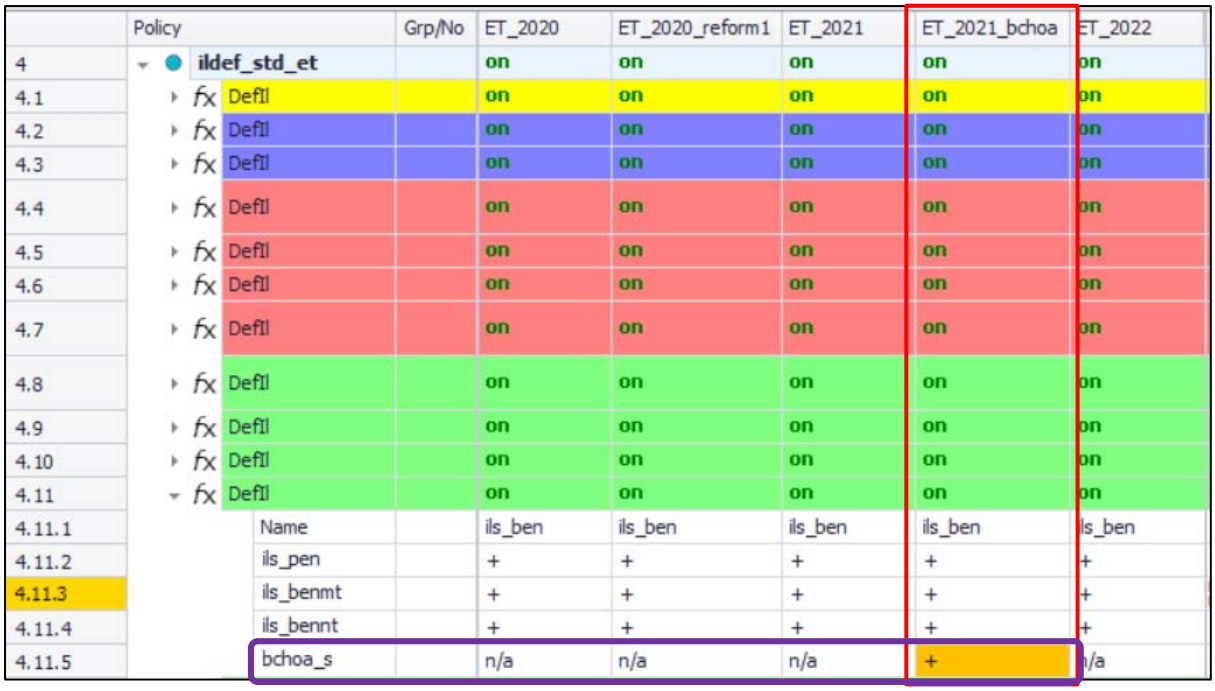
Figure 3.2



	Policy	Grp/No	ET_2020	ET_2020_reform1	ET_2021	ET_2021_bchoa	ET_2022
14	tin_et		on	on	on	on	on
15	tva_et		on	on	on	on	on
16	bchoa_et		n/a	n/a	n/a	on	n/a
16.1	DefConst		n/a	n/a	n/a	on	n/a
16.1.1	$i_child	1	n/a	n/a	n/a	120#m	n/a
16.1.2	$i_old_age	2	n/a	n/a	n/a	100#m	n/a
16.2	DefVar		n/a	n/a	n/a	on	n/a
16.2.1	bchoa_s	1	n/a	n/a	n/a	0	n/a
16.3	BenCalc		n/a	n/a	n/a	on	n/a
16.3.1	Comp_Cond	1	n/a	n/a	n/a	dag < 15	n/a
16.3.2	Comp_perElig	1	n/a	n/a	n/a	$i_child	n/a
16.3.3	Comp_Cond	2	n/a	n/a	n/a	dag > 65	n/a
16.3.4	Comp_perElig	2	n/a	n/a	n/a	$i_old_age	n/a
16.3.5	Output_Var		n/a	n/a	n/a	bchoa_s	n/a
16.3.6	TAX_UNIT		n/a	n/a	n/a	tu_household...	n/a

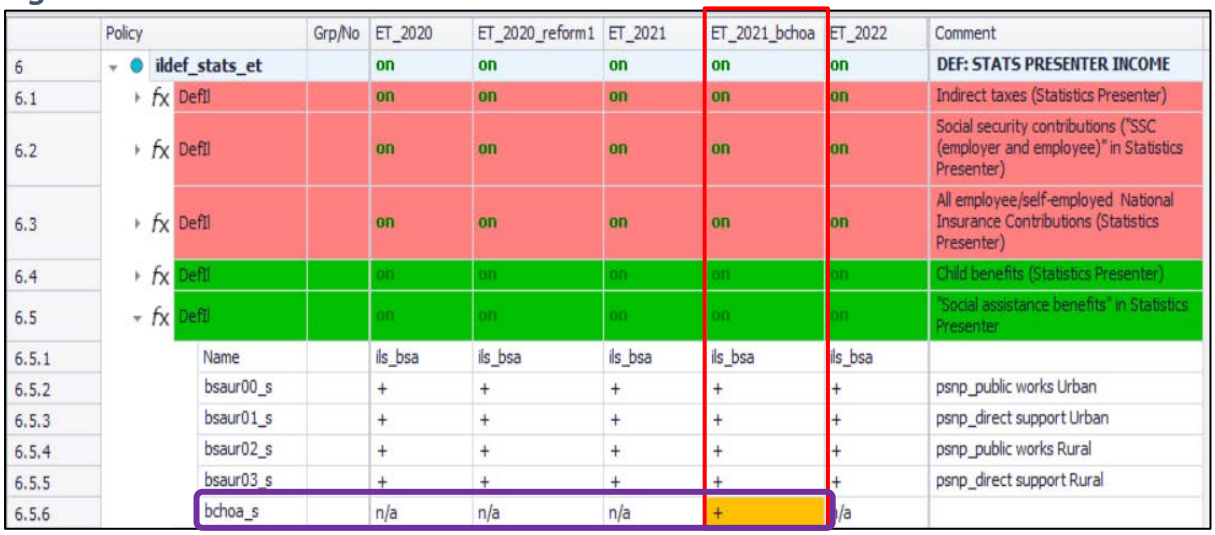
Note: The new output variable (bchoa_s) should be added in "ildef_std_et" and "ildef_stats_et" policies; otherwise, the model will not utilize it while calculating disposable income and compiling the distributional indices as well the new variable will not be available in the output micro file. Figure 3.3 and Figure 3.4 present how the new variable can be added into "ildef_std_et" and "ildef_stats_et" income lists, respectively.

Figure 3.3



	Policy	Grp/No	ET_2020	ET_2020_reform1	ET_2021	ET_2021_bchoa	ET_2022
4	ildef_std_et		on	on	on	on	on
4.1	DefIl		on	on	on	on	on
4.2	DefIl		on	on	on	on	on
4.3	DefIl		on	on	on	on	on
4.4	DefIl		on	on	on	on	on
4.5	DefIl		on	on	on	on	on
4.6	DefIl		on	on	on	on	on
4.7	DefIl		on	on	on	on	on
4.8	DefIl		on	on	on	on	on
4.9	DefIl		on	on	on	on	on
4.10	DefIl		on	on	on	on	on
4.11	DefIl		on	on	on	on	on
4.11.1	Name		ils_ben	ils_ben	ils_ben	ils_ben	ils_ben
4.11.2	ils_pen		+	+	+	+	+
4.11.3	ils_benmt		+	+	+	+	+
4.11.4	ils_bennt		+	+	+	+	+
4.11.5	bchoa_s		n/a	n/a	n/a	+	n/a

Figure 3.3



	Policy	Grp/No	ET_2020	ET_2020_reform1	ET_2021	ET_2021_bchoa	ET_2022	Comment
6	ildef_stats_et		on	on	on	on	on	DEF: STATS PRESENTER INCOME
6.1	DefIl		on	on	on	on	on	Indirect taxes (Statistics Presenter)
6.2	DefIl		on	on	on	on	on	Social security contributions ("SSC (employer and employee)" in Statistics Presenter)
6.3	DefIl		on	on	on	on	on	All employee/self-employed National Insurance Contributions (Statistics Presenter)
6.4	DefIl		on	on	on	on	on	Child benefits (Statistics Presenter)
6.5	DefIl		on	on	on	on	on	"Social assistance benefits" in Statistics Presenter
6.5.1	Name		ils_bsa	ils_bsa	ils_bsa	ils_bsa	ils_bsa	
6.5.2	bsaur00_s		+	+	+	+	+	psnp_public works Urban
6.5.3	bsaur01_s		+	+	+	+	+	psnp_direct support Urban
6.5.4	bsaur02_s		+	+	+	+	+	psnp_public works Rural
6.5.5	bsaur03_s		+	+	+	+	+	psnp_direct support Rural
6.5.6	bchoa_s		n/a	n/a	n/a	+	n/a	

Follow steps under exercise 1 to run ETMOD, produce outputs, and analyse the results.

Exercise 4: Introducing Universal basic income on 2022 policy system.

Tasks:

1. Implement a universal basic income benefit program with a monthly 60 ETB for everyone.

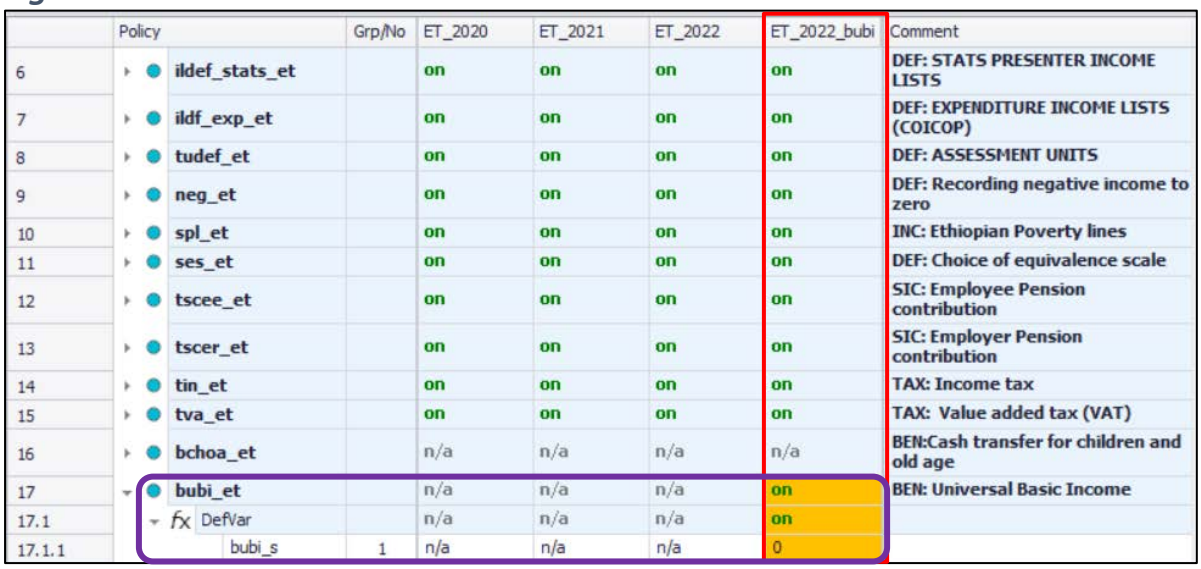
Solution and further information

Start by creating a new policy system based on the 2022 system and call it as “ET_2022_ bubi”. Then add new benefit policy called “bubi_et” after “bchoa_et”.

Add “DefVar” with one “placeholder” parameters, rename it to “bubi_s”. The initialized output variable for universal basic takes zero value in the beginning.

Every switch under new policy should be “ON”. The above procedures have been presented in Figure 4.1.

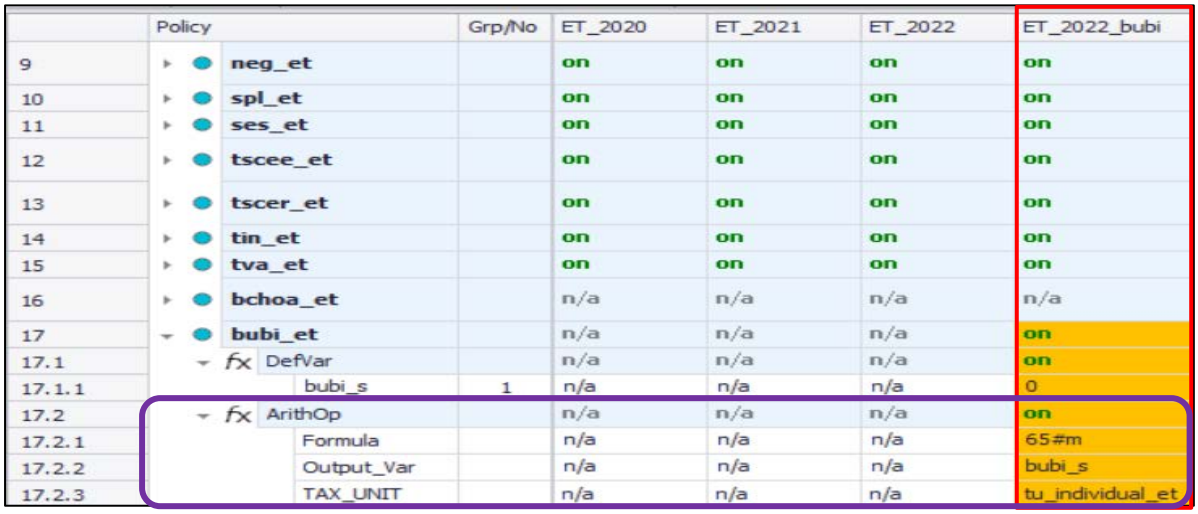
Figure 4.1



	Policy	Grp/No	ET_2020	ET_2021	ET_2022	ET_2022_bubi	Comment
6	ildef_stats_et		on	on	on	on	DEF: STATS PRESENTER INCOME LISTS
7	ildf_exp_et		on	on	on	on	DEF: EXPENDITURE INCOME LISTS (COICOP)
8	tudef_et		on	on	on	on	DEF: ASSESSMENT UNITS
9	neg_et		on	on	on	on	DEF: Recording negative income to zero
10	spl_et		on	on	on	on	INC: Ethiopian Poverty lines
11	ses_et		on	on	on	on	DEF: Choice of equivalence scale
12	tscee_et		on	on	on	on	SIC: Employee Pension contribution
13	tscer_et		on	on	on	on	SIC: Employer Pension contribution
14	tin_et		on	on	on	on	TAX: Income tax
15	tva_et		on	on	on	on	TAX: Value added tax (VAT)
16	bchoa_et		n/a	n/a	n/a	n/a	BEN:Cash transfer for children and old age
17	bubi_et		n/a	n/a	n/a	on	BEN: Universal Basic Income
17.1	DefVar		n/a	n/a	n/a	on	
17.1.1	bubi_s	1	n/a	n/a	n/a	0	

The universal basic income can be fully implemented in ETMOD by assigning a monthly 65 ETB benefit amount for all individuals without any eligibility criteria using ArithOp function as demonstrated in Figure 4.2.

Figure 4.2



	Policy	Grp/No	ET_2020	ET_2021	ET_2022	ET_2022_bubi
9	neg_et		on	on	on	on
10	spl_et		on	on	on	on
11	ses_et		on	on	on	on
12	tscee_et		on	on	on	on
13	tscer_et		on	on	on	on
14	tin_et		on	on	on	on
15	tva_et		on	on	on	on
16	bchoa_et		n/a	n/a	n/a	n/a
17	bubi_et		n/a	n/a	n/a	on
17.1	DefVar		n/a	n/a	n/a	on
17.1.1	bubi_s	1	n/a	n/a	n/a	0
17.2	ArithOp		n/a	n/a	n/a	on
17.2.1	Formula		n/a	n/a	n/a	65#m
17.2.2	Output_Var		n/a	n/a	n/a	bubi_s
17.2.3	TAX_UNIT		n/a	n/a	n/a	tu_individual_et

Note: The new output variable (bubi_s) should be added in "ildef_std_et" and "ildef_stats_et" policies; otherwise, the model will not utilize the simulated benefit while calculating disposable income and compiling the distributional indices as well the new variable will not be available in the output micro file.

Follow steps under exercise 1 to run ETMOD, produce outputs, and analyse the results.

Exercise 5: Introduce VAT on some of the exempted consumption Items and implement a much higher VAT rate, on 2019 policy system.

Tasks:

1. Elimination VAT exemption privilege for consumption expenditure on transport service, energy, and financial services and increase the VAT rate from 15% to 18%.

Solution and further information

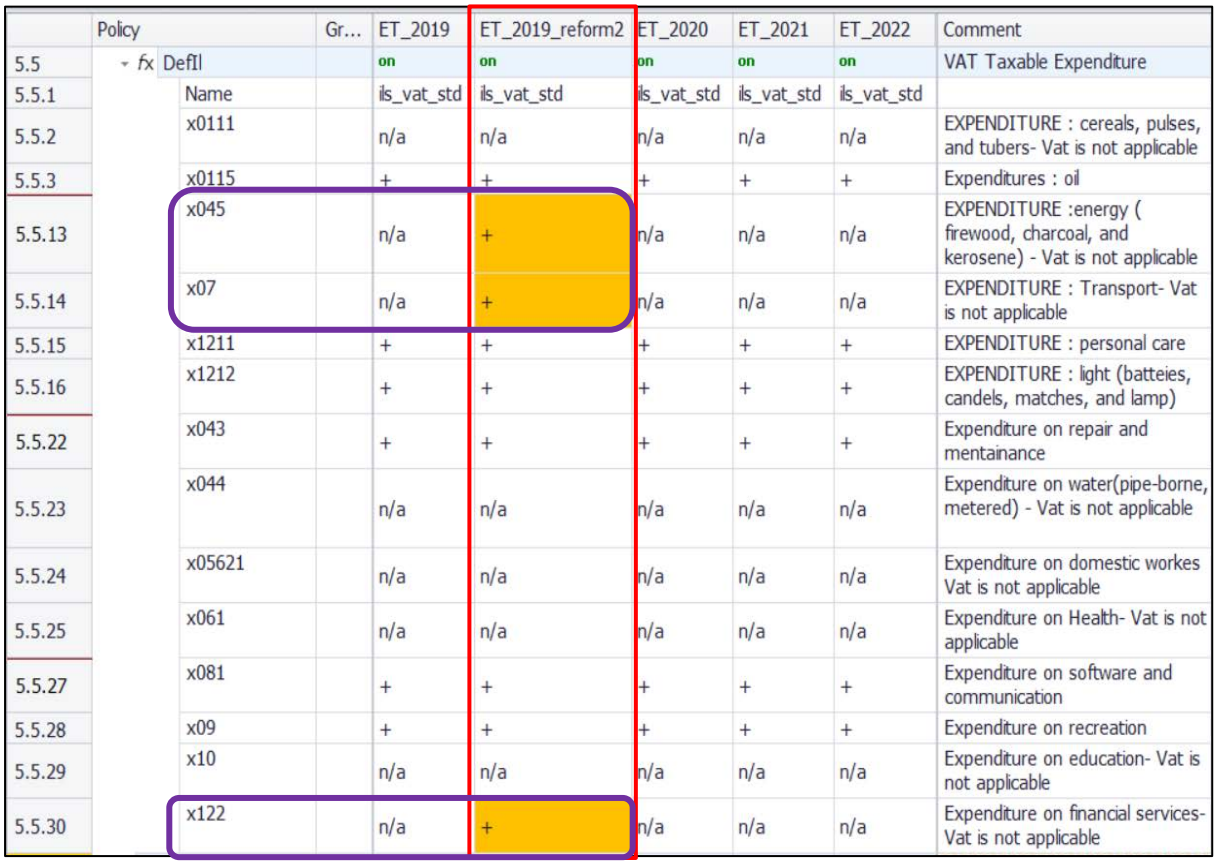
This exercise enables us to implement an ex-ante policy revision case for VAT policy in Ethiopia by replacing the zero rate with 15% for certain exempted commodities and raising the VAT rate to 18%.

Start by creating a new policy system based on the 2019 system and name it as "ET_2019_vat".

The hypothetical tax reform can be implemented based on the following two steps:

1. Expand the non-standard income list policy (**ildef_non_std_et**). Then open Spine number 5.5. Follow to replace "n/a" by "+" for Spine numbers 5.5.13, 5.5.14, and 5.5.30. The above procedure will permit the model to charge VAT on the consumption of transport, energy, and financial services, shown in Figure 5.1.

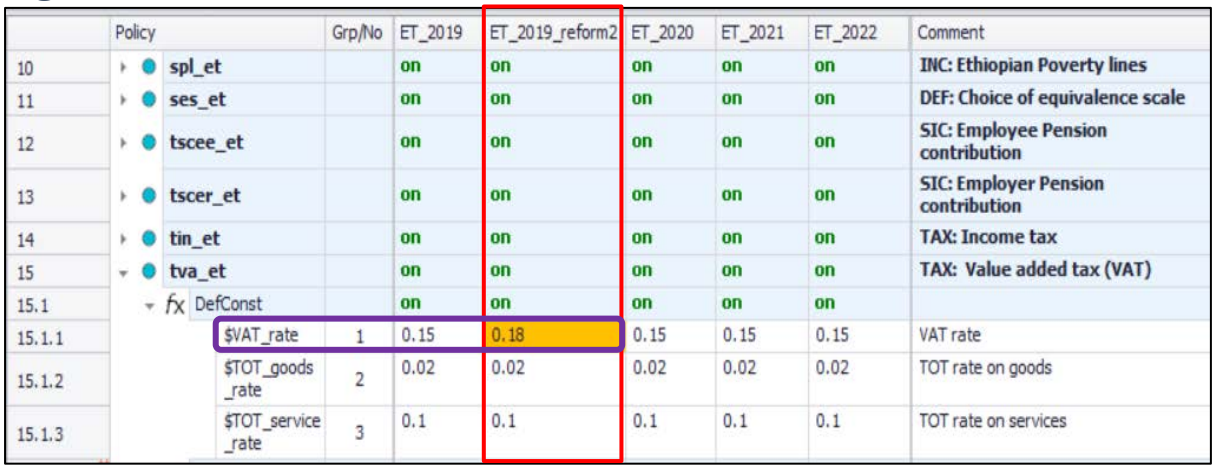
Figure 4.1



	Policy	Gr...	ET_2019	ET_2019_reform2	ET_2020	ET_2021	ET_2022	Comment
5.5	fx DefIl		on	on	on	on	on	VAT Taxable Expenditure
5.5.1	Name		ils_vat_std	ils_vat_std	ils_vat_std	ils_vat_std	ils_vat_std	
5.5.2	x0111		n/a	n/a	n/a	n/a	n/a	EXPENDITURE : cereals, pulses, and tubers- Vat is not applicable
5.5.3	x0115		+	+	+	+	+	Expenditures : oil
5.5.13	x045		n/a	+	n/a	n/a	n/a	EXPENDITURE :energy (firewood, charcoal, and kerosene) - Vat is not applicable
5.5.14	x07		n/a	+	n/a	n/a	n/a	EXPENDITURE : Transport- Vat is not applicable
5.5.15	x1211		+	+	+	+	+	EXPENDITURE : personal care
5.5.16	x1212		+	+	+	+	+	EXPENDITURE : light (batteies, candels, matches, and lamp)
5.5.22	x043		+	+	+	+	+	Expenditure on repair and mentainance
5.5.23	x044		n/a	n/a	n/a	n/a	n/a	Expenditure on water(pipe-borne, metered) - Vat is not applicable
5.5.24	x05621		n/a	n/a	n/a	n/a	n/a	Expenditure on domestic workes Vat is not applicable
5.5.25	x061		n/a	n/a	n/a	n/a	n/a	Expenditure on Health- Vat is not applicable
5.5.27	x081		+	+	+	+	+	Expenditure on software and communication
5.5.28	x09		+	+	+	+	+	Expenditure on recreation
5.5.29	x10		n/a	n/a	n/a	n/a	n/a	Expenditure on education- Vat is not applicable
5.5.30	x122		n/a	+	n/a	n/a	n/a	Expenditure on financial services- Vat is not applicable

2. Keep modifying the VAT policy by increasing the legislative VAT rate from 15% to 18% within "tva_et" policy, Figure 5.2 shows the counterfactual change in the indirect tax policy.

Figure 5.2



	Policy	Grp/No	ET_2019	ET_2019_reform2	ET_2020	ET_2021	ET_2022	Comment
10	spl_et		on	on	on	on	on	INC: Ethiopian Poverty lines
11	ses_et		on	on	on	on	on	DEF: Choice of equivalence scale
12	tscee_et		on	on	on	on	on	SIC: Employee Pension contribution
13	tscer_et		on	on	on	on	on	SIC: Employer Pension contribution
14	tin_et		on	on	on	on	on	TAX: Income tax
15	tva_et		on	on	on	on	on	TAX: Value added tax (VAT)
15.1	fx DefConst		on	on	on	on	on	
15.1.1	$VAT_rate	1	0.15	0.18	0.15	0.15	0.15	VAT rate
15.1.2	$TOT_goods_rate	2	0.02	0.02	0.02	0.02	0.02	TOT rate on goods
15.1.3	$TOT_service_rate	3	0.1	0.1	0.1	0.1	0.1	TOT rate on services

Follow steps under exercise 1 to run ETMOD, produce outputs, and analyse the results.

Exercise 6: Replace the progressive personal tax system with a flat tax regime, on the 2022 policy system.

Tasks:

1. Create a system with 20% and 25% flat tax rates for employment income and self-employment income, respectively.

Solution and further information

This exercise allows us to ponder counterfactual or an alternative personal income system for Ethiopia.

Start by creating a new policy system based on the 2022 system and call it as "ET_2022_reform3".

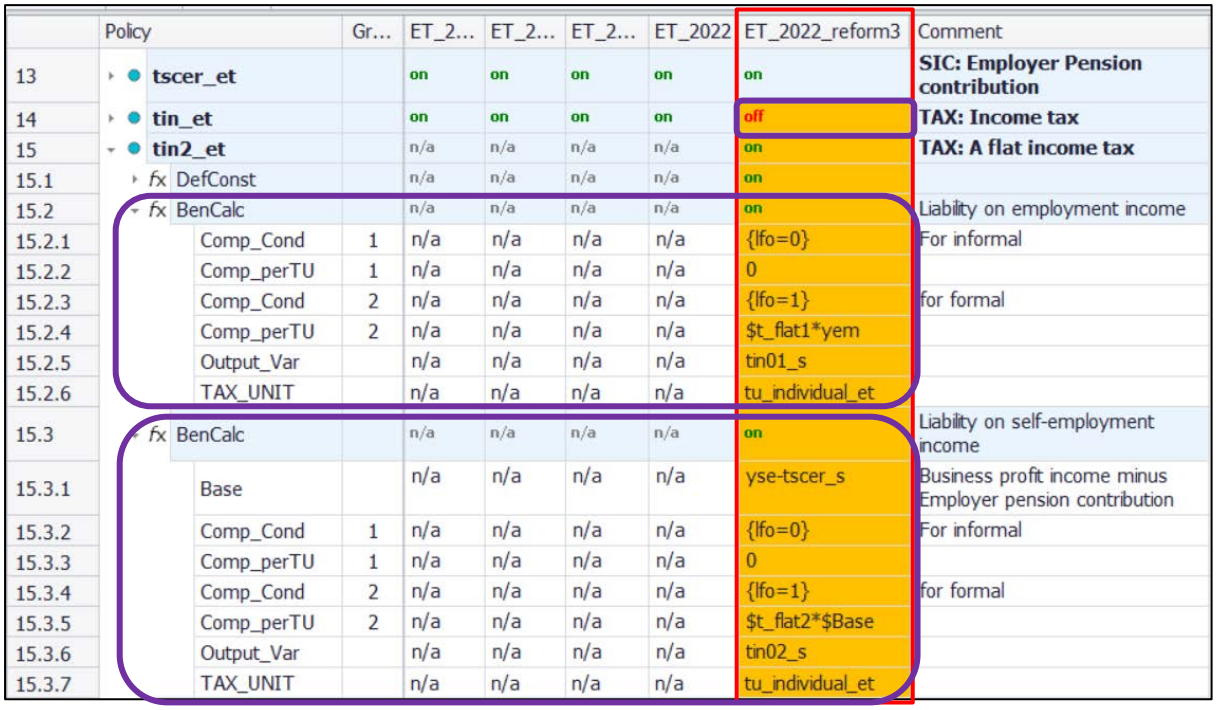
We can begin implementing the flat tax system by creating a new policy with the name "tin2_et" immediately after the existing "tin_et" policy. Then we add a DefConst in order to define the flat tax rates for employment (t_flat1) and self-employment income (t_flat2), illustrated in Figure 6.1.

Figure 6.1

	Policy		Gr...	ET_2...	ET_2...	ET_2...	ET_2022	ET_2022_reform3	Comment
8	tudef_et			on	on	on	on	on	DEF: ASSESSMENT UNITS
9	neg_et			on	on	on	on	on	DEF: Recording negative income to zero
10	spl_et			on	on	on	on	on	INC: Ethiopian Poverty
11	ses_et			on	on	on	on	on	DEF: Choice of equivalence scale
12	tscee_et			on	on	on	on	on	SIC: Employee Pension contribution
13	tscer_et			on	on	on	on	on	SIC: Employer Pension contribution
14	tin_et			on	on	on	on	on	TAX: Income tax
15	tin2_et			n/a	n/a	n/a	n/a	on	TAX: A flat income tax regime
15.1		fx DefConst		n/a	n/a	n/a	n/a	on	
15.1.1			$t_flat1	1	n/a	n/a	n/a	n/a	0.20	Flat rate for employees
15.1.2			$t_flat2	2	n/a	n/a	n/a	n/a	0.25	Flat rate for self-employed

We use the **BenCalc** functions to uniquely simulate taxes on employment and self-employment incomes. It is worth mentioning practicality of levying personal income taxes only on formal employment and switching off the existing personal income tax policy **(tin_et** on Spine number 14). In addition, the tax base for self-employment must net off the pension contribution by the employer (**tscer_s**). The procedure is demonstrated in Figure 6.2.

Figure 6.2



	Policy		Gr...	ET_2...	ET_2...	ET_2...	ET_2022	ET_2022_reform3	Comment
13	tscer_et			on	on	on	on	on	**SIC: Employer Pension contribution**
14	tin_et			on	on	on	on	off	**TAX: Income tax**
15	tin2_et			n/a	n/a	n/a	n/a	on	**TAX: A flat income tax**
15.1	fx DefConst			n/a	n/a	n/a	n/a	on	
15.2	fx BenCalc			n/a	n/a	n/a	n/a	on	Liability on employment income
15.2.1		Comp_Cond	1	n/a	n/a	n/a	n/a	{lfo=0}	For informal
15.2.2		Comp_perTU	1	n/a	n/a	n/a	n/a	0	
15.2.3		Comp_Cond	2	n/a	n/a	n/a	n/a	{lfo=1}	for formal
15.2.4		Comp_perTU	2	n/a	n/a	n/a	n/a	$t_flat1*yem	
15.2.5		Output_Var		n/a	n/a	n/a	n/a	tin01_s	
15.2.6		TAX_UNIT		n/a	n/a	n/a	n/a	tu_individual_et	
15.3	fx BenCalc			n/a	n/a	n/a	n/a	on	Liability on self-employment income
15.3.1		Base		n/a	n/a	n/a	n/a	yse-tscer_s	Business profit income minus Employer pension contribution
15.3.2		Comp_Cond	1	n/a	n/a	n/a	n/a	{lfo=0}	For informal
15.3.3		Comp_perTU	1	n/a	n/a	n/a	n/a	0	
15.3.4		Comp_Cond	2	n/a	n/a	n/a	n/a	{lfo=1}	for formal
15.3.5		Comp_perTU	2	n/a	n/a	n/a	n/a	t_flat2*Base	
15.3.6		Output_Var		n/a	n/a	n/a	n/a	tin02_s	
15.3.7		TAX_UNIT		n/a	n/a	n/a	n/a	tu_individual_et	

Follow steps under exercise 1 to run ETMOD, produce outputs, and analyse the results.

Exercise 7: Model a new benefit policy targeting college students, on the 2020 policy system.

Tasks:

1. The new policy would allow the government to provide monthly 300ETB stipends for university students.

Solution and further information

This exercise informs the budget cost and distributional effect of a counterfactual benefit for students in higher education.

Start by creating a new policy system based on the 2020 system and name it as "ET_2020_bedet".

We begin modelling a hypothetical university student benefit program by creating a new policy with the "**bedet_et**" name after "**bed02_et"** in Spine order. We don't need to initialize the output variable using the **DefVar** function; it is possible to use the default variable name for the benefit of the tertiary student (**bedet_s**), it is already defined in the system (check by navigating into "**Administration Tools**" Ribbons and clicking "**Variables**").

The benefit amount can be allocated to the eligible students using **BenCalc** function, as illustrated in Figure 7.1.

Please refer the DRD file for more information about **dec01** variables, used in **BenCalc** function.

Figure 7.1

	Policy		Gr...	ET_2019	ET_2020	ET_2020_bedet	ET_2021	ET_2022	Comment
19	bsaur03_et			on	on	on	on	on	BEN: Rural PSNP, Direct Support (RPSNP-PW)
20	bed01_et			n/a	on	on	on	on	BEN: School feeding, KG-Grade 8 students (in kind)
21	bed02_et			n/a	on	on	on	on	BEN: School uniform, KG-Grade 12 students (in kind)
22	bedet_et			n/a	n/a	on	n/a	n/a	BEN: Benefit for
22.1	fx BenCalc			n/a	n/a	on	n/a	n/a	
22.1.1		Comp_C...	1	n/a	n/a	dec01 >=5	n/a	n/a	For bachelor, master, and Ph.D students
22.1.2		Comp_p...	1	n/a	n/a	300#m	n/a	n/a	
22.1.3		Output_...		n/a	n/a	bedet_s	n/a	n/a	
22.1.4		TAX_UNIT		n/a	n/a	tu_individual_et	n/a	n/a	

Note: The new output variable (bedet_s) should be added in "ildef_std_et" and "ildef_stats_et" policies; otherwise, the model will not utilize the simulated benefit while

calculating disposable income and compiling the distributional indices as well the new variable will not be available in the output micro file.

Follow steps of exercise 1 to run ETMOD, produce outputs, and analyse the results.