SOUTHMOD

Exercises with solutions

Mozambique

MOZMOD v2.0

September 2019

República de Moçambique
Ministério da Economia e Finanças

saspri

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Contents

Note: The exercises and solutions presented below are applicable to MOZMOD model v2.1.

Part A: Preparing to run MOZMOD, use Summary Statistics Tool and implement a policy reform

Difficulty level: Beginner

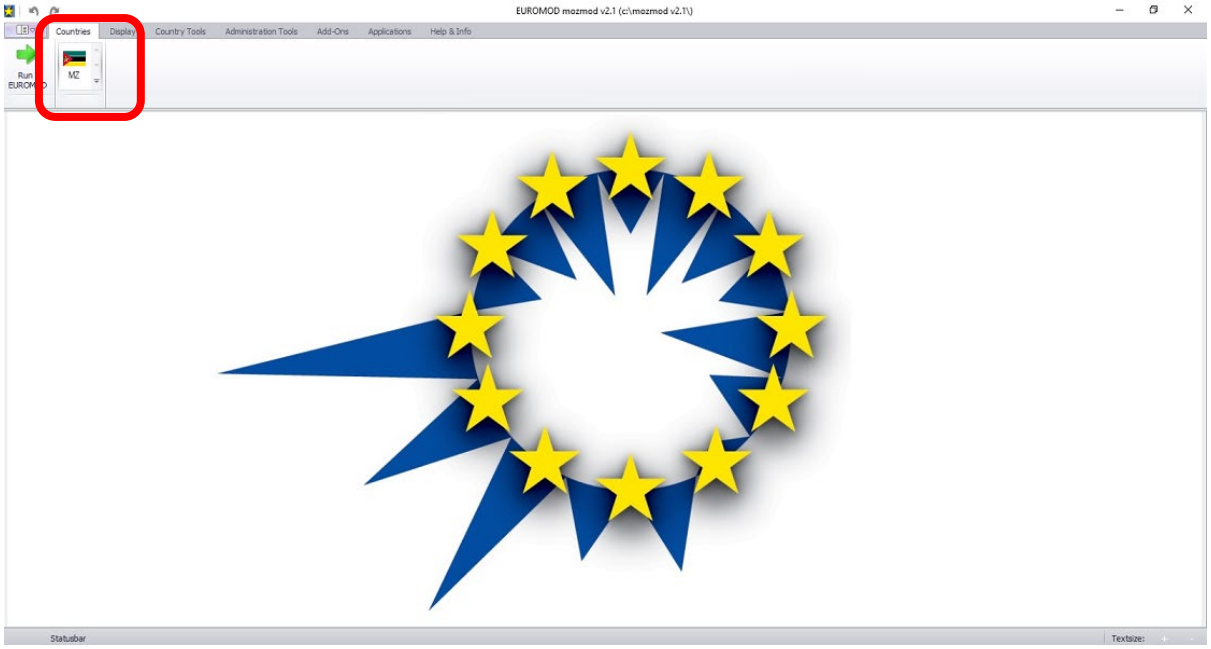
Exercise 1: Run MOZMOD and produce summary statistics of poverty and inequality

Activity:

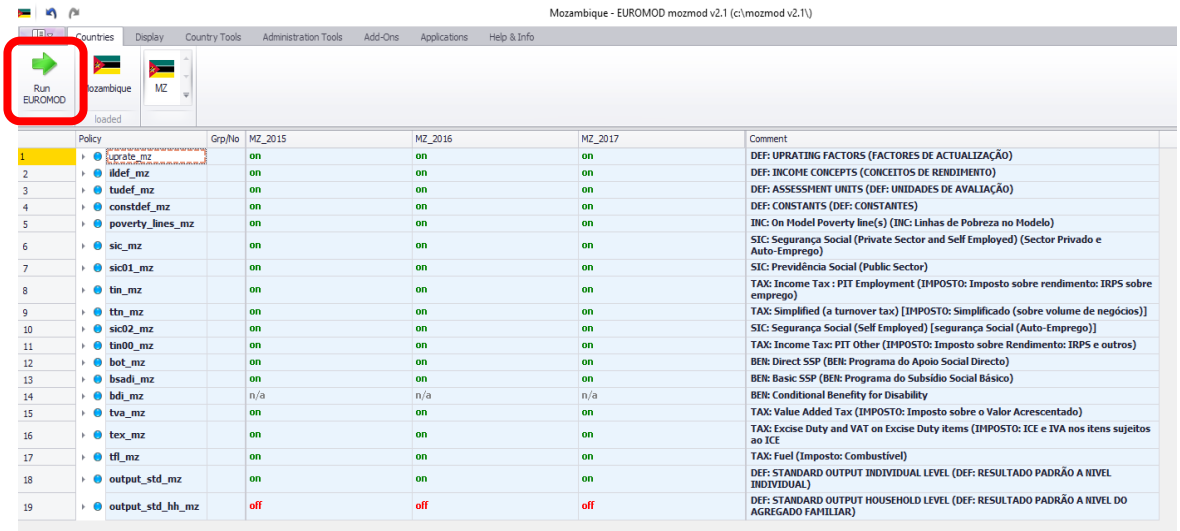
Run EUROMOD and produce summary statistics of poverty (as measured by the headcount index based on consumption) and inequality (as measured by the Gini index based on consumption) for systems 2016 and 2017.

Solution

Step1: Click on the flag so that the software is started in order to access the main window of the user interface.



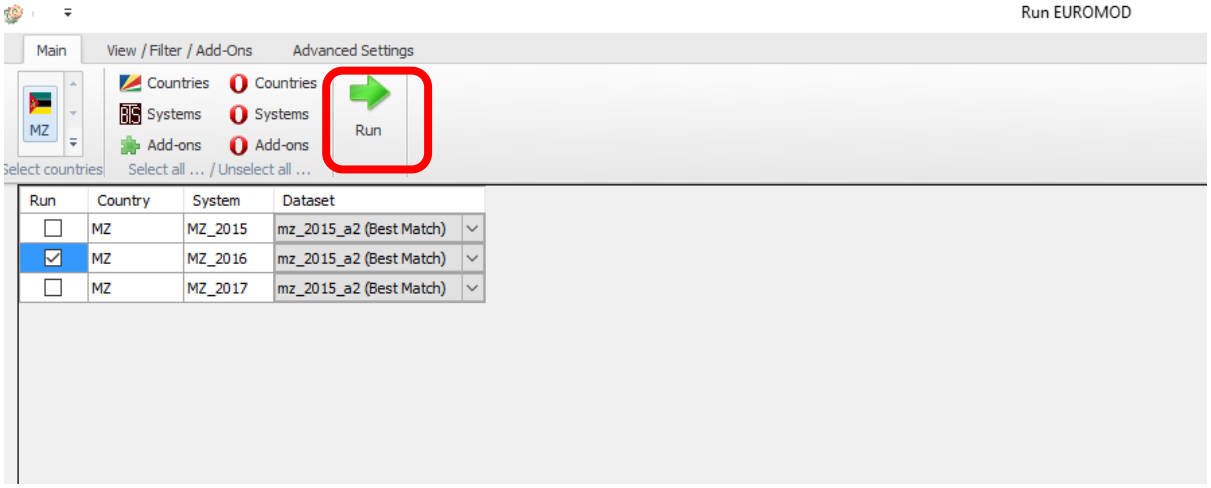
Step 2: Run MOZMOD for the 2016 and the 2017 policy systems.



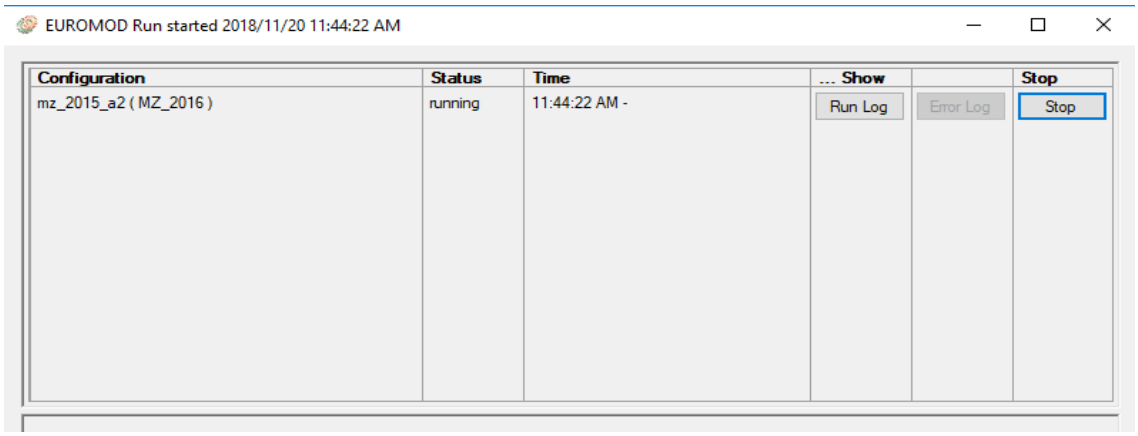
Step 3: MOZMOD can be run for one system at a time (A) or for two systems at the same time (B):

A. Running MOZMOD for one system only, 2016 in this case:

a. Select the system you would like to run, thus MZ_2016 in this case and hit the 'Run' button:

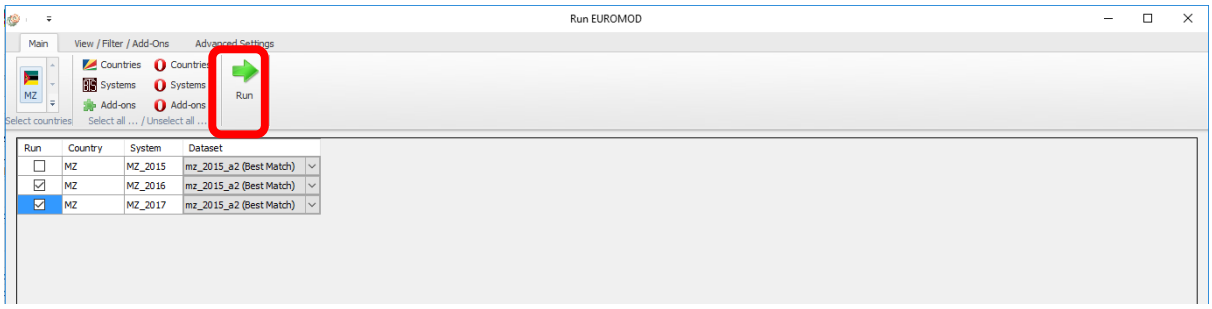


b. Wait as the software is compiling results:

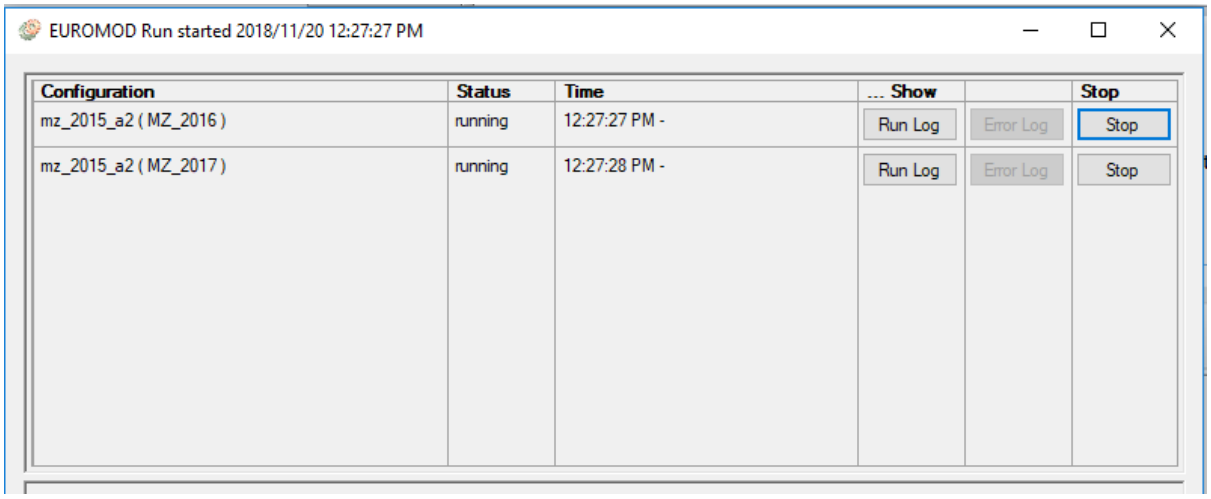


c. Repeat for the second policy system, thus MZ_2017.

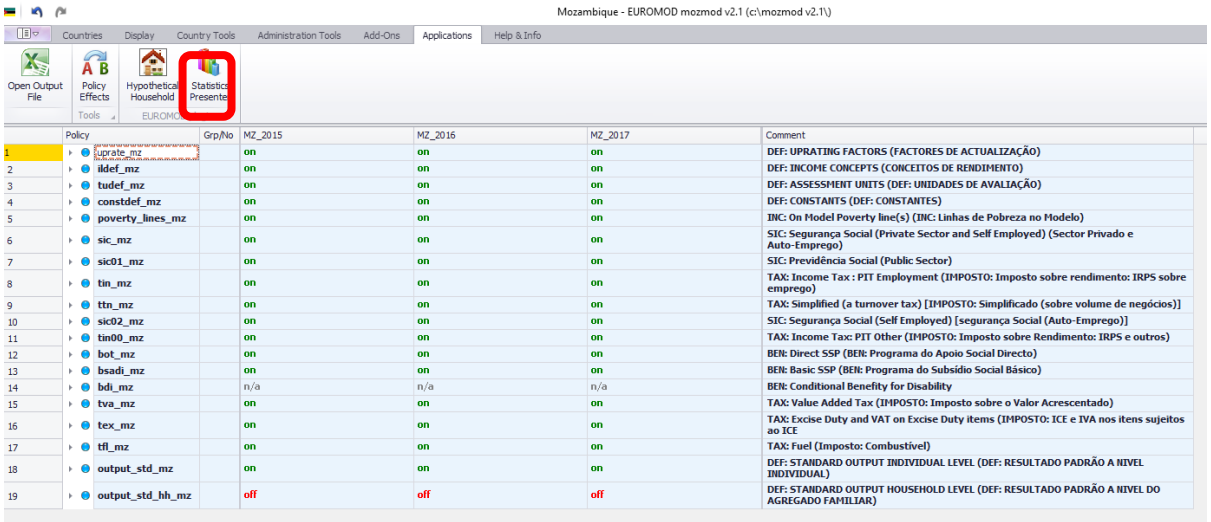
B. Running MOZMOD for two systems at the same time: a. Select the systems you would like to run, thus MZ_2016 and MZ_2017, and hit the 'Run' button:



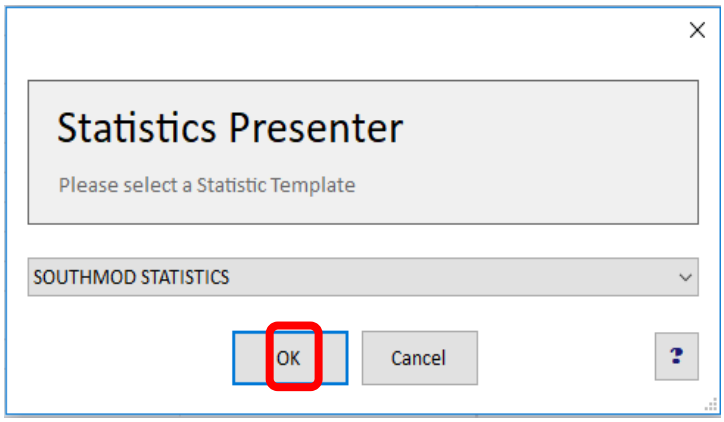
b. Wait as the software is compiling results:



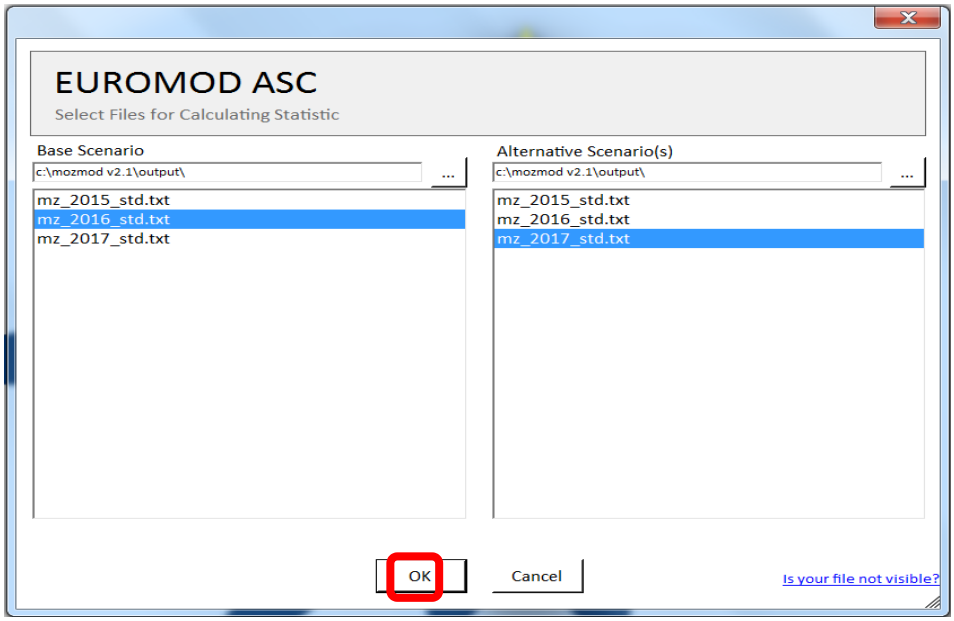
Step 4: In the previous steps **MOZMOD** produced micro data sets. The Statistics Presenter tool compiles based on these data sets poverty, inequality and few other measures. To access the Summary Statistics Plugin, you should go to the tab **'**Applications**'** and click on the **'Statistics Presenter'.**



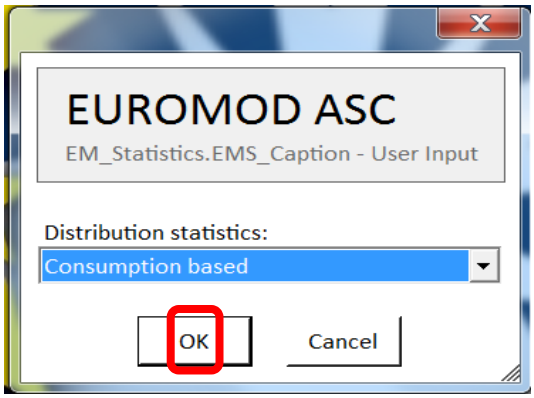
Step 5: Choose 'SOUTHMOD Statistics – COMPARISON' to look at comparative results for MZ_2016 and MZ_2017 side by side and click OK:



Step 6: Choose which policy system is the base scenario and which policy scenario is the alternative scenario and click OK. Here we choose 2016 as the base and 2017 as the alternative scenario:



Step 7: Choose consumption based distributional statistics and click ok:



Step 8: Once the Statistics Presenter has compiled the results (this may take some time depending on the size of the data set and the power of your machine), you can switch between the different tabs that contains the information you need to answer your question. For the exercise at hand the Poverty and Inequality tabs are relevant.

SOUTHMOD STATISTICS - COMPARISON

Results for mz_2016_std.txt / mz_2017_std.txt

Tax-ben policy | Poverty | Inequality

Poverty - Consumption based

after taxes and transfers

	Base scenario	Alternative scenario	Difference base vs alternative
Share of poor population, in %:			
All	37.5	47.5	9.9
Poor households out of ...			
... male headed households	36.9	47.1	10.2
... female headed households	39.4	48.6	9.2
... households with children	39.0	49.1	10.2
... households with older persons	40.3	50.1	9.8
Poverty gap (average normalised poverty gap, FGT(1)):			
All	11.8	15.9	4.0
Poor households out of ...			
... male headed households	11.5	15.6	4.0
... female headed households	12.8	16.9	4.1
... households with children	12.3	16.5	4.2
... households with older persons	14.2	18.4	4.2
Absolute national poverty line, in national currency, yearly:	13,359.0	13,308.0	-51.0

SOUTHMOD STATISTICS - COMPARISON

Results for mz_2016_std.txt / mz_2017_std.txt

Tax-ben policy | Poverty | Inequality

Inequality and the household income distribution - Consumption based

after taxes and transfers, yearly

	Base scenario	Alternative scenario	Difference base vs alternative
Gini (household income)	0.4343	0.4223	-0.0119
P80/P20	2.69	2.62	-0.07
Quantiles of distribution and median			
20th	9,849.40	8,542.51	-1,306.89
40th	13,892.44	11,969.75	-1,922.69
50th	15,922.80	13,748.56	-2,174.24
60th	18,361.96	15,767.72	-2,594.24
80th	26,529.24	22,391.43	-4,137.81
Absolute national poverty line, in national currency, yearly	13,359.00	13,308.00	-51.00

Under the **'Info' button** you find more information and assumptions regarding how the statistics were compiled.

Using the **'Export' button** you can export to and save the results as excel format which might be handy for analysis. You can either export parts of the results (tabs or years) or all results at once to an excel file.

Exercise 2: Add a new system based on system 2017.

Activity:

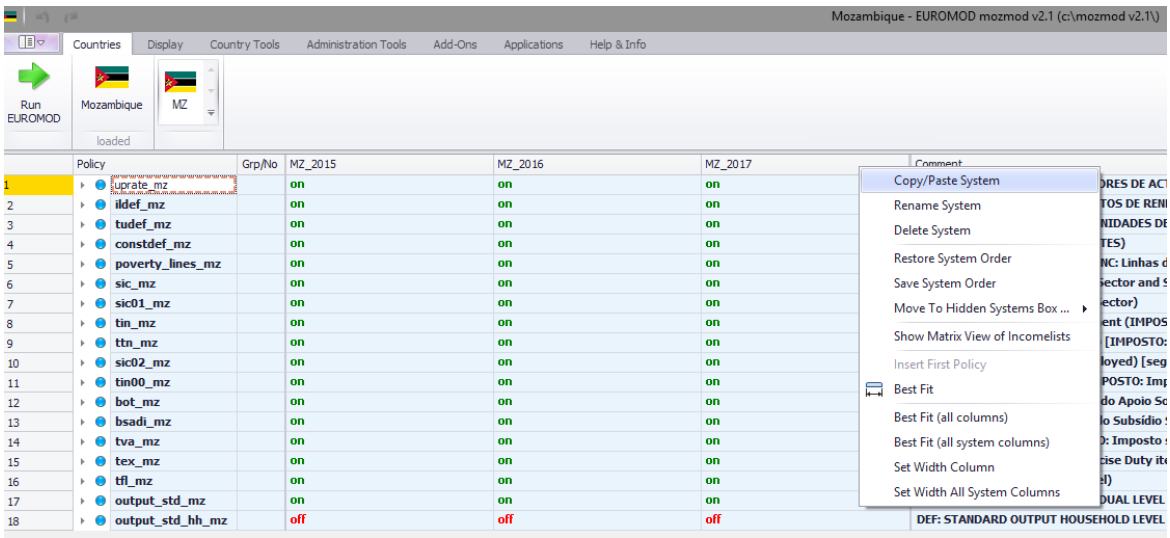
Note: call a new system MZ_2017_reform.

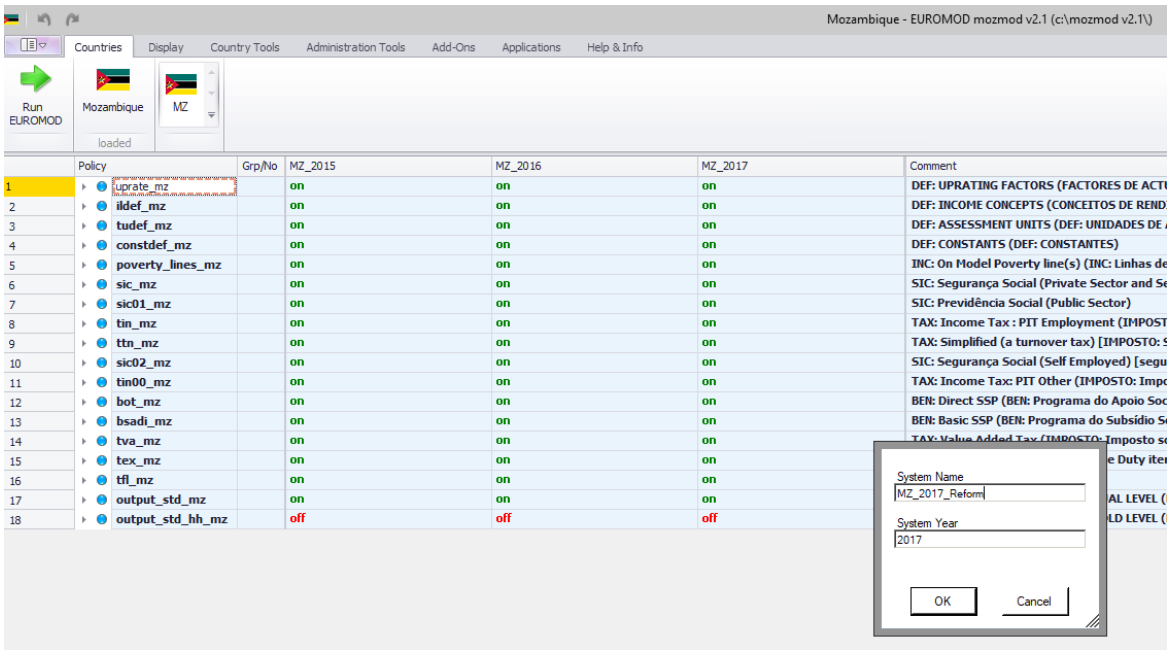
Solution

Step 1: Before amending existing or adding new policies you need to add a new system; then do the amendments and additions in the new system.

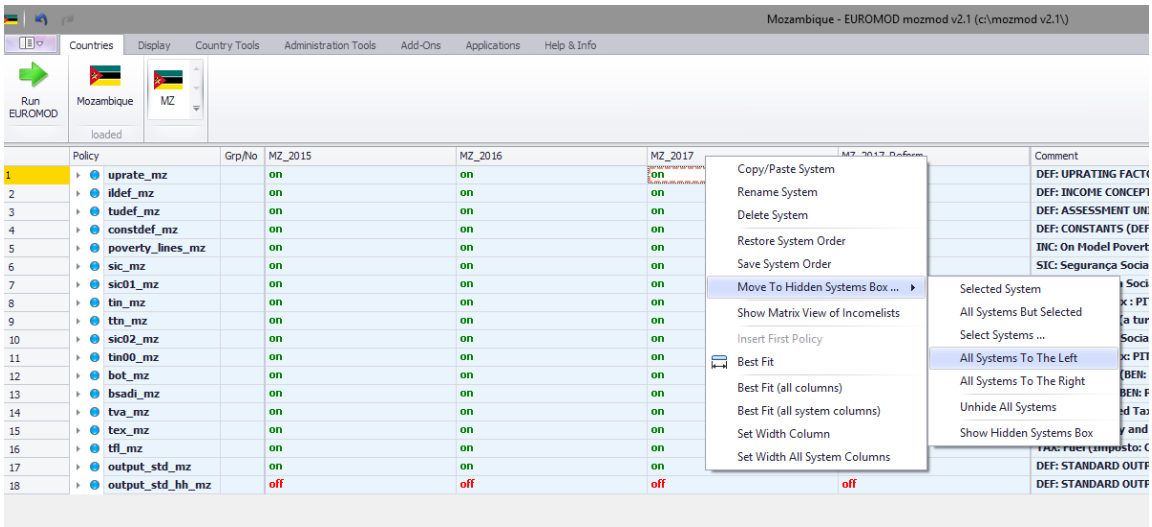
- How to add a new system?

Right click on the system 'MZ_2017' → copy/paste system → name it 'MZ_2017_reform'

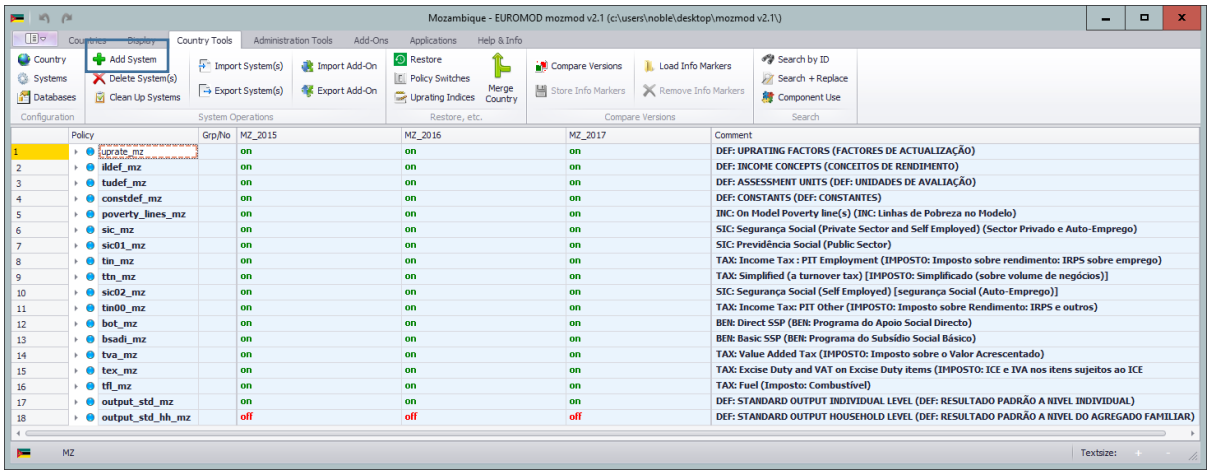




Then hide the 2015 and 2016 systems, by right clicking on 'MZ_2017' → Move To Hidden Systems Box → All Systems To The Left



The alternative way to add a new system is to select Country Tools tab + Add System button and follow the instructions.



Part B: Changing Existing Policies in MOZMOD

Difficulty level: Intermediate

Exercise 3: Change the Simplified Tax policy by increasing the tax rate

Activity:

Change the Simplified Tax [IMPOSTO: Simplificado (sobre vlume de negocios)] by raising the tax rate from 3% to 4%

Questions:

By how much does revenue from direct taxes increase?

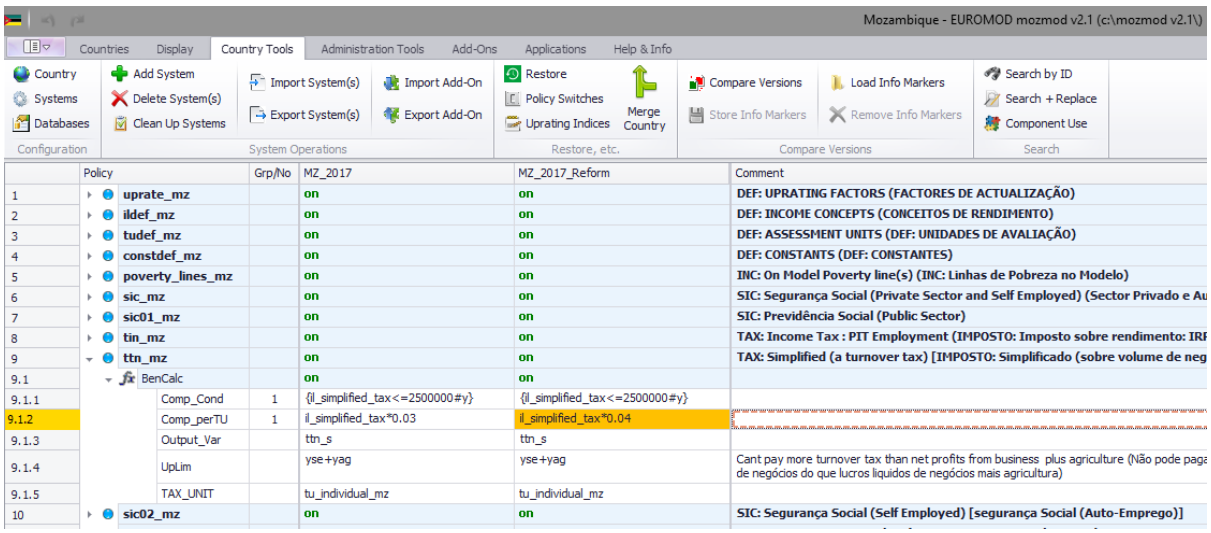
Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

Step 2: Amend the Simplified Tax rate in the policy ttn_mz

- How to change the tax rate?

Go to the policy ttn_mz and change the tax rate within the parameter Comp_perTU from 0.03 to 0.04 (only for the MZ_2017_reform system).



	Policy	Grp/No	MZ_2017	MZ_2017_Reform	Comment
1	uprate_mz		on	on	DEF: UPRATING FACTORS (FACTORES DE ACTUALIZAÇÃO)
2	ildef_mz		on	on	DEF: INCOME CONCEPTS (CONCEITOS DE RENDIMENTO)
3	tudef_mz		on	on	DEF: ASSESSMENT UNITS (DEF: UNIDADES DE AVALIAÇÃO)
4	constdef_mz		on	on	DEF: CONSTANTS (DEF: CONSTANTES)
5	poverty_lines_mz		on	on	INC: On Model Poverty line(s) (INC: Linhas de Pobreza no Modelo)
6	sic_mz		on	on	SIC: Segurança Social (Private Sector and Self Employed) (Sector Privado e Au
7	sic01_mz		on	on	SIC: Previdência Social (Public Sector)
8	tin_mz		on	on	TAX: Income Tax : PIT Employment (IMPOSTO: Imposto sobre rendimento: IRF
9	ttn_mz		on	on	TAX: Simplified (a turnover tax) [IMPOSTO: Simplificado (sobre volume de neg
9.1	BenCalc		on	on	
9.1.1	Comp_Cond	1	{il_simplified_tax<=2500000#y}	{il_simplified_tax<=2500000#y}	
9.1.2	Comp_perTU	1	il_simplified_tax*0.03	il_simplified_tax*0.04	
9.1.3	Output_Var		ttn_s	ttn_s	
9.1.4	UpLim		yse+yag	yse+yag	Cant pay more turnover tax than net profits from business plus agriculture (Não pode paga de negócios do que lucros liquidos de negócios mais agricultura)
9.1.5	TAX_UNIT		tu_individual_mz	tu_individual_mz	
10	sic02_mz		on	on	SIC: Segurança Social (Self Employed) [segurança Social (Auto-Emprego)]

Step 3: Run the MZ_2017 and MZ_2017_Reform systems in Statistics Presenter to identify how much extra direct tax the reform would raise.

Answer: Mt 4,456.92 Million

Exercise 4: Change the Value Added Tax policy by raising the tax rate for electricity

Activity:

Change the VAT policy [IMPOSTO: Imposto sobre o Valor Acrescentado] by raising the tax rate for electricity from 10.54% to 12.00%

Question:

By how much does this reform increase revenue from indirect taxes?

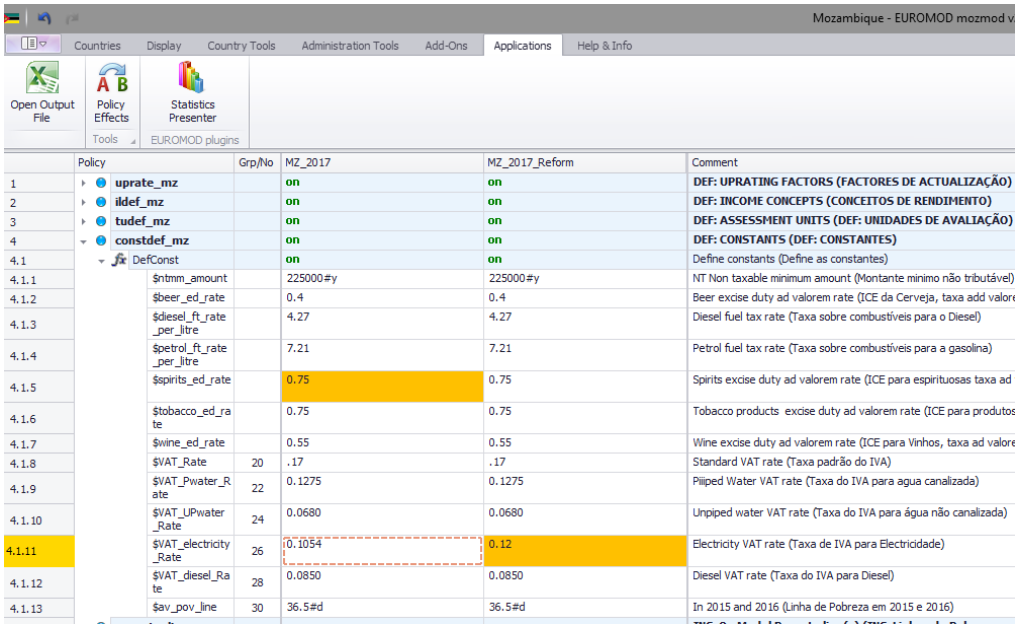
Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

Step 2: Amend the tax rate for electricity

- How to change the tax rate for electricity?

As the tax rate for electricity is included in the policy tva_mz as a constant, the value of the constant needs to be amended in the constdef_mz policy. Go to the policy constdef_mz and change the value of the parameter $VAT_electricity_Rate from 0.1054 to 0.12 (only for the MZ2017_Reform system).



	Policy	Grp/No	MZ_2017	MZ_2017_Reform	Comment
1	uprate_mz		on	on	DEF: UPRATING FACTORS (FACTORES DE ACTUALIZAÇÃO)
2	ildef_mz		on	on	DEF: INCOME CONCEPTS (CONCEITOS DE RENDIMENTO)
3	tudef_mz		on	on	DEF: ASSESSMENT UNITS (DEF: UNIDADES DE AVALIAÇÃO)
4	constdef_mz		on	on	DEF: CONSTANTS (DEF: CONSTANTES)
4.1	DefConst		on	on	Define constants (Define as constantes)
4.1.1	$ntmm_amount		225000#y	225000#y	NT Non taxable minimum amount (Montante minimo não tributável)
4.1.2	$beer_ed_rate		0.4	0.4	Beer excise duty ad valorem rate (ICE da Cerveja, taxa add valor
4.1.3	$diesel_ft_rate _per_litre		4.27	4.27	Diesel fuel tax rate (Taxa sobre combustíveis para o Diesel)
4.1.4	$petrol_ft_rate _per_litre		7.21	7.21	Petrol fuel tax rate (Taxa sobre combustíveis para a gasolina)
4.1.5	$spirits_ed_rate		0.75	0.75	Spirits excise duty ad valorem rate (ICE para espirituosas taxa ad
4.1.6	$tobacco_ed_ra te		0.75	0.75	Tobacco products excise duty ad valorem rate (ICE para produtos
4.1.7	$wine_ed_rate		0.55	0.55	Wine excise duty ad valorem rate (ICE para Vinhos, taxa ad valore
4.1.8	$VAT_Rate	20	.17	.17	Standard VAT rate (Taxa padrão do IVA)
4.1.9	$VAT_Pwater_R ate	22	0.1275	0.1275	Piiped Water VAT rate (Taxa do IVA para agua canalizada)
4.1.10	$VAT_UPwater _Rate	24	0.0680	0.0680	Unpiped water VAT rate (Taxa do IVA para água não canalizada)
4.1.11	$VAT_electricity _Rate	26	0.1054	0.12	Electricity VAT rate (Taxa de IVA para Electricidade)
4.1.12	$VAT_diesel_Ra te	28	0.0850	0.0850	Diesel VAT rate (Taxa do IVA para Diesel)
4.1.13	$av_pov_line	30	36.5#d	36.5#d	In 2015 and 2016 (Linha de Pobreza em 2015 e 2016)

Step 3: Run the MZ_2017 and MZ_2017_Reform systems in Statistics Presenter to identify how much extra revenue has been gained in indirect taxes as a result of this reform.

Note: The simulated amount of VAT in the system MZ_2017 is much lower than the amount of VAT revenue reported by Government. There are at least two reasons for this: first, expenditure data may be under-

recorded; and second, VAT is obtained from sources other than households and so the underpinning dataset would never be expected to simulate the full VAT revenue amount.

Answer: Mt 18.89 Million

Exercise 5: Change the Social Insurance policy by amending the contribution rates

Activity:

Change the Social Insurance rules so that the employer and employee each contribute 4% for the Private Sector and Self Employed [Seguranca Social: Sector Privado e Auto-Emprego], and so that employees contribute 8% in the Public Sector [Previdencia Social].

Questions:

What is the new Social Insurance revenue?

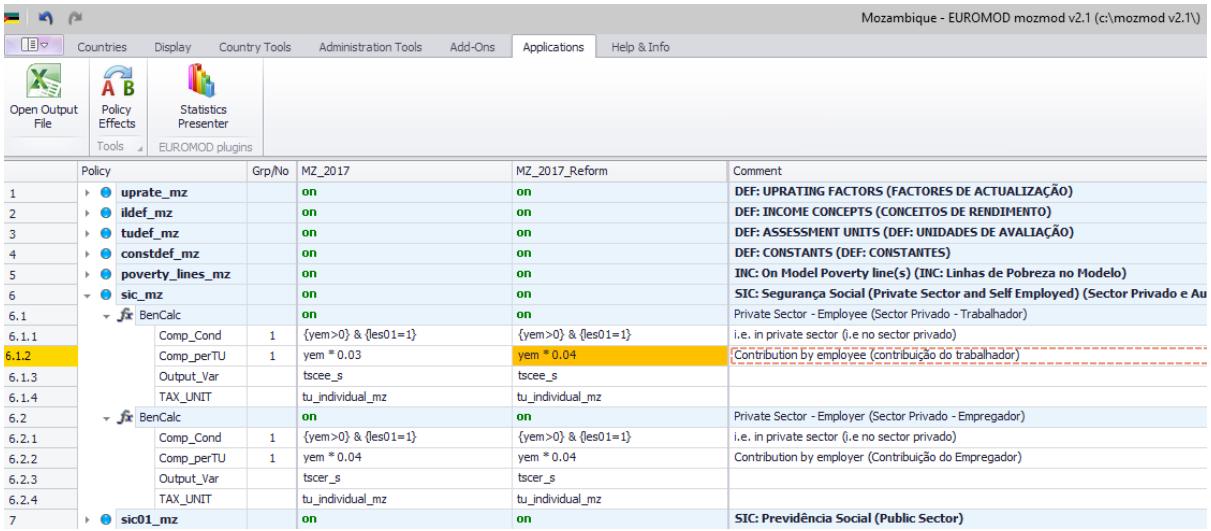
Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

Step 2: Now amend the policy for Private Sector and Self Employed, sic_mz

- How to change the contribution rate?

Go to the policy sic_mz. In the first BenCalc function change the contribution rate for employees in the Comp_perTU parameter from 0.03 to 0.04. (Only change the MZ_2017_reform system).You will see that the contribution rate for their employers, contained in the second BenCalc function is already 4% and so this does not need to be changed.

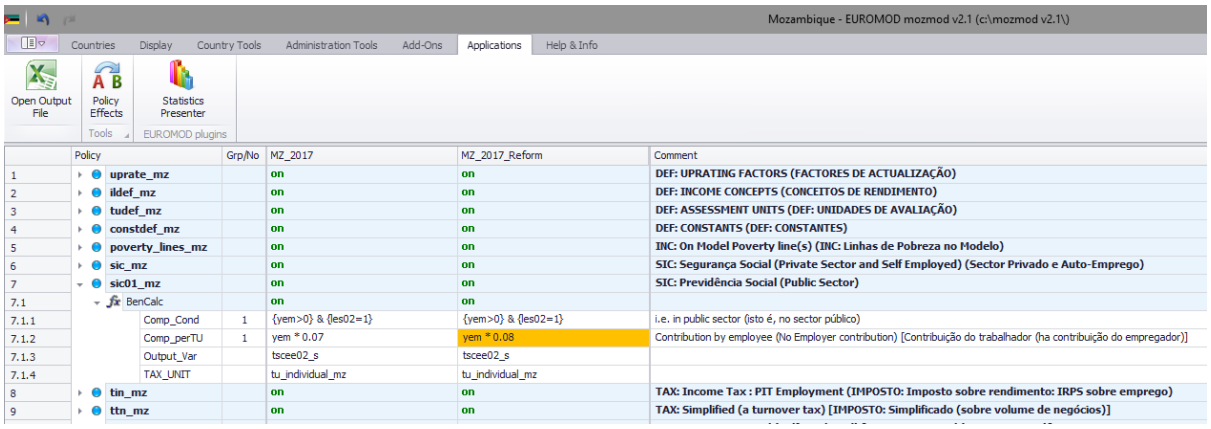


	Policy		Grp/No	MZ_2017	MZ_2017_Reform	Comment
1	uprate_mz			on	on	DEF: UPRATING FACTORS (FACTORES DE ACTUALIZAÇÃO)
2	ildef_mz			on	on	DEF: INCOME CONCEPTS (CONCEITOS DE RENDIMENTO)
3	tudef_mz			on	on	DEF: ASSESSMENT UNITS (DEF: UNIDADES DE AVALIAÇÃO)
4	constdef_mz			on	on	DEF: CONSTANTS (DEF: CONSTANTES)
5	poverty_lines_mz			on	on	INC: On Model Poverty line(s) (INC: Linhas de Pobreza no Modelo)
6	sic_mz			on	on	SIC: Segurança Social (Private Sector and Self Employed) (Sector Privado e Au
6.1		BenCalc		on	on	Private Sector - Employee (Sector Privado - Trabalhador)
6.1.1		Comp_Cond	1	{yem>0} & {les01=1}	{yem>0} & {les01=1}	i.e. in private sector (i.e no sector privado)
6.1.2		Comp_perTU	1	yem * 0.03	yem * 0.04	Contribution by employee (contribuição do trabalhador)
6.1.3		Output_Var		tscee_s	tscee_s	
6.1.4		TAX_UNIT		tu_individual_mz	tu_individual_mz	
6.2		BenCalc		on	on	Private Sector - Employer (Sector Privado - Empregador)
6.2.1		Comp_Cond	1	{yem>0} & {les01=1}	{yem>0} & {les01=1}	i.e. in private sector (i.e no sector privado)
6.2.2		Comp_perTU	1	yem * 0.04	yem * 0.04	Contribution by employer (Contribuição do Empregador)
6.2.3		Output_Var		tscer_s	tscer_s	
6.2.4		TAX_UNIT		tu_individual_mz	tu_individual_mz	
7	sic01_mz			on	on	SIC: Previdência Social (Public Sector)

Step 3: Now amend the policy for the Public Sector, sic01_mz

- How to change the contribution rate?

Go to the policy sic01_mz. In the BenCalc function change the contribution rate for employees in the Comp_perTU parameter from 0.07 to 0.08. (Only change the MZ_2017_reform system).



	Policy	Grp/No	MZ_2017	MZ_2017_Reform	Comment
1	uprate_mz		on	on	DEF: UPRATING FACTORS (FACTORES DE ACTUALIZAÇÃO)
2	ildef_mz		on	on	DEF: INCOME CONCEPTS (CONCEITOS DE RENDIMENTO)
3	tudef_mz		on	on	DEF: ASSESSMENT UNITS (DEF: UNIDADES DE AVALIAÇÃO)
4	constdef_mz		on	on	DEF: CONSTANTS (DEF: CONSTANTES)
5	poverty_lines_mz		on	on	INC: On Model Poverty line(s) (INC: Linhas de Pobreza no Modelo)
6	sic_mz		on	on	SIC: Segurança Social (Private Sector and Self Employed) (Sector Privado e Auto-Emprego)
7	sic01_mz		on	on	SIC: Previdência Social (Public Sector)
7.1	BenCalc		on	on	
7.1.1	Comp_Cond	1	{yem>0} & {les02=1}	{yem>0} & {les02=1}	i.e. in public sector (isto é, no sector público)
7.1.2	Comp_perTU	1	yem * 0.07	yem * 0.08	Contribution by employee (No Employer contribution) [Contribuição do trabalhador (ha contribuição do empregador)]
7.1.3	Output_Var		tscee02_s	tscee02_s	
7.1.4	TAX_UNIT		tu_individual_mz	tu_individual_mz	
8	tin_mz		on	on	TAX: Income Tax : PIT Employment (IMPOSTO: Imposto sobre rendimento: IRPS sobre emprego)
9	ttn_mz		on	on	TAX: Simplified (a turnover tax) [IMPOSTO: Simplificado (sobre volume de negócios)]

Step 4: Run the MZ_2017 and MZ_2017_Reform systems in Statistics Presenter to identify the new Social Insurance revenue from contributions.

Answer: Mt 11,815 Million (an increase of Mt 1,358 Million)

Exercise 6: Change the Direct Social Support Programme by increasing the value of support by 50%

Activity:

Change the Direct Social Support Programme (DSSP) [Programa Apoio Social Directo] by increasing the value of the food boxes by 50%.

Question:

What is the impact of this reform on consumption poverty in Mozambique?

Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

Step 2: The values of the food boxes occur in the final function (BenCalc) of the policy bot_mz.

- How to change the amounts?

In this example, the value of the food boxes depends on household size. For each of the household sizes, multiply the value by 1.5.

11	tin00_mz		on	on	TAX: Income Tax: PIT Other (IMPOSTO: Imposto sobre Rendimento: IRPS e outros)
12	bot_mz		on	on	BEN: Direct SSP (BEN: Programa do Apoio Social Directo)
12.1	DefVar		on	on	
12.2	Elig		on	on	Child headed households (Agregados Familiares chefiados por crianças)
12.3	Elig		on	on	Chronic and degenerative diseases in bed ridden condition (doentes crónicos e degenerativos na condição de acamados)
12.4	Elig		on	on	Children with acute malnutrition (Crianças com malnutrição aguda)
12.5	Elig		on	on	Temporary incapacity to work (Incapacidade temporária para o trabalho)
12.6	Elig		on	on	means-test of the individual (teste de meios para individuos)
12.7	ArithOp		on	on	Calculate Household Income (Calcular o Rendimento do Agregado Familiar)
12.8	ArithOp		on	on	Calculate per capita hh Income (Calcula o rendimento per capita do AF)
12.9	Elig		on	on	means-test of the household (Teste de meios do Agregado Familiar)
12.10	Elig		on	on	find households containing one or more eligible people (encontrar agregados familiares que contém uma ou mais pessoas eligiveis)
12.11	BenCalc		on	on	assign average value of food boxes by household size (Atribuir valores médios de cestas alimentares por tamanho do AF)
12.11.1	Comp_Cond	1	{j_qualifies_for_bot=1}#1 & {nPersinUnit=1}	{j_qualifies_for_bot=1}#1 & {nPersinUnit=1}	***NB. These are the average values of food boxes by household size, for 2015. (***NB. Estes sao os valores médios de cestas alimentares por tamanho do agregado familiar, para 2015)
12.11.2	#_Level	1	tu_individual_mz	tu_individual_mz	
12.11.3	Comp_perTU	1	630#m	945#m	
12.11.4	Comp_Cond	2	{j_qualifies_for_bot=1}#2 & ({nPersinUnit=2} | {nPersinUnit=3})	{j_qualifies_for_bot=1}#2 & ({nPersinUnit=2} | {nPersinUnit=3})	
12.11.5	#_Level	2	tu_individual_mz	tu_individual_mz	
12.11.6	Comp_perTU	2	1390#m	2085#m	
12.11.7	Comp_Cond	3	{j_qualifies_for_bot=1}#3 & {nPersinUnit>=4}	{j_qualifies_for_bot=1}#3 & {nPersinUnit>=4}	
12.11.8	#_Level	3	tu_individual_mz	tu_individual_mz	
12.11.9	Comp_perTU	3	2385#m	3577.5#m	
12.11.10	Output_Var		bot_s	bot_s	
12.11.11	TAX_UNIT		tu_household_mz	tu_household_mz	
13	bsadi_mz		on	on	BEN: Basic SSP (BEN: Programa do Subsídio Social Básico)

Step 3: Run the MZ_2017 and MZ_2017_Reform systems in Statistics Presenter to identify the impact of this reform on consumption-based poverty in Mozambique.

Answer: Consumption-based poverty would fall from 47.5% to 43.6%

Exercise 7: Change the Simplified Tax policy by changing the tax rate and threshold

Activity:

Change the Simplified Tax [IMPOSTO: Simplificado (sobre vlume de negocios)] by raising the tax rate from 3% to 4% and increasing the threshold from Mt 2.5 Million to Mt 3.0 Million. Introduce the new threshold amount as a constant within the constdef_mz policy.

Question:
What is the impact on revenue from direct taxes? And can you explain why there is also an impact on social security contributions?

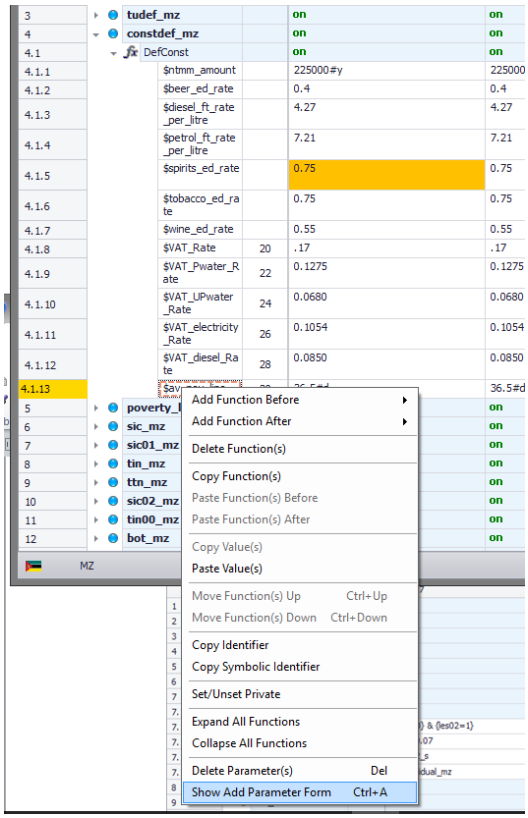
Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

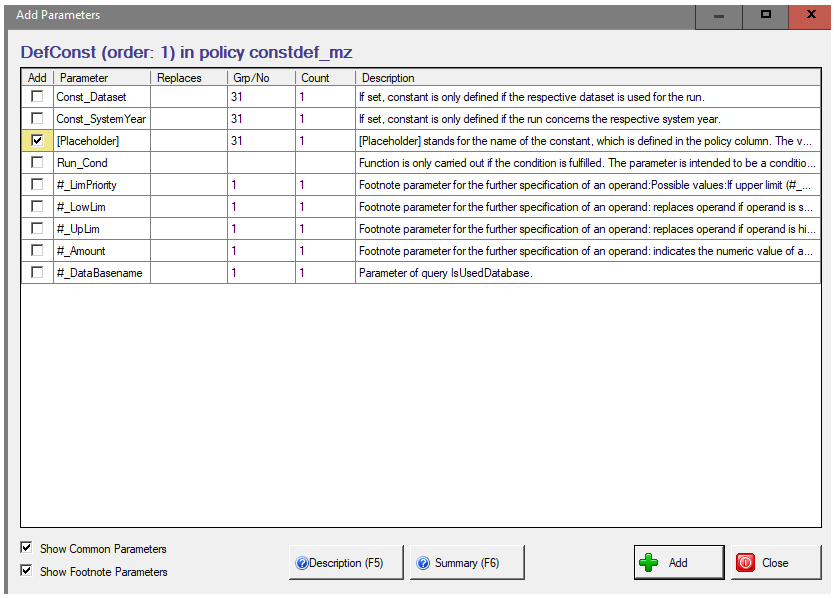
Step 2: Next create a new constant for the new threshold amount of Mt 3.0 Million per year

- How to create a new constant?

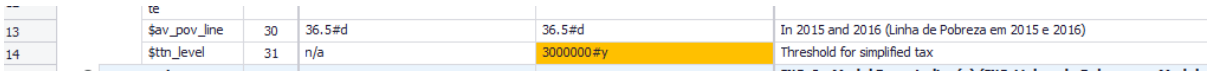
Go to the policy constdef_mz → right click on the last parameter → Show Add Parameter Form



Then select Placeholder → Add → Close



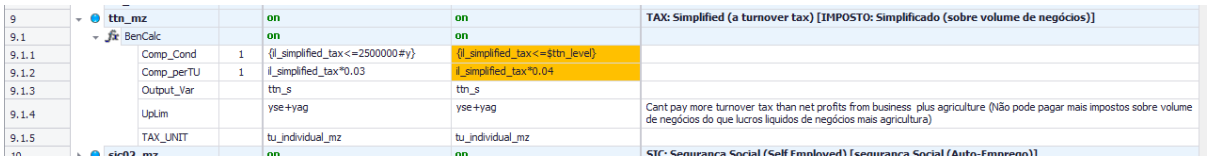
Then name the placeholder $ttn_level, and give it the value 3000000#y (i.e. Mt 3 Million per year) and label the parameter in the comment's column 'Threshold for simplified tax'



Step 3: Next amend the Simplified Tax policy, ttn_mz

- How to change the eligibility rules?

For this example, you need to change the tax rate from 0.03 to 0.04 in the parameter Comp_perTU, and in the Comp_Cond parameter replace the threshold amount with the new constant ($ttn_level) which you created in Step 2.



Step 3: Run the TZ_2017 and TZ_2017_reform systems in Statistics Presenter to identify the impact of the reform on revenue from direct taxes.

Answer: The reform raises an additional amount of revenue from direct taxes of Mt 4,791.21 million.

Note: You will also see that the simulated amount of revenue from social security contributions has fallen by nearly Mt 63 Million. It is important to understand why this has happened: as the income bracket for simplified tax has increased, this has increased the number of contributors to simplified tax. Self-employed contributors to social security only start to contribute once they fall outside the simplified tax bracket, and so the revenue generated for social security from self-employed contributors also falls.

Part C: Introducing New Policies in MOZMOD

Difficulty level: Advanced

Exercise 8: Introduce a universal old age benefit

Activity:

Introduce a universal old age benefit for adults aged 65 and over, payable at 500 Mt per month. Leave all other benefits in place.

Question:
How much would this new benefit cost? What impact would it have on poverty?

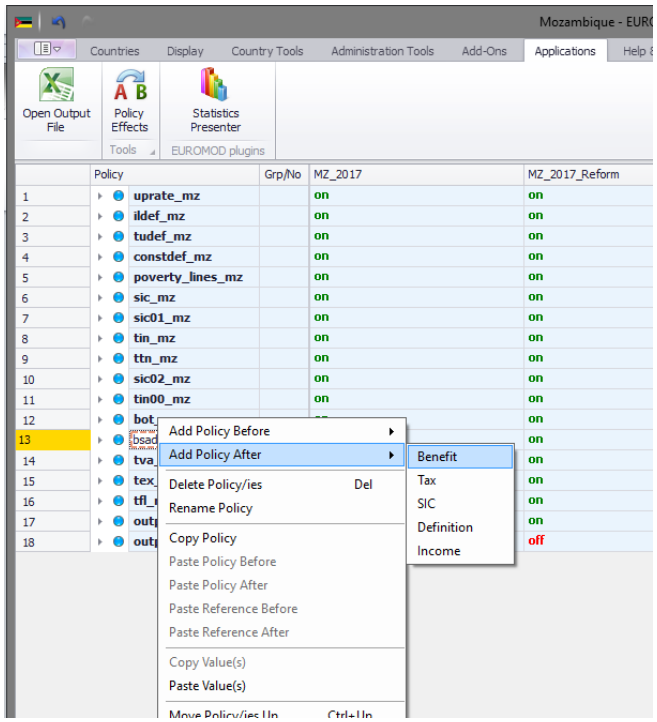
Solution

Step 1: Before amending existing or adding new policies you need to add a new system (See Part 1); then do the amendments in the new system.

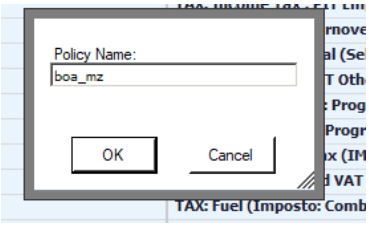
Step 2: Now create a new policy, boa_mz (only in MZ_2017_Reform system)

- How to create a new policy?

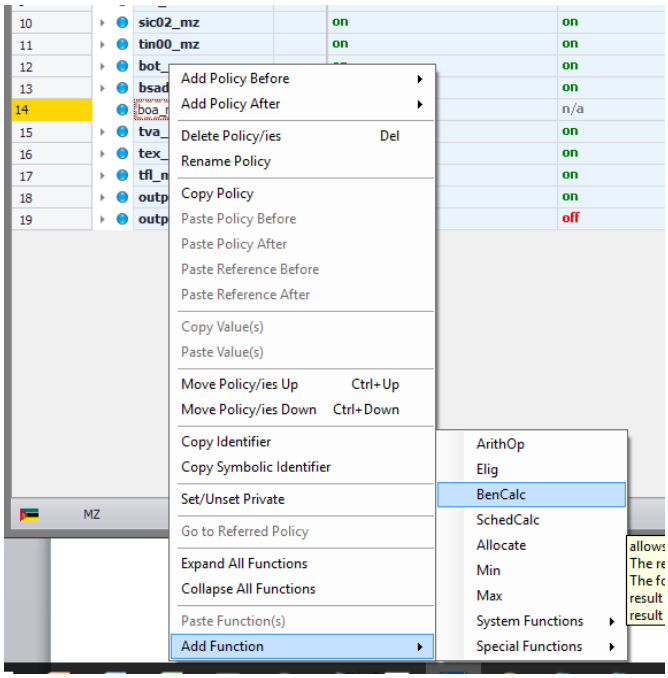
For this example, the new policy can be added after the other benefits. So right click on the last benefit (bsadi_mz) → Add Policy After → Benefit



Then type in the name of the new policy (boa_mz) → OK



You will need to use the BenCalc function for this policy. Right click on boa_mz → Add Function → BenCalc



Then fill in the parameter values for the BenCalc function. Remember to switch the policy and the function ON.

14	boa_mz		n/a	on	BEN: Old Age Benefit
14.1	BenCalc		n/a	on	
14.1.1	Comp_Cond	1	n/a	{dag >= 65}	People aged 65 or above
14.1.2	Comp_perTU	1	n/a	500#m	Mt 500 per month
14.1.3	Output_Var		n/a	boa_s	
14.1.4	TAX_UNIT		n/a	tu_individual_mz	
15	tva_mz		on	on	TAX: Value Added Tax (IMPOSTO: Imposto sobre o Valor Acrescentado)

Step 3: In order for this new policy to be identified by Statistics Presenter, the new benefit needs to be included in the policy ildef_mz in two income lists [Simulated benefits, ils_bensim; and Pension benefits, ils_pen].

Add these in the same way as you would add a new parameter in earlier examples.

DefIl		on	on	Define income list - Simulated benefits (Define lista de rendimento - benefícios simulados)
	name	ils_bensim	ils_bensim	
	bsadi_s	+	+	Basic SSP (PSSB)
	bot_s	+	+	Direct SSP (PASD)
	boa_s	n/a	+	
DefIl		on	on	Define income list - Benefits (Define lista de rendimentos - Benefícios)

2.30	DefIl		on	on	Define income list - all simulated pension benefits (none in MOZMOD - needs to be there for Stats Presenter (Define a lista de rendimento- todos os benefícios simulados relativos a benefícios de pensões- precisa estar lá para o Stats Presenter)
2.30.1		Name	ils_pen	ils_pen	
2.30.2		poact	+	+	BENEFIT/PENSION : Old Age : old age pension (contributory) [BENEFÍCOS/PENSÃO: Pensão para Idosos (Contributiva)]
2.30.3		boa_s	n/a	+	

Step 4: Run the MZ_2017 and MZ_2017_Reform systems in Statistics Presenter to identify how much the reform will cost.

Answer: The reform would cost Mt 5,184.26 Million per year. Overall consumption-based poverty would fall by 1% from 47.5% to 46.5%. However, poverty for households containing older people would fall by 7.9% from 50.1% to 42.2% with a large reduction in the average normalised poverty gap for this group.

Exercise 9: Introduce a universal child benefit (Mt 250)

Activity:

Introduce a universal child benefit for children aged under 18, payable at 250 Mt per month, and produce two reform scenarios: the first scenario should leave all other benefits in place; and the second scenario should leave all other benefits in place apart from DSSP which is removed.

Question:

How much would the universal child benefit cost? After the universal child benefit has been introduced, how much would be saved by removing the other benefits? In terms of poverty reduction, would it be better to retain the current benefits, or to replace them with a child benefit?

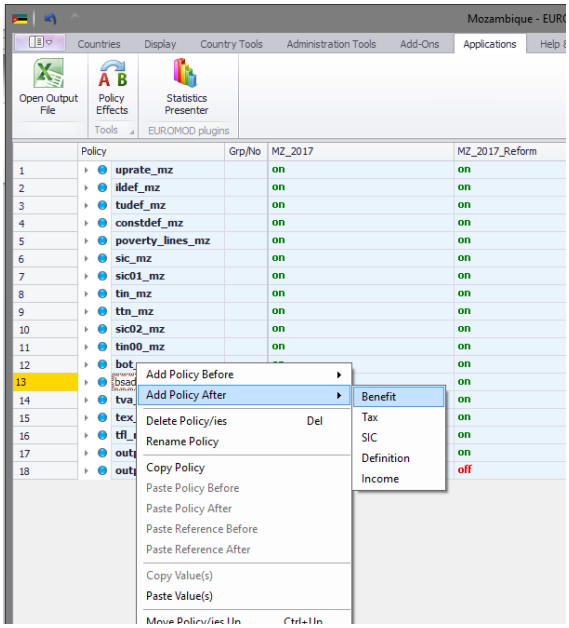
Solution

Step 1: Before amending existing or adding new policies you need to add two new systems (See Part 1) called MZ_2017_Reform1 and MZ_2017_Reform2; then do the amendments in the new systems.

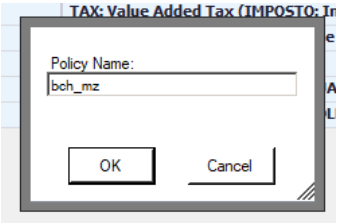
Step 2: Now create a new function, bch_mz (only in the MZ_2017_Reform1 and MZ_2017_Reform2 systems)

- How to create a new function?

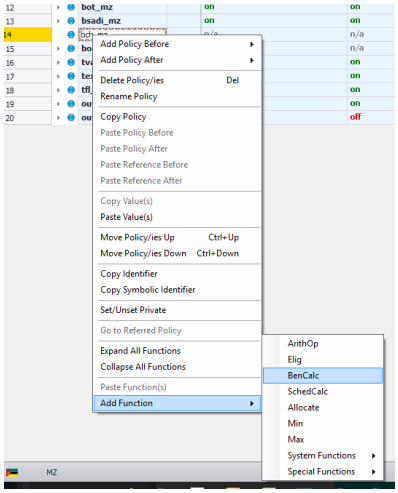
For this example, the new policy can be added after the other benefits. So right click on the last benefit (bsadi_mz) → Add Policy After → Benefit



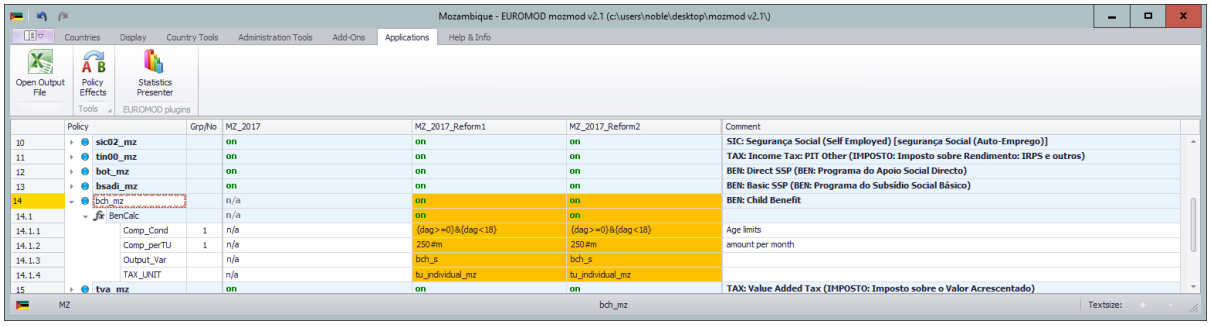
Then type in the name of the new policy (bch_mz) → OK



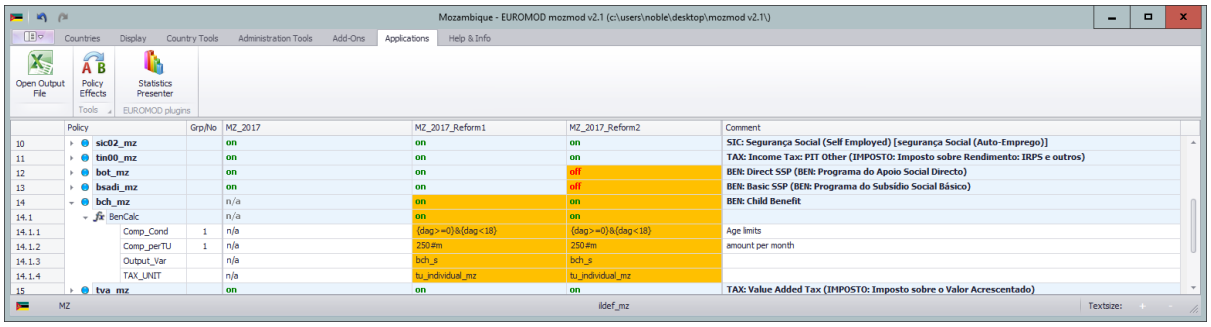
You will need to use the BenCalc function for this policy. Right click on bch_mz → Add Function → BenCalc



Then fill in the parameter values for the BenCalc function, for both reforms. Remember to switch the policy and the function ON.

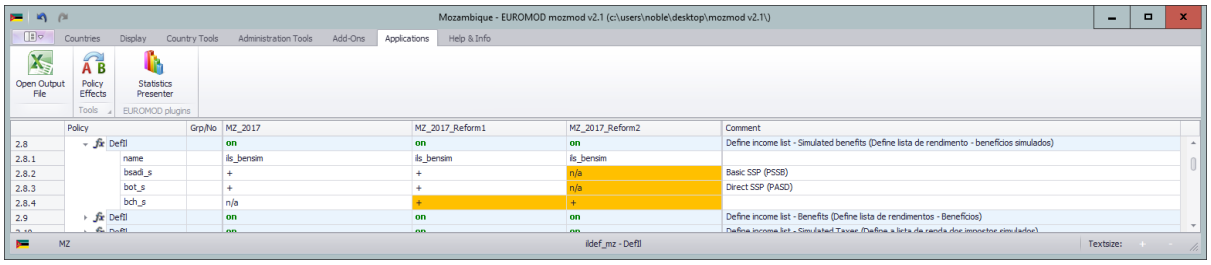


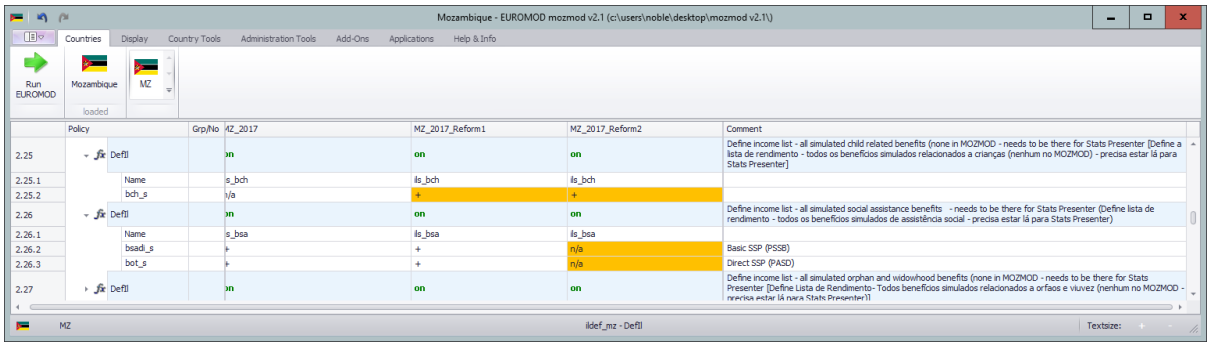
Step 3: Switch off the policies bot_mz and bsadi_mz in MZ_2017_Reform2.



Step 4: In order for this new policy to be identified by Statistics Presenter, the new benefit needs to be included in the policy ildef_mz in two income lists [Simulated benefits, ils_bensim; and Pension benefits, ils_pen]. Remember to do this for both reform scenarios.

Add these in the same way as you would add a new parameter in earlier examples.





N.B. It's good practice in Reform 2 to set the now non simulated bsa_s and bsadi_s to n/a in Ils_bsa (though it will make no difference to the output if you don't. The model will simply warn that the values have been set to zero

Step 5: Run the MZ_2017, MZ_2017_Reform1 and MZ_2017_Reform2 systems in Statistics Presenter to identify how much the reforms will cost.

Answer (250 Mt): The new universal child benefit would cost Mt 45,047.57 Million (comparing MZ_2017 with MZ_2017_Reform1), would reduce overall consumption poverty by 9.5 percentage points, poverty in households with children by 10.1 percentage points and inequality by 0.0379 percentage points.

The removal of the other benefits would save Mt 57,769.39 Million (comparing MZ_2017_Reform1 with MZ_2017_Reform2). However, (comparing MZ_2017 with MZ_2017_Reform2), poverty *increases* by 5.2 percentage points therefore it would be better to retain the existing benefit regime if the child benefit were to replace the existing benefits.

Exercise 10: Introduce a universal child benefit (Mt 500)

Activity:

Introduce a universal child benefit for children aged under 18, payable at 500 Mt per month, and produce two reform scenarios: the first scenario should leave all other benefits in place; and the second scenario should leave all other benefits in place apart from DSSP which is removed.

Questions:

How much would the universal child benefit cost? After the universal child benefit has been introduced, how much would be saved by removing the other benefits? In terms of poverty reduction, would it be better to retain the current benefits, or to replace them with a child benefit?

Solution

Follow the same steps as for the worked example 3.2, but this time assign Mt 500 per child.

Answer (500 Mt): The new universal child benefit would cost Mt 90,095.15 Million (comparing MZ_2017 with MZ_2017_Reform1). The removal of the other benefits would save Mt 57,769.39 Million (comparing MZ_2017_Reform1 with MZ_2017_Reform2). In terms of poverty reduction, it would be more effective to replace the current benefits with a universal child benefit paid at Mt 500 per child, as overall consumption poverty would fall from 47.5% to 42.4% and poverty in households with children would fall from 49.1% to 43.3% (comparing MZ_2017 with MZ_2017_Reform2).