DGE–CRED Practical Session 1: Model comparison

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giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

IWH Leibniz-Institut für Wirtschaftsforschung Halle

On behalf of:
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
of the Federal Republic of Germany

Task 1: Create the ModelSimulationandCalibration3Sectorsand1Region.xlsx File

- Use the CreateRawExcelInputFileRobust.m in the function folder under Miscellaneous to create the Excel file
- Sectors and subsectors are: Agriculture, forestry and fishing; Industry; Services
- Region: Vietnam
- Climate variables regional: surface temperature (tas)
- Climate variables national: sea level (SL)
- Note: For MacOs user change all \ in path to /

Task 1: Solution

CreateRawExcelInputFileRobust.m

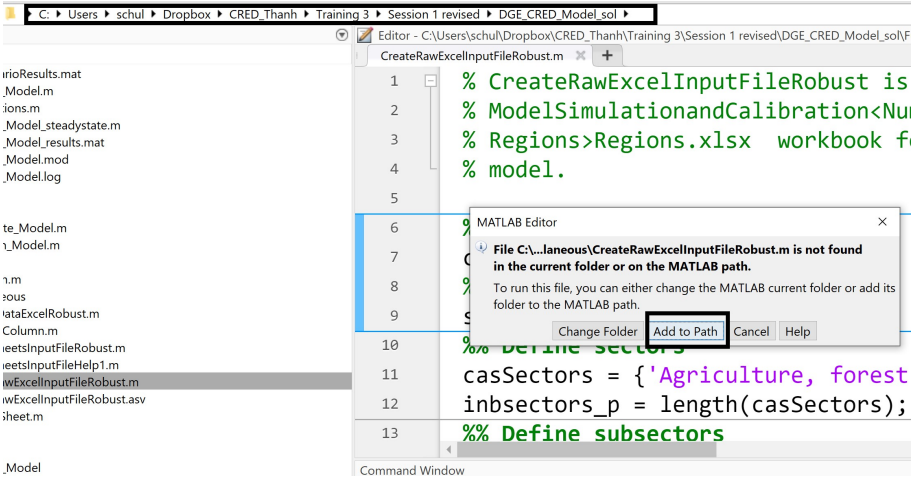
```
% define working directory path
sPathWD = pwd();
%% Define sectors
casSectors = {'Agriculture, forestry and fishing'; 'Industry'; 'Services'};
inbsectors_p = length(casSectors);
%% Define subsectors
casSubSectors = {'Agriculture, forestry and fishing'; 'Industry'; 'Services'};
inbsubsectors_p = length(casSubSectors);
%% Define regions
casRegions = {'Vietnam'};
inbregions_p = length(casRegions);

%% Define regional climate variables
casClimateVarsRegionalName = {'surface temperature (Celsius)'};
casClimateVarsRegional = {'tas'};

%% Define national climate variables
casClimateVarsNationalName = {'Sea level'};
casClimateVarsNational = {'SL'};
casClimateVars = [casClimateVarsRegional casClimateVarsNational];

```

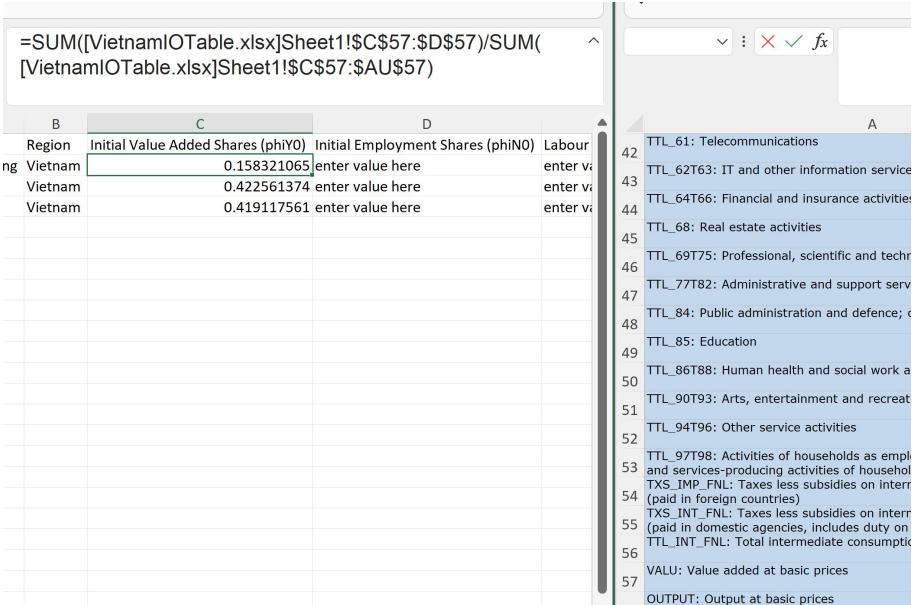
Task 1: Make sure you run the script in the right directory and use addpath



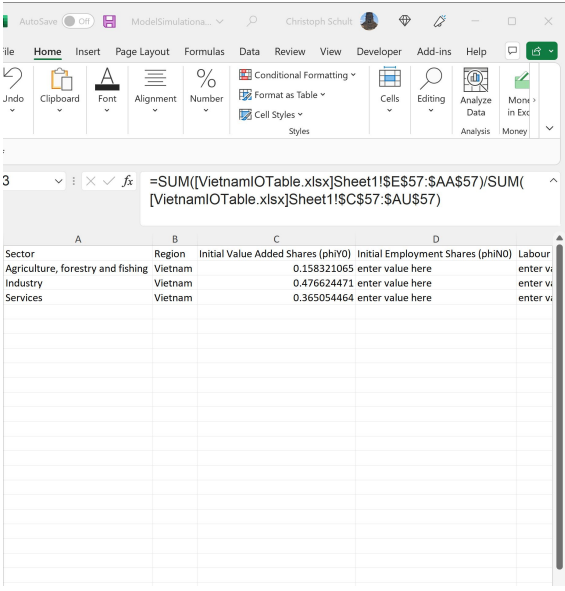
Task 2: Calibrate the value-added shares of the model

- Use the Vietnam IO Table.xlsx to compute value-added shares for different sectors in Vietnam.
- For agriculture, forestry and fishery, use the value added stated in the IO Table row 57 for agriculture, forestry plus fishing and aquaculture.
- For industry, use all sectors from Mining and Quarrying (column E) to Construction (column AA)
- For services, use all sectors after construction (column AB) to the last column with value added (column AU).
- Check whether the sum is equal to one.

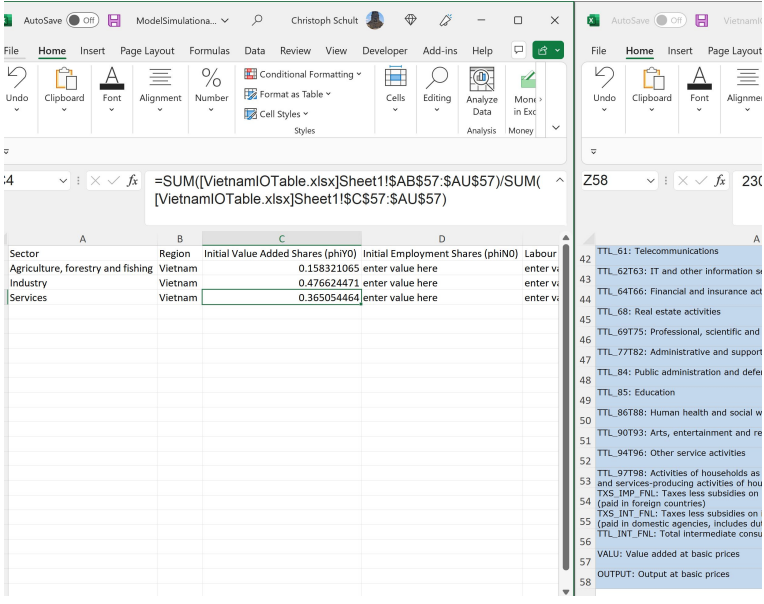
Task 2: Agriculture, forestry and fishery



Task 2: Industry and construction



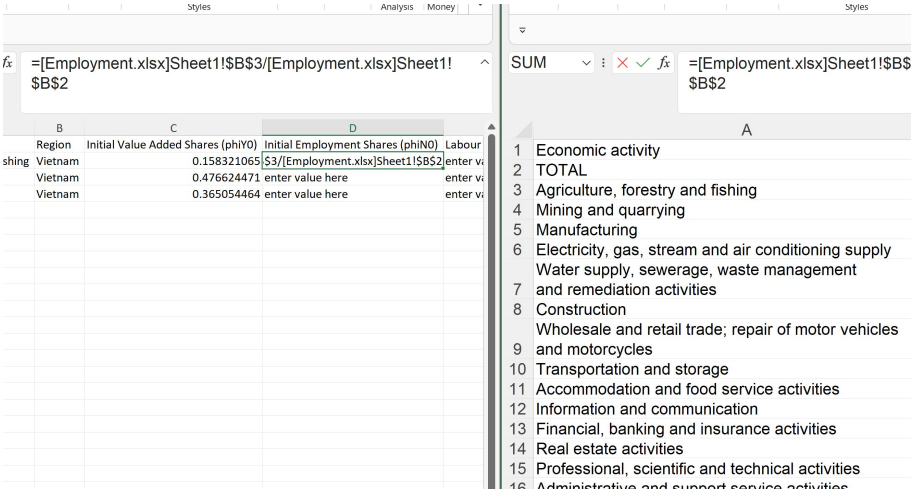
Task 2: Services



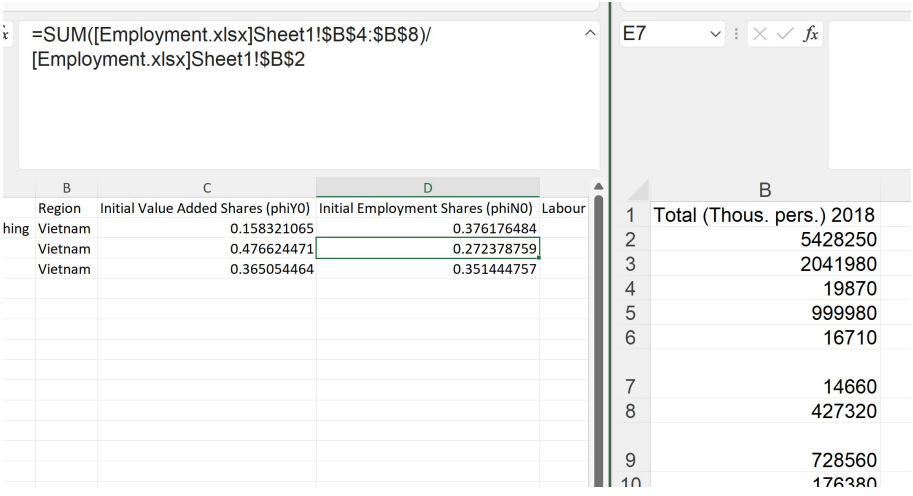
Task 3: Calibrate the employment shares

- Use the Employment.xlsx file to compute employment shares for different sectors in Vietnam.
- For industry, use all sectors from Mining and Quarrying to Construction all divided by total
- For services, use the remaining ones.
- Check whether the sum is one.

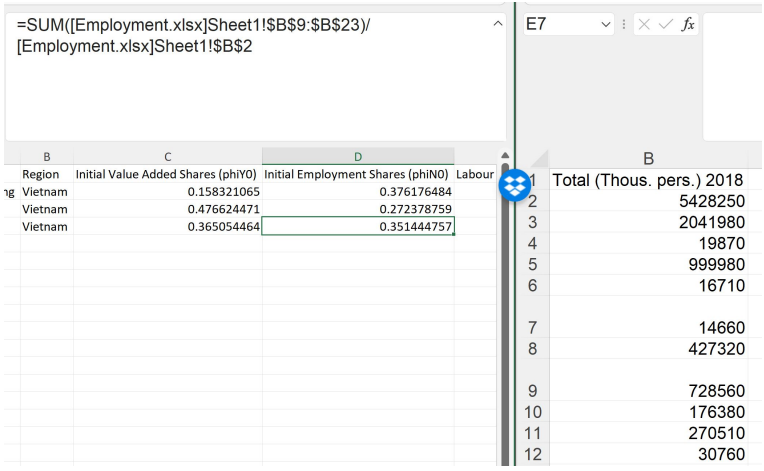
Task 3: Agriculture, forestry and fishery



Task 3: Industry



Task 3: Services



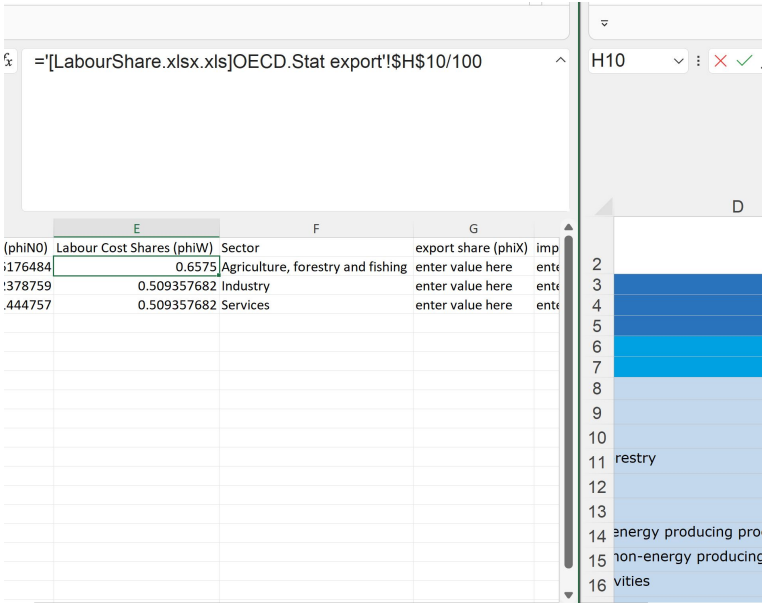
Task 4: Calibrate labour cost shares

- Use the LabourShare.xlsx file to calibrate labour costs relative to value-added.
- For agriculture, forestry and fishery, use row 10.
- For industry use row 74 and row 44 and weight them with the value added share of each sector.

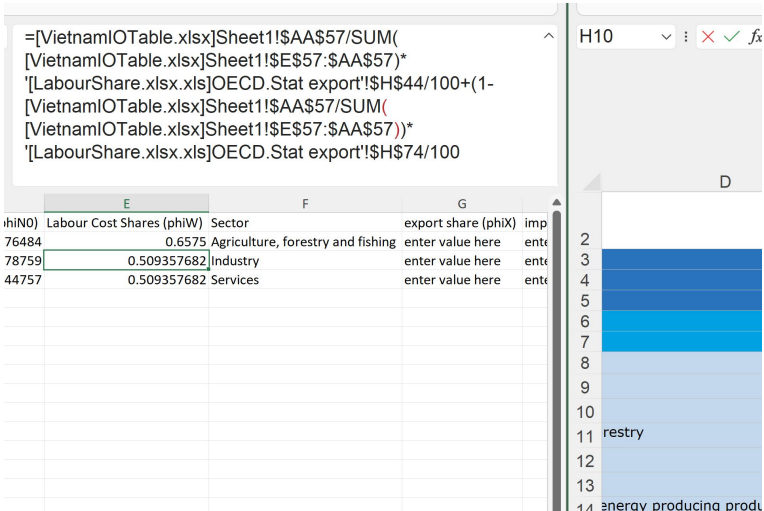
$$\left[\frac{va_{construction}}{va_{industry}+va_{construction}} \times Labor share_{construction}\right] + \left[\left[1 - \frac{va_{construction}}{va_{industry}+va_{construction}}\right] \times Labor share_{construction}\right]$$

- For services, use row 75.
- Divide the values by 100.

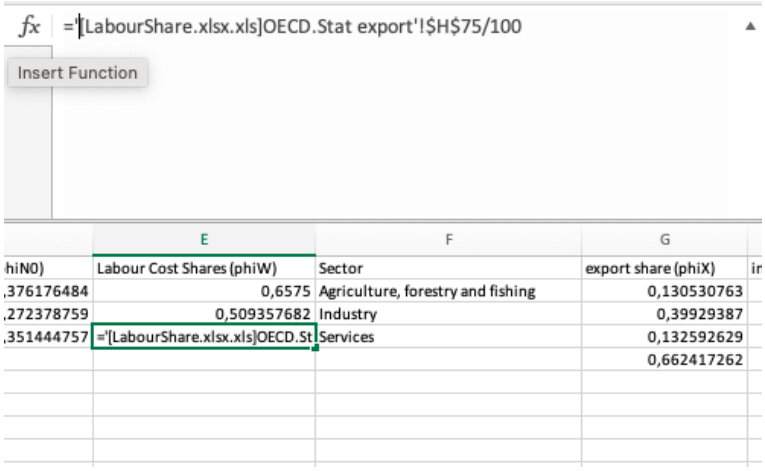
Task 4: Agriculture, forestry and fishery



Task 4: Industry



Task 4: Services

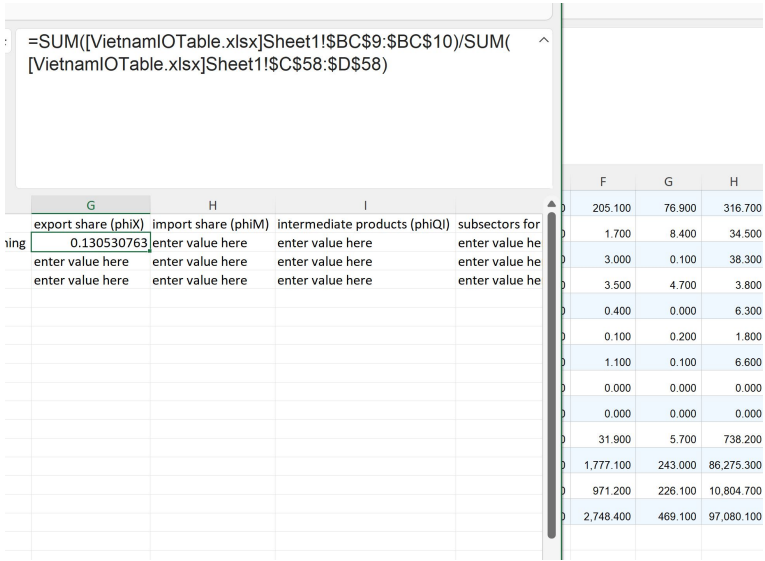


	E	F	G	
hiN0)	Labour Cost Shares (phiW)	Sector	export share (phiX)	ir
,376176484	0,6575	Agriculture, forestry and fishing	0,130530763	
,272378759	0,509357682	Industry	0,39929387	
,351444757	='[LabourShare.xlsx.xls]OECD.St	Services	0,132592629	
			0,662417262	

Task 5: Calibrate export shares

- Use the Vietnam IO Table.xlsx to compute export shares relative to the output of the respective sectors.
- Divide the individual cells in column BC by sum of output in row 58.
- Sectors and subsectors are: Agriculture, forestry and fishing; Industry; Services.

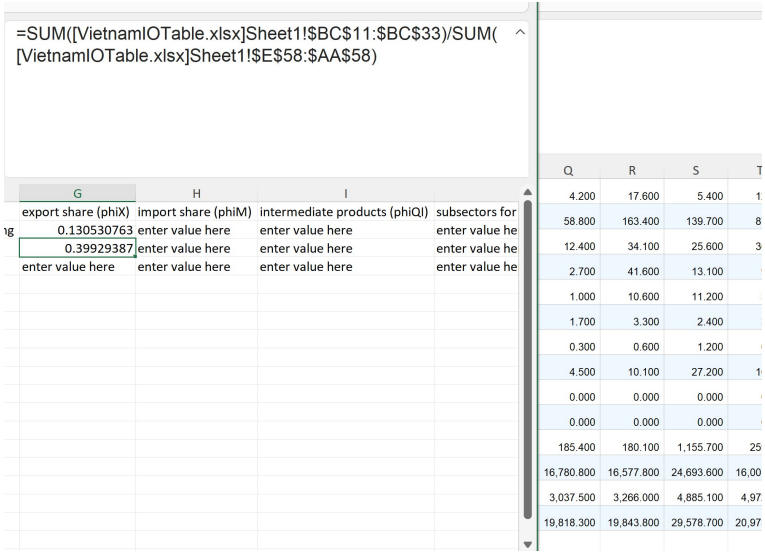
Task 5: Agriculture, forestry and fishery



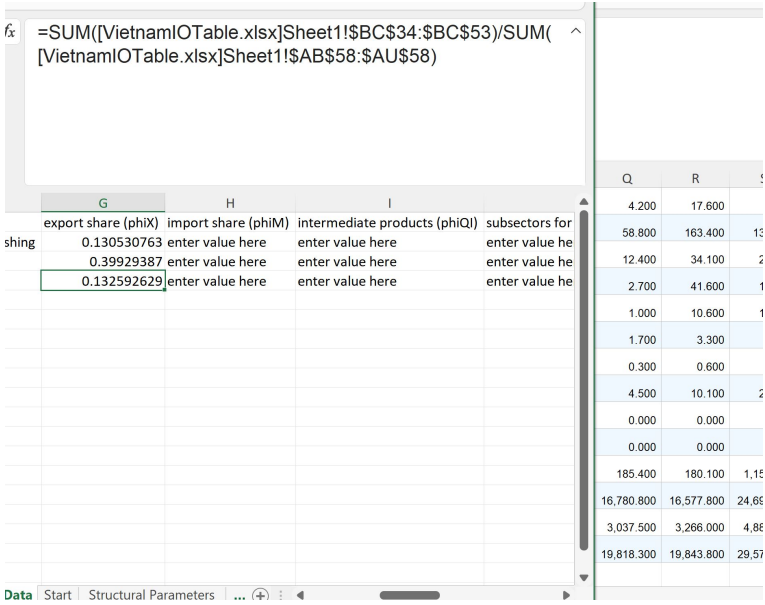
	G	H	I	
	export share (phiX)	import share (phiM)	intermediate products (phiQI)	subsectors for
ning	0.130530763	enter value here	enter value here	enter value he
	enter value here	enter value here	enter value here	enter value he
	enter value here	enter value here	enter value here	enter value he

F	G	H
205.100	76.900	316.700
1.700	8.400	34.500
3.000	0.100	38.300
3.500	4.700	3.800
0.400	0.000	6.300
0.100	0.200	1.800
1.100	0.100	6.600
0.000	0.000	0.000
0.000	0.000	0.000
31.900	5.700	738.200
1,777.100	243.000	86,275.300
971.200	226.100	10,804.700
2,748.400	469.100	97,080.100

Task 5: Industry



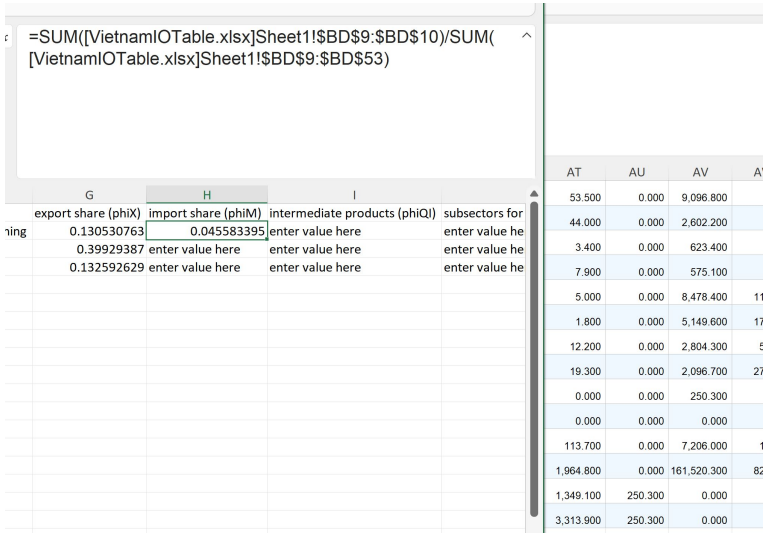
Task 5: Services



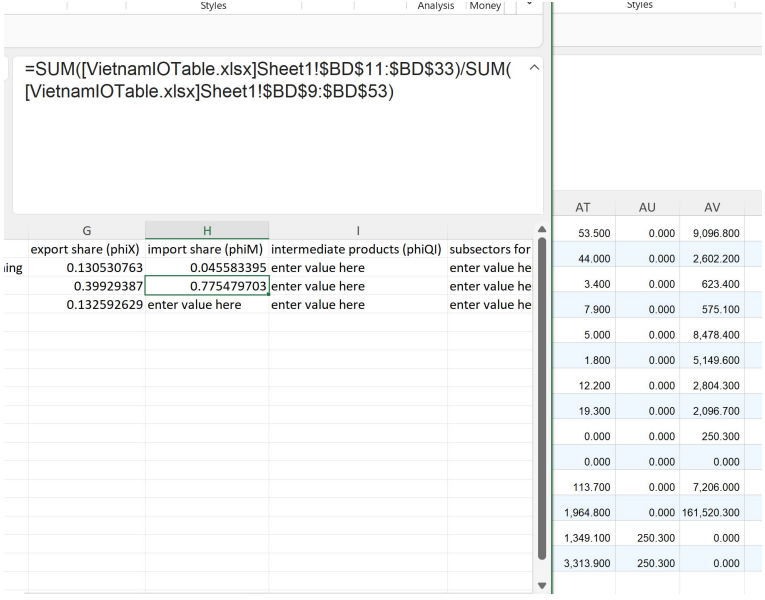
Task 6: Calibrate import shares

- Use the Vietnam IO Table.xlsx to compute import shares relative to total imports for each sector.
- Use the values in column BD.
- Sectors and subsectors are: Agriculture, forestry and fishing; Industry; Services.

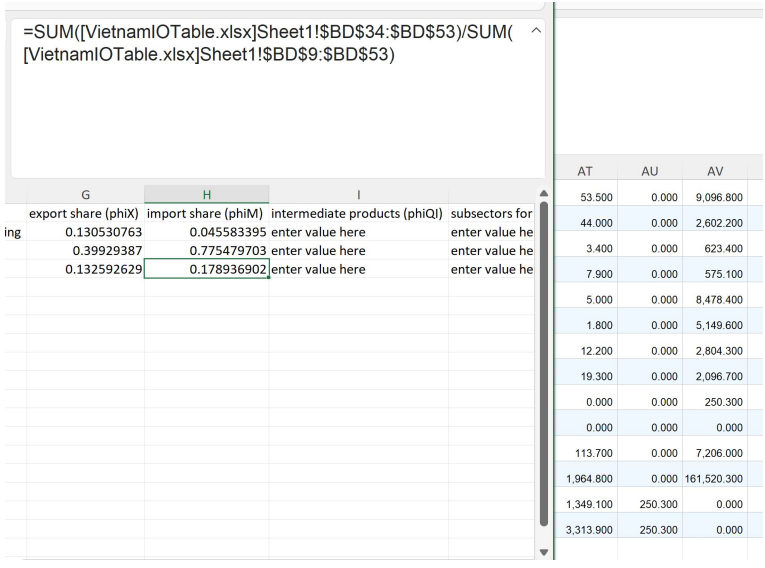
Task 6: Agriculture, forestry and fishery



Task 6: Industry and construction



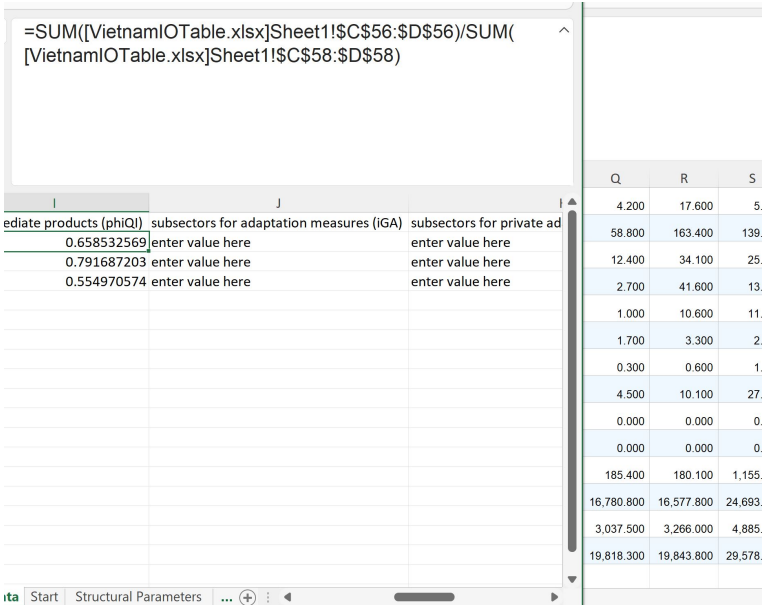
Task 6: Services



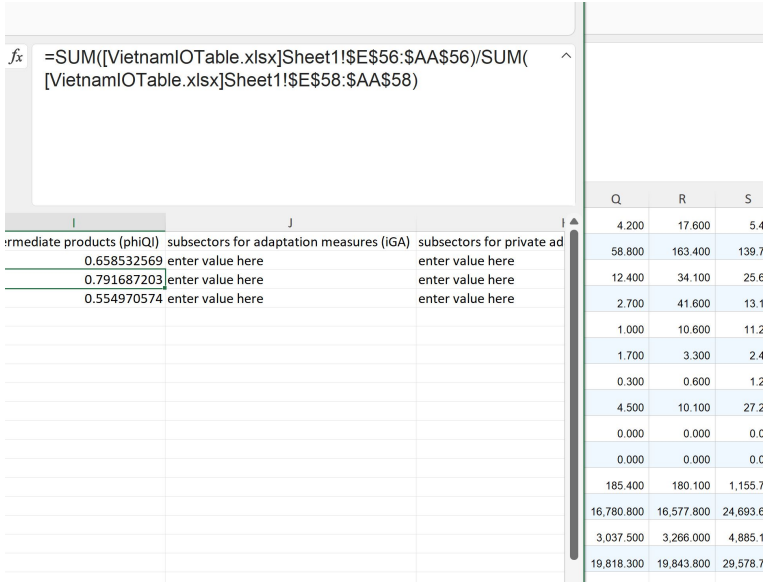
Task 7: Calibrate intermediate input shares.

- Use the Vietnam IO Table.xlsx to compute intermediate input shares relative to the total output of each sector.
- Use the values in rows 56 and 58.
- Sectors and subsectors are: Agriculture, forestry and fishing; Industry; Services.

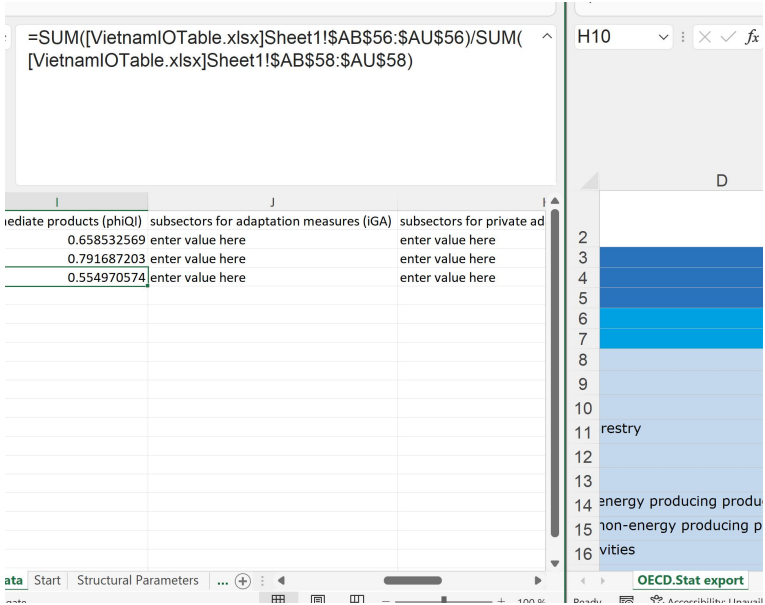
Task 7: Agriculture, forestry and fishery



Task 7: Industry and construction



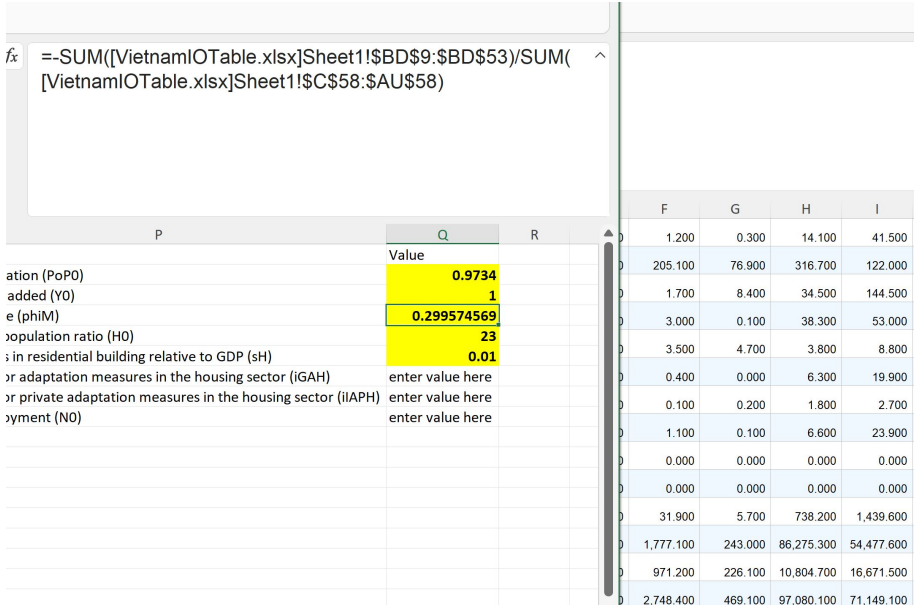
Task 7: Services



Task 8: Calibrate initial population, GDP, import share, housing to population ratio and investments in residential buildings.

- Enter value in Column Q.
- Set initial population to 0.937 which computed from $\frac{97{,}340{,}000}{100{,}000{,}000}$.
- Initial GDP or initial added value (Y0) is 1.
- Import share is the absolute value of the sum of the range BD9 to BD55 in VietnamIOTable.xlsx divided by total sum of output of each sector.
- Housing to population ratio is 23.
- Investments in residential buildings is 0.01.

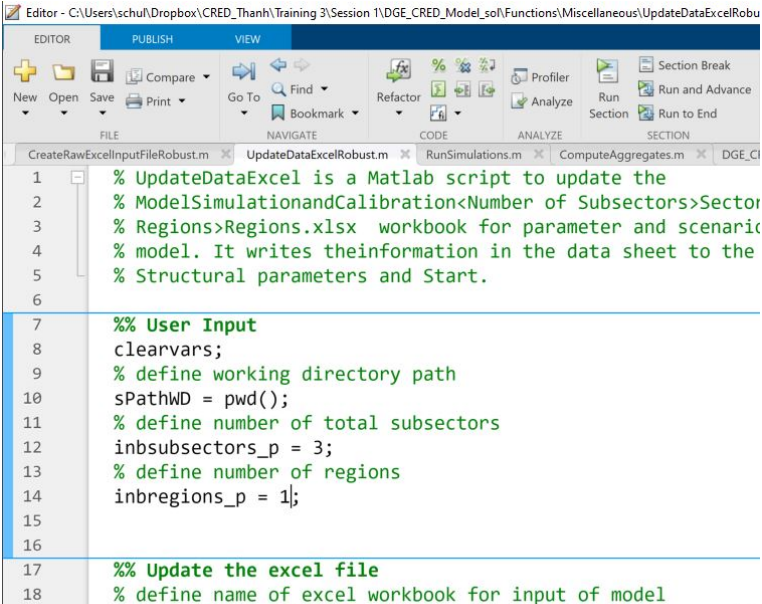
Task 8: Solution



Task 9: Run UpdateDataExcelFileRobust.m

- Modify line with inbsubsectors_p and inbregions_p such that you have 3 sectors and 1 region.
- Pleas make sure that all cells with enter value at the beginning have a numeric value or “ enter value here ” as entry.
- Otherwise MATLAB will return error message “ Error in UpdateDataExcelRobust (line 69) if ~isequal(caValueWrite, {’enter value here’}) && ~ismissing(caValueWrite{:}) ”

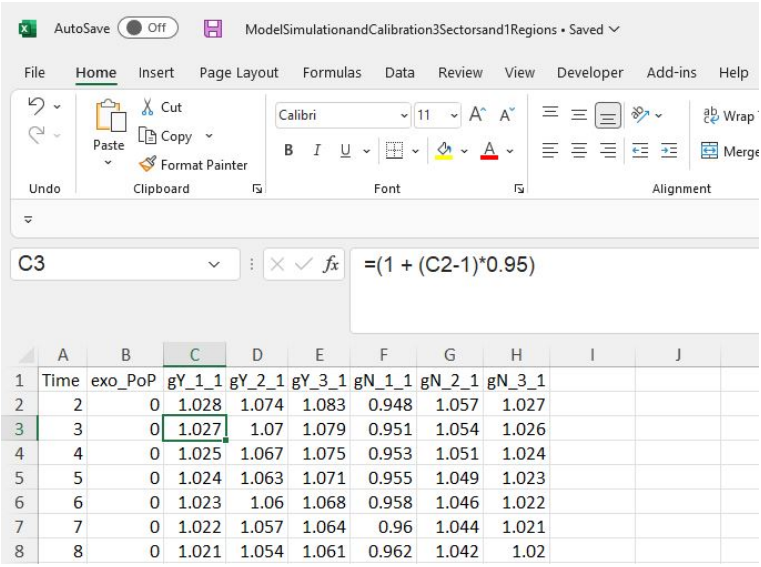
Task 9: Solution



Task 10: Create the Baseline scenario for simulation.

- In the Baseline worksheet, define growth paths (gY_1) for value-added and employment for the different sectors (gN_1).
- For agriculture, forestry and fishery use an annual growth rate of 2.8 percent for value-added and -5.2 percent for employment.
- For industry, use an annual growth rate of 7.4 percent for value-added and 5.7 percent for employment.
- For services use an annual growth rate of 8.3 percent for value-added and 2.7 percent for employment.
- Assume a factor of decay of 0.95 ($x_t = 0.95\, x_{t-1}$)

Task 10: Solution

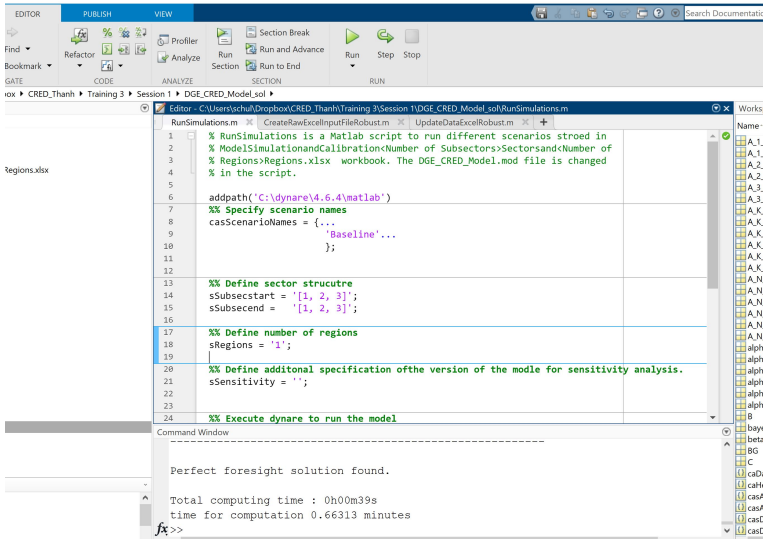


	A	B	C	D	E	F	G	H	I	J
1	Time	exo_PoP	gY_1_1	gY_2_1	gY_3_1	gN_1_1	gN_2_1	gN_3_1		
2	2	0	1.028	1.074	1.083	0.948	1.057	1.027		
3	3	0	1.027	1.07	1.079	0.951	1.054	1.026		
4	4	0	1.025	1.067	1.075	0.953	1.051	1.024		
5	5	0	1.024	1.063	1.071	0.955	1.049	1.023		
6	6	0	1.023	1.06	1.068	0.958	1.046	1.022		
7	7	0	1.022	1.057	1.064	0.96	1.044	1.021		
8	8	0	1.021	1.054	1.061	0.962	1.042	1.02		

Task 11: Run the Baseline scenario.

- Open RunsImulation.m file in Matlab.
- Check whether you add the right dynare version.
- Check whether you have the correct number of sectors and subsectors specified (1,2,3).
- Check whether you have the correct number of regions specified (1).
- Run the script.
- The solution will be save in ResultsScenarios3Sectorsand1Regions.xlsx

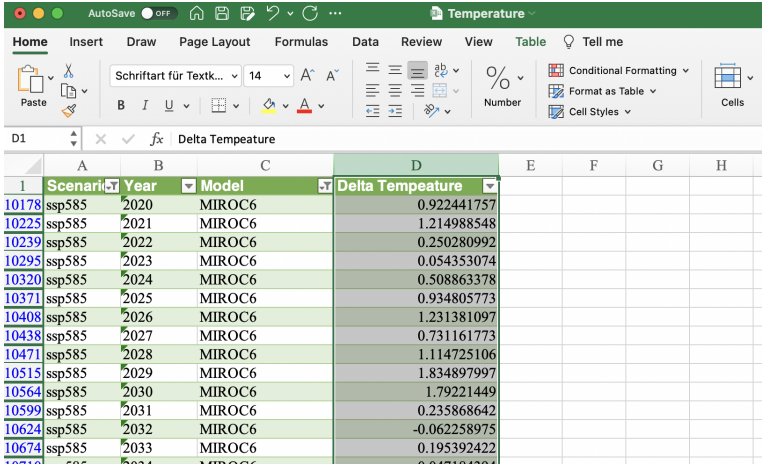
Task 11: Solution



Task 12: Create the SSP 585 scenario.

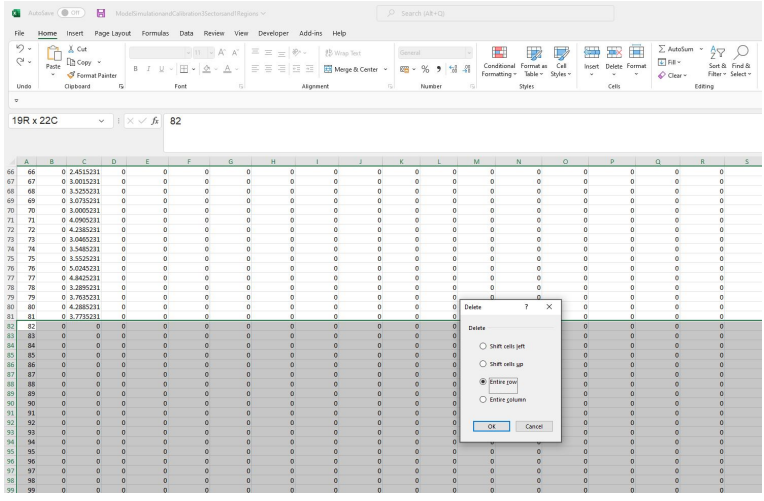
- Copy the Scenario sheet in the ModelSimulationandCalibration3Sectorsand1Region.xlsx file and name the copy SSP585.
- Please open the Temperature.xlsx file.
- Select the model MIROC6, copy the change in temperature and paste values in column C (exo_tas_1) in scenario sheet SSP585
- Delete all empty rows after row 81.
- Assume that a 1℃ leads to a decline in TFP by 3.6 percent, fill in damage on TFP (exo_D_k) all sectors in column K to M
- Run the SSP 585 scenario in RunsImulation.m file in Matlab

Task 12: Select the right scenario and model



	A	B	C	D	E	F	G	H
1	Scenari	Year	Model	Delta Tempeature				
10178	ssp585	2020	MIROC6	0.922441757				
10225	ssp585	2021	MIROC6	1.214988548				
10239	ssp585	2022	MIROC6	0.250280992				
10295	ssp585	2023	MIROC6	0.054353074				
10320	ssp585	2024	MIROC6	0.508863378				
10371	ssp585	2025	MIROC6	0.934805773				
10408	ssp585	2026	MIROC6	1.231381097				
10438	ssp585	2027	MIROC6	0.731161773				
10471	ssp585	2028	MIROC6	1.114725106				
10515	ssp585	2029	MIROC6	1.834897997				
10564	ssp585	2030	MIROC6	1.79221449				
10599	ssp585	2031	MIROC6	0.235868642				
10624	ssp585	2032	MIROC6	-0.062258975				
10674	ssp585	2033	MIROC6	0.195392422				

Task 12: Copy to SSP 585 sheet and delete unnecessary rows

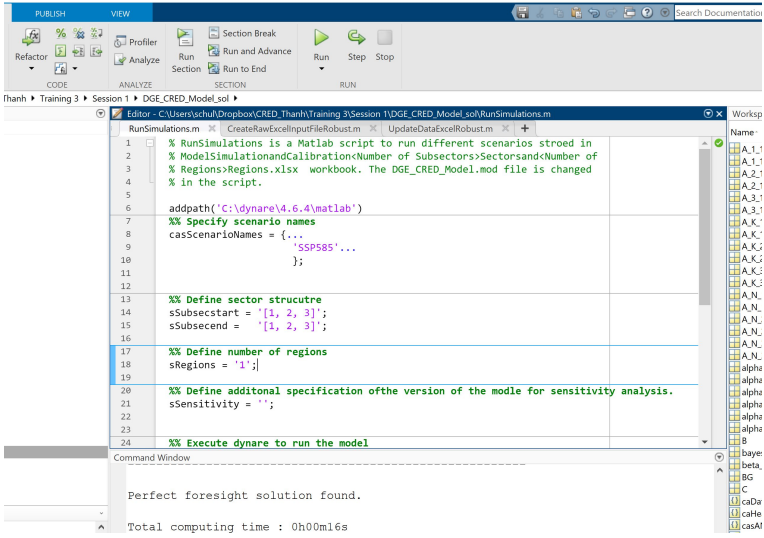


Task 12: Define damages on TFP for all sectors

=0.036*$C2

D	E	F	G	H	I	J	K	L	M
:o_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1	exo_IAP_1_1	exo_IAP_2_1	exo_IAP_3_1	exo_D_1_1	exo_D_2_1	exo_D_3_1 e:
0	0	0	0	0	0	0	0.0332079	0.0332079	0.0332079
0	0	0	0	0	0	0	0.0437396	0.0437396	0.0437396
0	0	0	0	0	0	0	0.0090101	0.0090101	0.0090101
0	0	0	0	0	0	0	0.0019567	0.0019567	0.0019567
0	0	0	0	0	0	0	0.0183191	0.0183191	0.0183191
0	0	0	0	0	0	0	0.033653	0.033653	0.033653
0	0	0	0	0	0	0	0.0443297	0.0443297	0.0443297
0	0	0	0	0	0	0	0.0263218	0.0263218	0.0263218
0	0	0	0	0	0	0	0.0401301	0.0401301	0.0401301
0	0	0	0	0	0	0	0.0660563	0.0660563	0.0660563
0	0	0	0	0	0	0	0.0645197	0.0645197	0.0645197
0	0	0	0	0	0	0	0.0084913	0.0084913	0.0084913

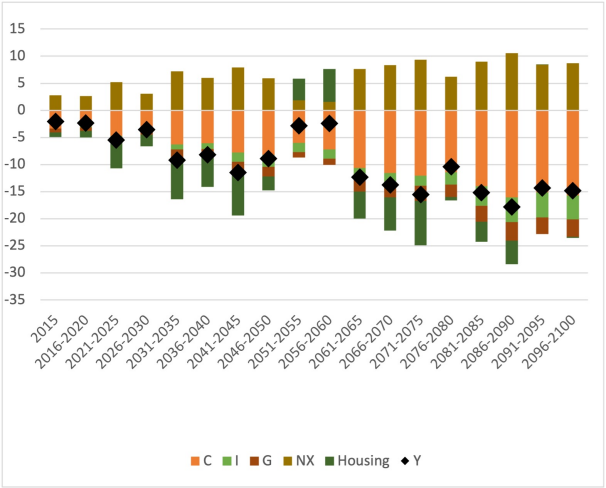
Task 12: Run the SSP 585 scenario



Task 13: Create a Figure to illustrate the impact of climate change on GDP and its components.

- Use the Data/Figures.xlsx file to illustrate the differences between GDP, consumption, investment and net exports in the Baseline and the SSP 585 scenario.
- Make sure the ResultsScenarios3Sectorsand1Regions.xlsx file is open.
- Change the cell value A4 in sheet Var to ResultsScenarios3Sectorsand1Regions.
- Further adapt the names of the variables you want to illustrate for GDP (Y), consumption (C), investment (I), government expenditure (G), Net exports (NX) and Housing Expenditures.
- Interpret the results.

Task 13: Figure for GDP and its components



Task 13: Interpretation

- Impact on GDP mainly follows the damages on TFP.
- GDP components react differently to TFP shock.
- Consumption, investment, government and housing expenditure decline, while net exports increase.

Task 14: Add Damages to labour productivity, crop yields and mortality (I)

- Assume that labour productivity declines with 1 ℃ by 2.7 percent, fill in damage on labor productivity (exo_D_N_k) all sectors in column N to P.
- Crop yields decline by 6.9 percent for 1 ℃, fill in damage on Crop yields (exo_D_k) . **Note** that this damage is added in the same column as damage on TFP in sector 1.
- Assume that the mortality rate in Vietnam is 0.6 percent, and for each 1 ℃ increase, the mortality rate increases by 4 percent.

$$\eta_t^{Pop,SSP} = Pop_t^{SSP} - Pop_t^{Baseline} + Pop_t^{Baseline} - Pop_0$$

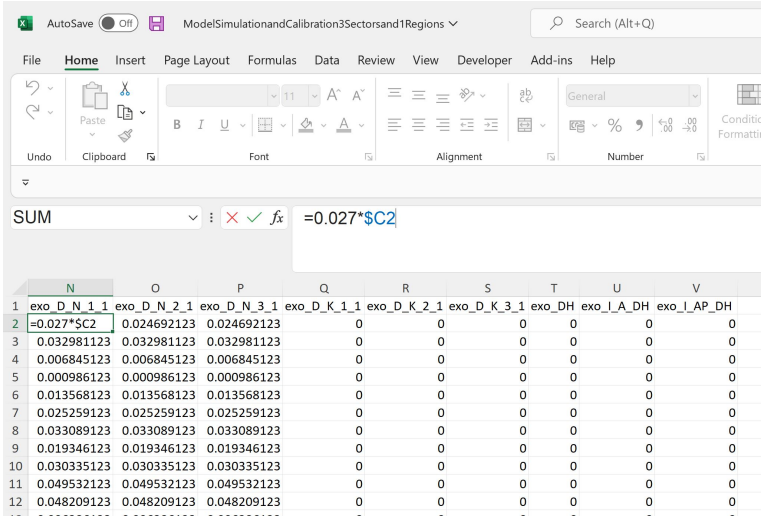
$$\eta_t^{Pop,SSP} = -0.006 \star 0.04 \star Temp_t^{SSP} + Pop_{t-1}^{SSP} - Pop_{t-1}^{Baseline} + \eta^{Pop,Baseline}$$

  - $\eta_t^{Pop,SSP}$ is change in population in period t for the scenario SSP or Baseline scenario.
  - Pop_t^{SSP} is population in period t for scenario SSP or Baseline.
  - $Temp_t^{SSP}$ is temperature in period t for scenario SSP or Baseline.

Task 14: Add Damages to labour productivity, crop yields and mortality (II)

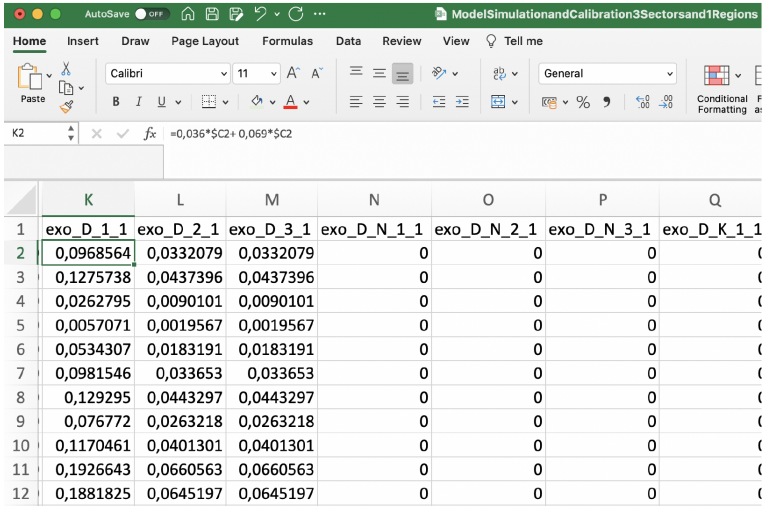
- Include the damages into the SSP 585 scenario and rerun the simulation.
- Take a look at the impact of climate change on GDP and its components and compare to the figure in Task 13.

Task 14: Labour productivity



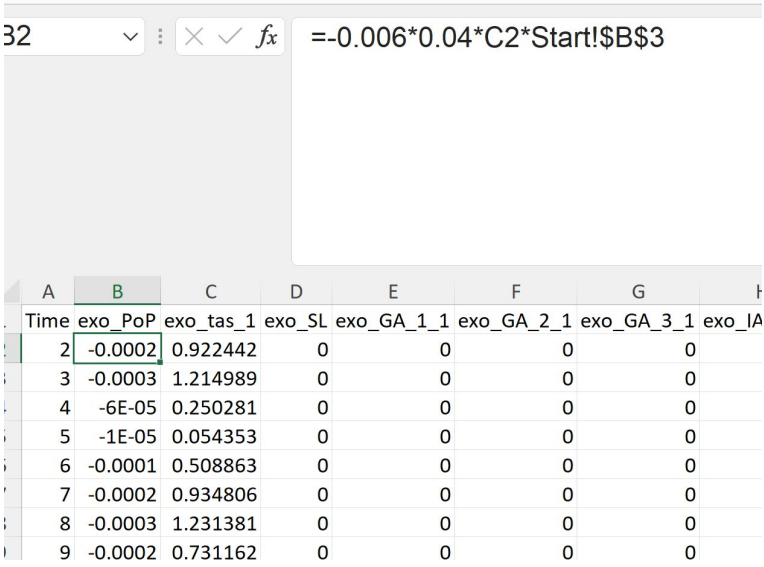
	N	O	P	Q	R	S	T	U	V
1	exo_D_N_1_1	exo_D_N_2_1	exo_D_N_3_1	exo_D_K_1_1	exo_D_K_2_1	exo_D_K_3_1	exo_DH	exo_I_A_DH	exo_I_AP_DH
2	=0.027*$C2	0.024692123	0.024692123	0	0	0	0	0	0
3	0.032981123	0.032981123	0.032981123	0	0	0	0	0	0
4	0.006845123	0.006845123	0.006845123	0	0	0	0	0	0
5	0.000986123	0.000986123	0.000986123	0	0	0	0	0	0
6	0.013568123	0.013568123	0.013568123	0	0	0	0	0	0
7	0.025259123	0.025259123	0.025259123	0	0	0	0	0	0
8	0.033089123	0.033089123	0.033089123	0	0	0	0	0	0
9	0.019346123	0.019346123	0.019346123	0	0	0	0	0	0
10	0.030335123	0.030335123	0.030335123	0	0	0	0	0	0
11	0.049532123	0.049532123	0.049532123	0	0	0	0	0	0
12	0.048209123	0.048209123	0.048209123	0	0	0	0	0	0

Task 14: Crop yields



	K	L	M	N	O	P	Q
1	exo_D_1_1	exo_D_2_1	exo_D_3_1	exo_D_N_1_1	exo_D_N_2_1	exo_D_N_3_1	exo_D_K_1_1
2	0,0968564	0,0332079	0,0332079	0	0	0	0
3	0,1275738	0,0437396	0,0437396	0	0	0	0
4	0,0262795	0,0090101	0,0090101	0	0	0	0
5	0,0057071	0,0019567	0,0019567	0	0	0	0
6	0,0534307	0,0183191	0,0183191	0	0	0	0
7	0,0981546	0,033653	0,033653	0	0	0	0
8	0,129295	0,0443297	0,0443297	0	0	0	0
9	0,076772	0,0263218	0,0263218	0	0	0	0
10	0,1170461	0,0401301	0,0401301	0	0	0	0
11	0,1926643	0,0660563	0,0660563	0	0	0	0
12	0,1881825	0,0645197	0,0645197	0	0	0	0

Task 14: Mortality (I)



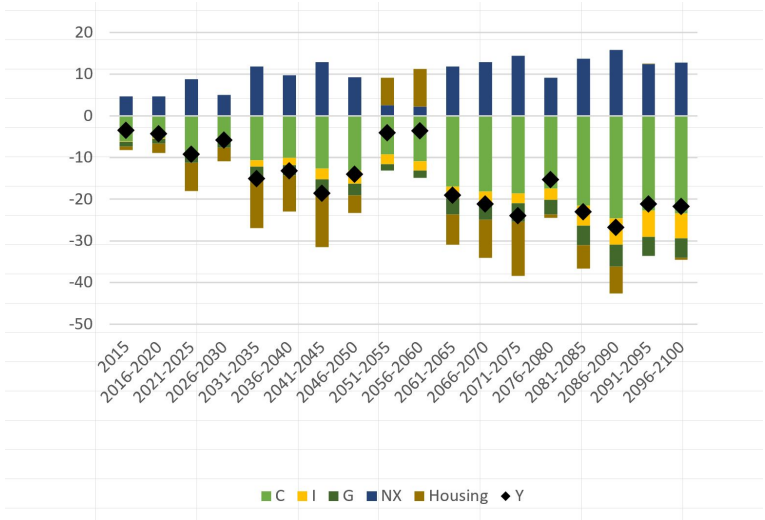
	A	B	C	D	E	F	G	H
	Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1	exo_IA
2	2	-0.0002	0.922442	0	0	0	0	
3	3	-0.0003	1.214989	0	0	0	0	
4	4	-6E-05	0.250281	0	0	0	0	
5	5	-1E-05	0.054353	0	0	0	0	
6	6	-0.0001	0.508863	0	0	0	0	
7	7	-0.0002	0.934806	0	0	0	0	
8	8	-0.0003	1.231381	0	0	0	0	
9	9	-0.0002	0.731162	0	0	0	0	

Task 14: Mortality (II)

B3 | =-0.006*0.04*C3*(Start!$B$3+B2)+(B2-Baseline!B2)

	A	B	C	D	E	
1	Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_
2	2	-0.000215497	0.9224418	0	0	
3	3	-0.000499275	1.2149885	0	0	
4	4	-0.000557715	0.250281	0	0	
5	5	-0.000570405	0.0543531	0	0	
6	6	-0.000689214	0.5088634	0	0	
7	7	-0.000907445	0.9348058	0	0	
8	8	-0.001194847	1.2313811	0	0	
9	9	-0.001365449	0.7311618	0	0	
10	10	-0.001625501	1.1147251	0	0	
11	11	-0.002053447	1.834898	0	0	

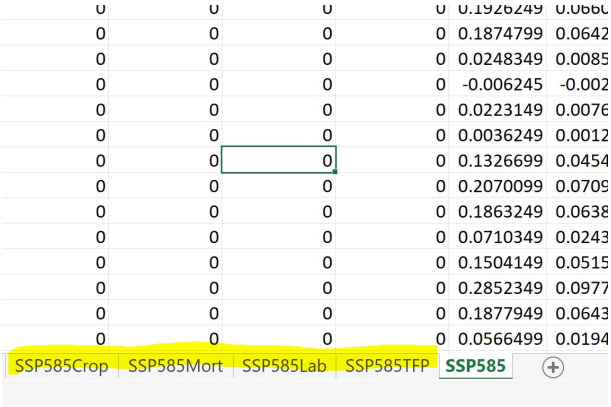
Task 14: GDP Components



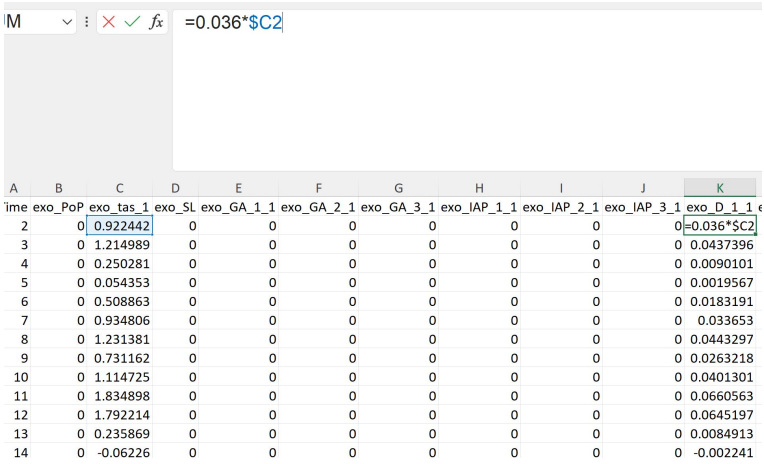
Task 15: Create scenarios to compare the impact of the different damage types.

- Create SSP585TFP, SSP585Lab, SSP585Mort, SSP585Crop.
- SSP585TFP, only TFP shocks are turned on (only fill in damage in column K to M, without damage on crops in column K).
- SSP585Lab only labour productivity shocks are turned on.
- SSP585Mort only mortality shocks are turned on.
- SSP585Crop only crop yield shocks are turned on (only fill in damage in column K, without damage on TFP).
- Run Runsimulation.m with 4 new scenarios.

Task 15: Copy SSP585 sheet and rename the copies to SSP585TFP, SSP585Lab, SSP585Mort, SSP585Crop

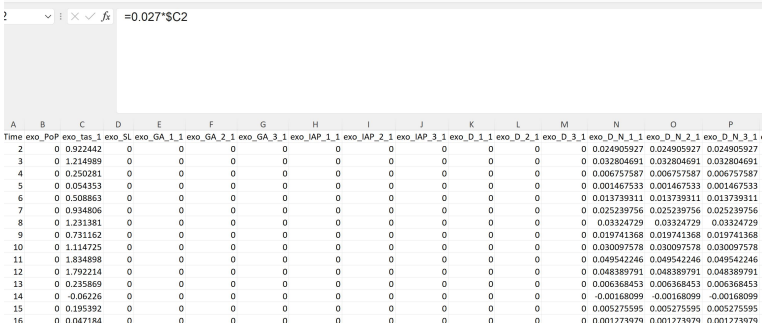


Task 15: SSP585TFP



	A	B	C	D	E	F	G	H	I	J	K
	ime	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1	exo_IAP_1_1	exo_IAP_2_1	exo_IAP_3_1	exo_D_1_1
2		0	0.922442	0	0	0	0	0	0	0	=0.036*$C2
3		0	1.214989	0	0	0	0	0	0	0	0.0437396
4		0	0.250281	0	0	0	0	0	0	0	0.0090101
5		0	0.054353	0	0	0	0	0	0	0	0.0019567
6		0	0.508863	0	0	0	0	0	0	0	0.0183191
7		0	0.934806	0	0	0	0	0	0	0	0.033653
8		0	1.231381	0	0	0	0	0	0	0	0.0443297
9		0	0.731162	0	0	0	0	0	0	0	0.0263218
10		0	1.114725	0	0	0	0	0	0	0	0.0401301
11		0	1.834898	0	0	0	0	0	0	0	0.0660563
12		0	1.792214	0	0	0	0	0	0	0	0.0645197
13		0	0.235869	0	0	0	0	0	0	0	0.0084913
14		0	-0.06226	0	0	0	0	0	0	0	-0.002241

Task 15: SSP585Lab



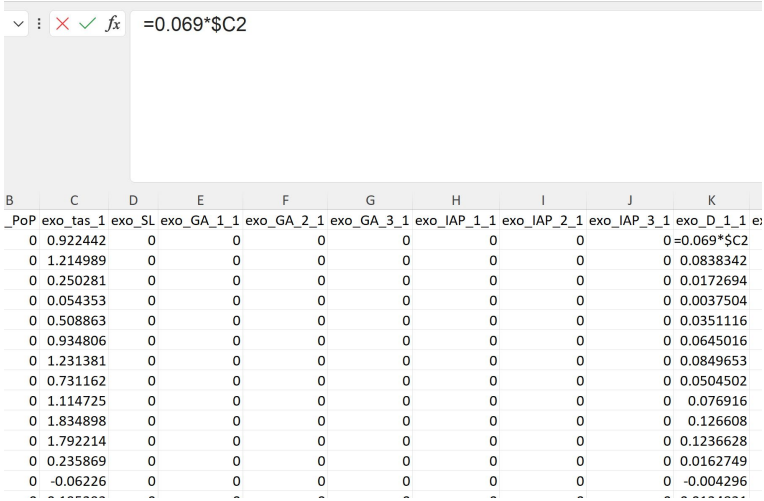
Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1	exo_IAP_1_1	exo_IAP_2_1	exo_IAP_3_1	exo_D_1_1	exo_D_2_1	exo_D_3_1	exo_D_N_1_1	exo_D_N_2_1	exo_D_N_3_1
2	0	0.922442	0	0	0	0	0	0	0	0	0	0	0.024905927	0.024905927	0.024905927
3	0	1.214989	0	0	0	0	0	0	0	0	0	0	0.032804691	0.032804691	0.032804691
4	0	0.250281	0	0	0	0	0	0	0	0	0	0	0.006757587	0.006757587	0.006757587
5	0	0.054353	0	0	0	0	0	0	0	0	0	0	0.001467533	0.001467533	0.001467533
6	0	0.508863	0	0	0	0	0	0	0	0	0	0	0.013739311	0.013739311	0.013739311
7	0	0.934806	0	0	0	0	0	0	0	0	0	0	0.025239756	0.025239756	0.025239756
8	0	1.231381	0	0	0	0	0	0	0	0	0	0	0.03324729	0.03324729	0.03324729
9	0	0.731162	0	0	0	0	0	0	0	0	0	0	0.019741368	0.019741368	0.019741368
10	0	1.114725	0	0	0	0	0	0	0	0	0	0	0.030097578	0.030097578	0.030097578
11	0	1.834898	0	0	0	0	0	0	0	0	0	0	0.049542246	0.049542246	0.049542246
12	0	1.792214	0	0	0	0	0	0	0	0	0	0	0.048389791	0.048389791	0.048389791
13	0	0.235869	0	0	0	0	0	0	0	0	0	0	0.006368453	0.006368453	0.006368453
14	0	-0.06226	0	0	0	0	0	0	0	0	0	0	-0.00168099	-0.00168099	-0.00168099
15	0	0.195392	0	0	0	0	0	0	0	0	0	0	0.005275595	0.005275595	0.005275595
16	0	0.047184	0	0	0	0	0	0	0	0	0	0	0.001273979	0.001273979	0.001273979

Task 15: SSP585Mort

B3 =-0.006*0.04*C3*(Start!$B$3+B2)+(B2-Baseline!B2)

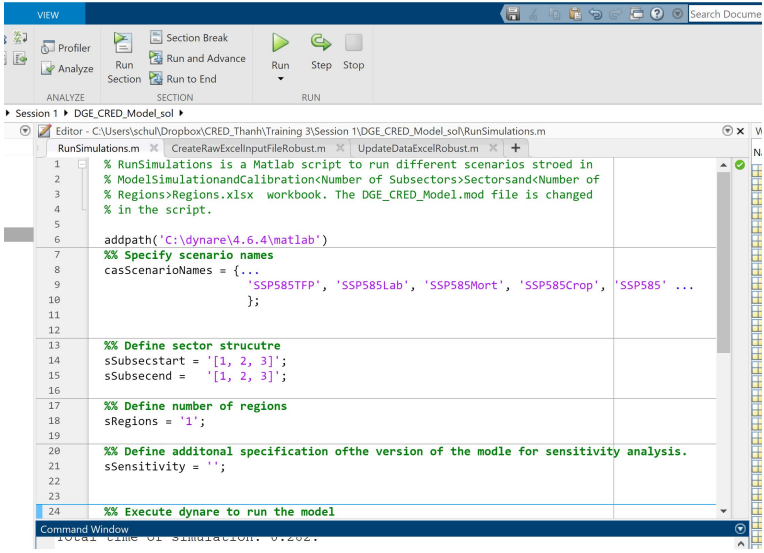
	A	B	C	D	E	F	G
1	Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1
2	2	-0.000215497	0.922442	0	0	0	0
3	3	-0.000499275	1.214989	0	0	0	0
4	4	-0.000557715	0.250281	0	0	0	0
5	5	-0.000570405	0.054353	0	0	0	0
6	6	-0.000689214	0.508863	0	0	0	0
7	7	-0.000907445	0.934806	0	0	0	0
8	8	-0.001194847	1.231381	0	0	0	0
9	9	-0.001365449	0.731162	0	0	0	0
10	10	-0.001625501	1.114725	0	0	0	0
11	11	-0.002053447	1.834898	0	0	0	0

Task 15: SSP585Crop



B	C	D	E	F	G	H	I	J	K
_PoP	exo_tas_1	exo_SL	exo_GA_1_1	exo_GA_2_1	exo_GA_3_1	exo_IAP_1_1	exo_IAP_2_1	exo_IAP_3_1	exo_D_1_1	e
0	0.922442	0	0	0	0	0	0	0	=0.069*$C2	
0	1.214989	0	0	0	0	0	0	0	0.0838342	
0	0.250281	0	0	0	0	0	0	0	0.0172694	
0	0.054353	0	0	0	0	0	0	0	0.0037504	
0	0.508863	0	0	0	0	0	0	0	0.0351116	
0	0.934806	0	0	0	0	0	0	0	0.0645016	
0	1.231381	0	0	0	0	0	0	0	0.0849653	
0	0.731162	0	0	0	0	0	0	0	0.0504502	
0	1.114725	0	0	0	0	0	0	0	0.076916	
0	1.834898	0	0	0	0	0	0	0	0.126608	
0	1.792214	0	0	0	0	0	0	0	0.1236628	
0	0.235869	0	0	0	0	0	0	0	0.0162749	
0	-0.06226	0	0	0	0	0	0	0	-0.004296	

Task 15: RunSimulation.m



Task 16: Create a figure to illustrate which impact channel matters the most for GDP.

- Use the figure for GDP components from Task 14 as a basis.
- Modify the figure, change the GDP components to the damage type such that you can see the GDP effect for SSP585TFP, SSP585Lab, SSP585Mort, SSP585Crop as a stacked bar and all damage types simultaneously as a point.
- What impact channel is the most severe one?

Task 16: Figure (I)

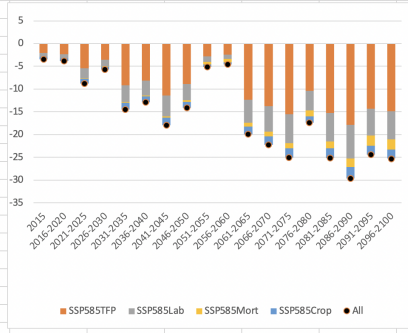
C3 =VLOOKUP($B3,INDIRECT("'["&$A$4&".xlsx]"&C$2&"'!"&"$A$1:$ECW$1002"),MATCH(C$1,INDIRECT("'["&$A$4&".xlsx]"&C$2&"'!"&"$A$1:$ECW$1"),0))

	A	B	C	D	E	F	G	H	I	J	K
1			Y	Y	Y	Y	Y				
2		Year	Baseline	SSP585TFP	SSP585Lab	SSP585Mort	SSP585Crop				
3		2014	1.33311073	1.33311073	1.33311073	1.33311073	1.33311073				
4	ResultsScenari	2015	1.42643211	1.39686721	1.41441429	1.42647923	1.41826985				
5		2020	1.91705978	1.87164622	1.89910535	1.91677984	1.90729424				
6		2025	2.42214306	2.29008559	2.36804132	2.42054754	2.39622117				
7		2030	2.91106617	2.80668585	2.8699604	2.90980017	2.89147157				
8		2035	3.36176581	3.05259786	3.23859447	3.35781058	3.31123191				
9		2040	3.76151688	3.4541758	3.63904439	3.75435228	3.71394979				
10		2045	4.10551057	3.63539989	3.91927396	4.09414338	4.03733591				
11		2050	4.3946007	4.00447317	4.23839668	4.37689506	4.33839655				
12		2055	4.63310616	4.50269983	4.57857692	4.60733055	4.60648812				
13		2060	4.82707004	4.71072132	4.77905276	4.79351289	4.80211729				
14		2065	4.98305764	4.36839224	4.73090265	4.94089049	4.90001314				
15		2070	5.10742037	4.4038472	4.81943412	5.05611648	5.01320395				
16		2075	5.20590438	4.39635387	4.87790719	5.14591678	5.09912424				
17		2080	5.28348859	4.73419	5.05776352	5.21302125	5.20856575				
18		2085	5.34436136	4.53114123	5.00894486	5.26070856	5.23368643				
19		2090	5.39197277	4.42903974	4.99233983	5.29141985	5.258361				
20		2095	5.42912151	4.65159567	5.10697218	5.3096429	5.32256118				
21		2100	5.4580523	4.64755571	5.12144323	5.33495721	5.34703856				

Task 16: Figure (II)

=(D4/$C4-1)*100

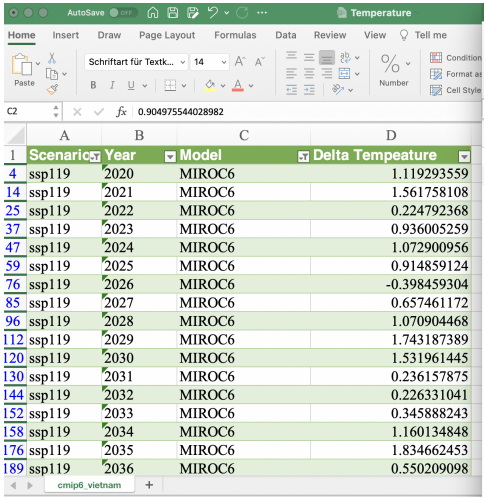
		Y All	Y SSP585TFP	Y SSP585Lab	Y SSP585Mort	Y SSP585Crop
	2015	-3.48406785	-2.07264672	-0.84250922	0.0033034	-0.57221531
2016-2020		-3.82948309	-2.36891739	-0.93656103	-0.01460261	-0.50940206
2021-2025		-8.82179959	-5.45209192	-2.23363089	-0.06587223	-1.07020454
2026-2030		-5.71428778	-3.58563892	-1.41205211	-0.04348935	-0.67310741
2031-2035		-14.4813311	-9.19659406	-3.66388828	-0.11765353	-1.50319527
2036-2040		-12.8816455	-8.17066877	-3.25593359	-0.1904711	-1.26457201
2041-2045		-17.9244239	-11.4507237	-4.53625927	-0.27687634	-1.66056454
2046-2050		-14.1137134	-8.87742837	-3.55445313	-0.40289543	-1.27893644
2051-2055		-5.12246451	-2.81466303	-1.17694778	-0.55633545	-0.57451825
2056-2060		-4.61720844	-2.41033823	-0.99475002	-0.69518657	-0.51693362
2061-2065		-19.9080991	-12.3351052	-5.06024634	-0.84621047	-1.66653713
2066-2070		-22.2632881	-13.7755093	-5.63858523	-1.00449695	-1.84469665
2071-2075		-25.0545408	-15.5506219	-6.30048425	-1.15229935	-2.05113521
2076-2080		-17.4205699	-10.3965131	-4.27227321	-1.33372746	-1.41805609
2081-2085		-25.1286223	-15.2164138	-6.27608203	-1.56525346	-2.07087303
2086-2090		-29.6131071	-17.8586405	-7.41162767	-1.86486326	-2.47797573
2091-2095		-24.4185751	-14.3213932	-5.93372857	-2.20069881	-1.96275449
2096-2100		-25.3059956	-14.8495569	-6.16720121	-2.2552933	-2.0339442



Task 17: Create scenarios SSP119 and 245 for the MIROC6 model and compare GDP effects with SSP585.

- Copy the sheet SSP 585 two times.
- Rename the copied sheets into SSP119 and SSP245.
- Copy the change in temperature from Temperature.xlsx into the respective sheets.
- Run simulation on SSP219 and SSP 245.
- Plot the range of results for GDP effects compared to SSP585 for the different climate models (SSP119 and SSP245).

Task 17: Create SSP119



Temperature

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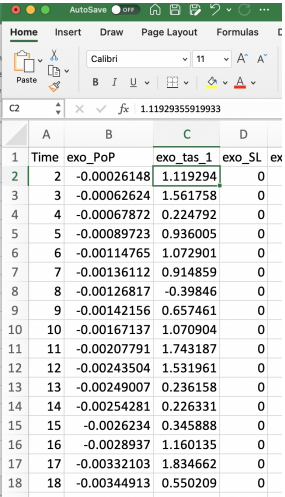
C2 0.904975544028982

	A	B	C	D
1	Scenario	Year	Model	Delta Tempeature
4	ssp119	2020	MIROC6	1.119293559
14	ssp119	2021	MIROC6	1.561758108
25	ssp119	2022	MIROC6	0.224792368
37	ssp119	2023	MIROC6	0.936005259
47	ssp119	2024	MIROC6	1.072900956
59	ssp119	2025	MIROC6	0.914859124
76	ssp119	2026	MIROC6	-0.398459304
85	ssp119	2027	MIROC6	0.657461172
96	ssp119	2028	MIROC6	1.070904468
112	ssp119	2029	MIROC6	1.743187389
120	ssp119	2030	MIROC6	1.531961445
130	ssp119	2031	MIROC6	0.236157875
144	ssp119	2032	MIROC6	0.226331041
152	ssp119	2033	MIROC6	0.345888243
158	ssp119	2034	MIROC6	1.160134848
176	ssp119	2035	MIROC6	1.834662453
189	ssp119	2036	MIROC6	0.550209098

cmip6_vietnam +



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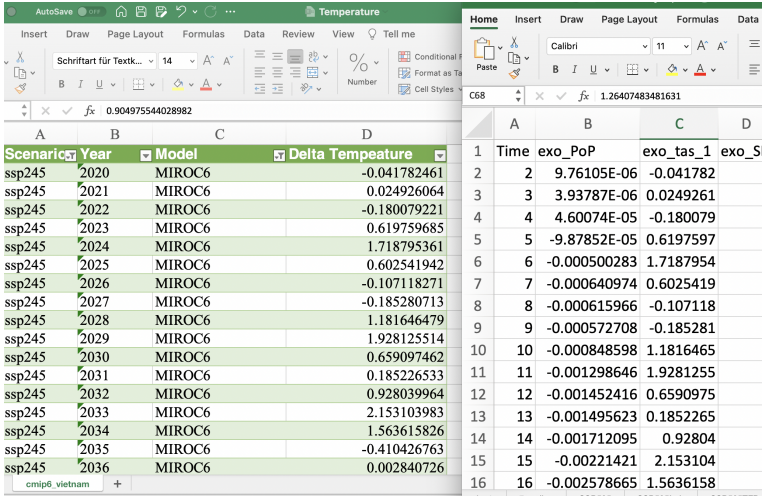
C2 1.11929355919933

	A	B	C	D	
1	Time	exo_PoP	exo_tas_1	exo_SL	ex
2	2	-0.00026148	1.119294	0	
3	3	-0.00062624	1.561758	0	
4	4	-0.00067872	0.224792	0	
5	5	-0.00089723	0.936005	0	
6	6	-0.00114765	1.072901	0	
7	7	-0.00136112	0.914859	0	
8	8	-0.00126817	-0.39846	0	
9	9	-0.00142156	0.657461	0	
10	10	-0.00167137	1.070904	0	
11	11	-0.00207791	1.743187	0	
12	12	-0.00243504	1.531961	0	
13	13	-0.00249007	0.236158	0	
14	14	-0.00254281	0.226331	0	
15	15	-0.0026234	0.345888	0	
16	16	-0.0028937	1.160135	0	
17	17	-0.00332103	1.834662	0	
18	18	-0.00344913	0.550209	0	

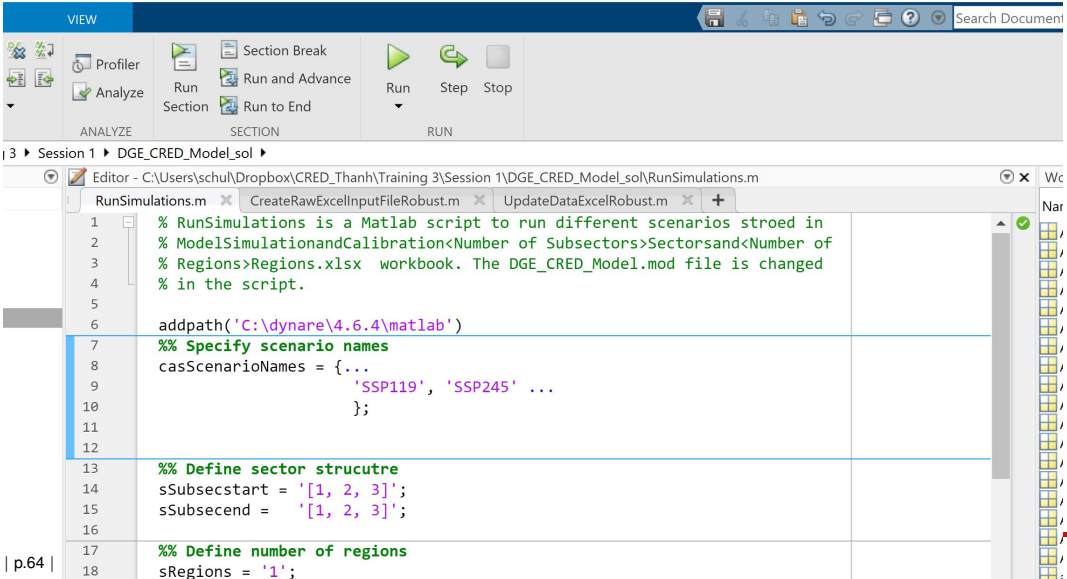
Task 17: Create SSP245



Scenario	Year	Model	Delta Tempeature
ssp245	2020	MIROC6	-0.041782461
ssp245	2021	MIROC6	0.024926064
ssp245	2022	MIROC6	-0.180079221
ssp245	2023	MIROC6	0.619759685
ssp245	2024	MIROC6	1.718795361
ssp245	2025	MIROC6	0.602541942
ssp245	2026	MIROC6	-0.107118271
ssp245	2027	MIROC6	-0.185280713
ssp245	2028	MIROC6	1.181646479
ssp245	2029	MIROC6	1.928125514
ssp245	2030	MIROC6	0.659097462
ssp245	2031	MIROC6	0.185226533
ssp245	2032	MIROC6	0.928039964
ssp245	2033	MIROC6	2.153103983
ssp245	2034	MIROC6	1.563615826
ssp245	2035	MIROC6	-0.410426763
ssp245	2036	MIROC6	0.002840726

Time	exo_PoP	exo_tas_1	exo_S
2	9.76105E-06	-0.041782	
3	3.93787E-06	0.0249261	
4	4.60074E-05	-0.180079	
5	-9.87852E-05	0.6197597	
6	-0.000500283	1.7187954	
7	-0.000640974	0.6025419	
8	-0.000615966	-0.107118	
9	-0.000572708	-0.185281	
10	-0.000848598	1.1816465	
11	-0.001298646	1.9281255	
12	-0.001452416	0.6590975	
13	-0.001495623	0.1852265	
14	-0.001712095	0.92804	
15	-0.00221421	2.153104	
16	-0.002578665	1.5636158	

Task 17: RunSimulation.m



Task 17: Figure (I)

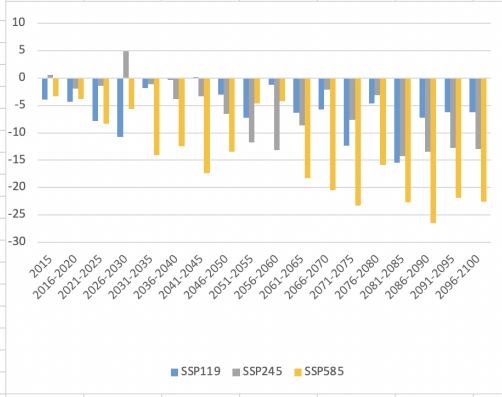
A4 | 'ResultsScenarios3Sectorsand1Regions

	A	B	C	D	E	F	G	H	I	J
1			Y	Y	Y	Y				
2		Year	Baseline	SSP119	SSP245	SSP585				
3		2014	1.333111	1.3331	1.333111	1.333111				
4	ResultsScenarios3Sector	2015	1.426432	1.3704	1.434997	1.378479				
5		2020	1.91706	1.834	1.880861	1.844047				
6		2025	2.422143	2.2332	2.386697	2.22079				
7		2030	2.911066	2.5977	3.052653	2.746301				
8		2035	3.361766	3.3018	3.322242	2.890121				
9		2040	3.761517	3.7503	3.616023	3.293625				
10		2045	4.105511	4.1135	3.970424	3.392921				
11		2050	4.394601	4.26	4.107391	3.803226				
12		2055	4.633106	4.2969	4.088674	4.41722				
13		2060	4.82707	4.7656	4.190228	4.621906				
14		2065	4.983058	4.6662	4.550375	4.072227				
15		2070	5.10742	4.8134	4.999578	4.061911				
16		2075	5.205904	4.5643	4.80812	3.995521				
17		2080	5.283489	5.0393	5.119178	4.446861				
18		2085	5.344361	4.5163	4.580129	4.131356				
19		2090	5.391973	5.0023	4.667127	3.963131				
20		2095	5.429122	5.0891	4.735392	4.244005				
21		2100	5.458052	5.1179	4.753114	4.228012				

Task 17: Figure (II)

=(D4/$C4-1)*100

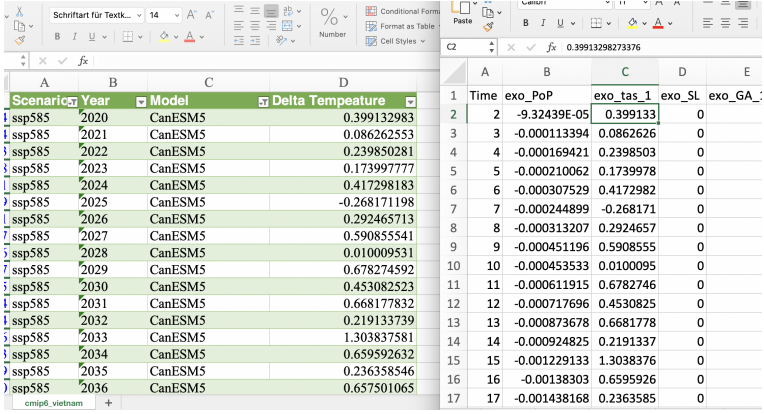
	B	C	D	E	F
	2100	5.458052	5.1179	4.753114	4.228012
			SSP119	SSP245	SSP585
	2015		-3.929	0.600443	-3.36173
	2016-2020		-4.332	-1.88824	-3.80857
	2021-2025		-7.799	-1.46343	-8.31299
	2026-2030		-10.76	4.863758	-5.65996
	2031-2035		-1.784	-1.17569	-14.0297
	2036-2040		-0.297	-3.86796	-12.4389
	2041-2045		0.1951	-3.29036	-17.3569
	2046-2050		-3.063	-6.53551	-13.4568
	2051-2055		-7.256	-11.7509	-4.65964
	2056-2060		-1.273	-13.1931	-4.25029
	2061-2065		-6.359	-8.68307	-18.2785
	2066-2070		-5.757	-2.11148	-20.4704
	2071-2075		-12.33	-7.64102	-23.2502
	2076-2080		-4.622	-3.10989	-15.8348
	2081-2085		-15.49	-14.2998	-22.6969
	2086-2090		-7.226	-13.4431	-26.4994
	2091-2095		-6.264	-12.7779	-21.8289
	2096-2100		-6.231	-12.9156	-22.5363



Task 18: Sensitivity Analysis SSP 585 effect for three different climate models.

- Create the following scenarios: SSP585FGOALSg3, SSP585CanESM5, SSP585MIROCES2L
- Each scenario is the SSP 585 scenario from a different climate model (FGOALS-g3, CanESM5, MIROC-ES2L).
- Note: Delete special characters from the scenario names when type in Runsimulation.m.
- Plot the range of results for GDP effects compared to SSP585 for three different climate models.

Task 18: Create SSP585CanESM5



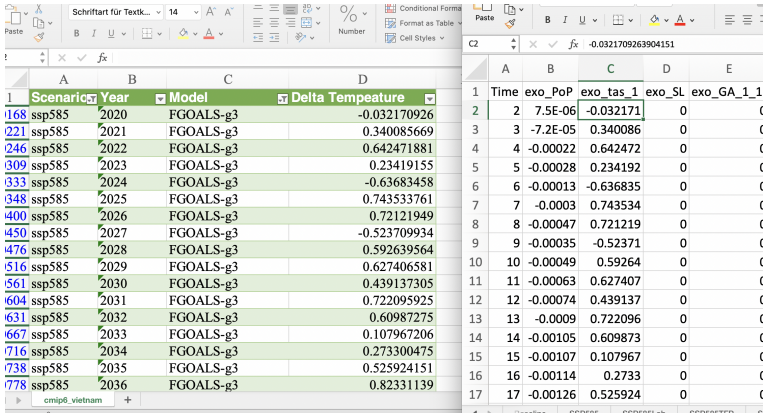
Scenario	Year	Model	Delta Tempeature
ssp585	2020	CanESM5	0.399132983
ssp585	2021	CanESM5	0.086262553
ssp585	2022	CanESM5	0.239850281
ssp585	2023	CanESM5	0.173997777
ssp585	2024	CanESM5	0.417298183
ssp585	2025	CanESM5	-0.268171198
ssp585	2026	CanESM5	0.292465713
ssp585	2027	CanESM5	0.590855541
ssp585	2028	CanESM5	0.010009531
ssp585	2029	CanESM5	0.678274592
ssp585	2030	CanESM5	0.453082523
ssp585	2031	CanESM5	0.668177832
ssp585	2032	CanESM5	0.219133739
ssp585	2033	CanESM5	1.303837581
ssp585	2034	CanESM5	0.659592632
ssp585	2035	CanESM5	0.236358546
ssp585	2036	CanESM5	0.657501065

cmip6_vietnam

C2: 0.39913298273376

Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1
2	-9.32439E-05	0.399133	0	
3	-0.000113394	0.0862626	0	
4	-0.000169421	0.2398503	0	
5	-0.000210062	0.1739978	0	
6	-0.000307529	0.4172982	0	
7	-0.000244899	-0.268171	0	
8	-0.000313207	0.2924657	0	
9	-0.000451196	0.5908555	0	
10	-0.000453533	0.0100095	0	
11	-0.000611915	0.6782746	0	
12	-0.000717696	0.4530825	0	
13	-0.000873678	0.6681778	0	
14	-0.000924825	0.2191337	0	
15	-0.001229133	1.3038376	0	
16	-0.00138303	0.6595926	0	
17	-0.001438168	0.2363585	0	

Task 18: Create SSP585FGOALSg3



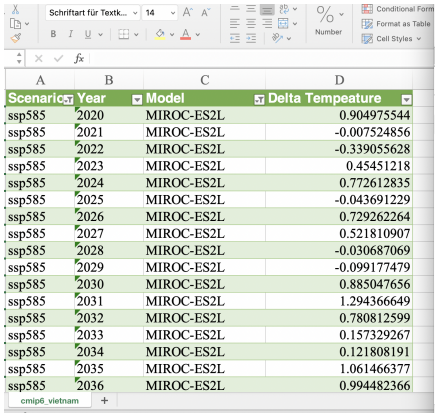
	A	B	C	D
1	Scenario	Year	Model	Delta Tempeature
168	ssp585	2020	FGOALS-g3	-0.032170926
221	ssp585	2021	FGOALS-g3	0.340085669
246	ssp585	2022	FGOALS-g3	0.642471881
309	ssp585	2023	FGOALS-g3	0.23419155
333	ssp585	2024	FGOALS-g3	-0.63683458
348	ssp585	2025	FGOALS-g3	0.743533761
400	ssp585	2026	FGOALS-g3	0.72121949
450	ssp585	2027	FGOALS-g3	-0.523709934
476	ssp585	2028	FGOALS-g3	0.592639564
516	ssp585	2029	FGOALS-g3	0.627406581
561	ssp585	2030	FGOALS-g3	0.439137305
604	ssp585	2031	FGOALS-g3	0.722095925
631	ssp585	2032	FGOALS-g3	0.60987275
667	ssp585	2033	FGOALS-g3	0.107967206
716	ssp585	2034	FGOALS-g3	0.273300475
738	ssp585	2035	FGOALS-g3	0.525924151
778	ssp585	2036	FGOALS-g3	0.82331139

cmip6_vietnam

C2: -0.032170926390415 1

	A	B	C	D	E
1	Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_1_1
2	2	7.5E-06	-0.032171	0	0
3	3	-7.2E-05	0.340086	0	0
4	4	-0.00022	0.642472	0	0
5	5	-0.00028	0.234192	0	0
6	6	-0.00013	-0.636835	0	0
7	7	-0.0003	0.743534	0	0
8	8	-0.00047	0.721219	0	0
9	9	-0.00035	-0.52371	0	0
10	10	-0.00049	0.59264	0	0
11	11	-0.00063	0.627407	0	0
12	12	-0.00074	0.439137	0	0
13	13	-0.0009	0.722096	0	0
14	14	-0.00105	0.609873	0	0
15	15	-0.00107	0.107967	0	0
16	16	-0.00114	0.2733	0	0
17	17	-0.00126	0.525924	0	0

Task 18: Create SSP585MIROCES2L



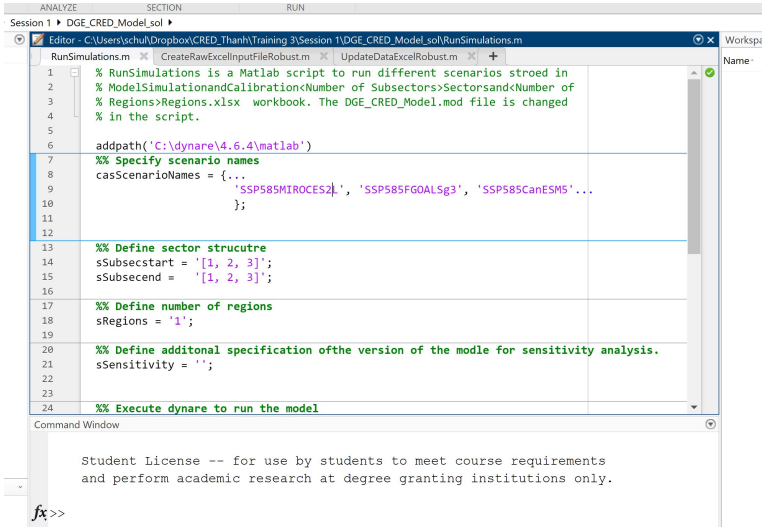
Scenario	Year	Model	Delta Tempeature
ssp585	2020	MIROC-ES2L	0.904975544
ssp585	2021	MIROC-ES2L	-0.007524856
ssp585	2022	MIROC-ES2L	-0.339055628
ssp585	2023	MIROC-ES2L	0.45451218
ssp585	2024	MIROC-ES2L	0.772612835
ssp585	2025	MIROC-ES2L	-0.043691229
ssp585	2026	MIROC-ES2L	0.729262264
ssp585	2027	MIROC-ES2L	0.521810907
ssp585	2028	MIROC-ES2L	-0.030687069
ssp585	2029	MIROC-ES2L	-0.099177479
ssp585	2030	MIROC-ES2L	0.885047656
ssp585	2031	MIROC-ES2L	1.294366649
ssp585	2032	MIROC-ES2L	0.780812599
ssp585	2033	MIROC-ES2L	0.157329267
ssp585	2034	MIROC-ES2L	0.121808191
ssp585	2035	MIROC-ES2L	1.061466377
ssp585	2036	MIROC-ES2L	0.994482366

cmip6_vietnam

C2: 0.904975544028982

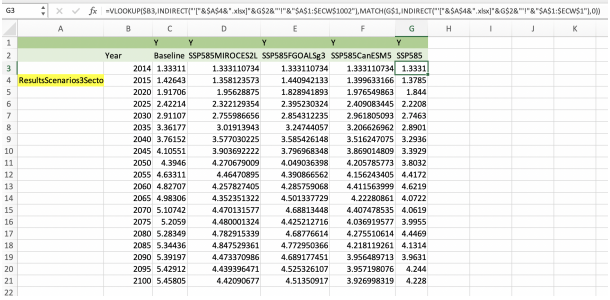
Time	exo_PoP	exo_tas_1	exo_SL	exo_GA_
2	-0.000211417	0.904976	0	
3	-0.000209659	-0.007525	0	
4	-0.000130467	-0.339056	0	
5	-0.000236635	0.454512	0	
6	-0.000417085	0.772613	0	
7	-0.000406883	-0.043691	0	
8	-0.000577179	0.729262	0	
9	-0.00069901	0.521811	0	
10	-0.000691846	-0.030687	0	
11	-0.000668693	-0.099177	0	
12	-0.000875312	0.885048	0	
13	-0.001177425	1.294367	0	
14	-0.001359615	0.780813	0	
15	-0.001396318	0.157329	0	
16	-0.001424734	0.121808	0	

Task 18: RunSimulation.m



Task 18: Figure (I)

- Copy the previous sheet in the Figure.xlsx file.
- Change the names of scenarios in row 2 and create a line plot.
- It is clear that quantitative results are susceptible to the respective climate scenario.



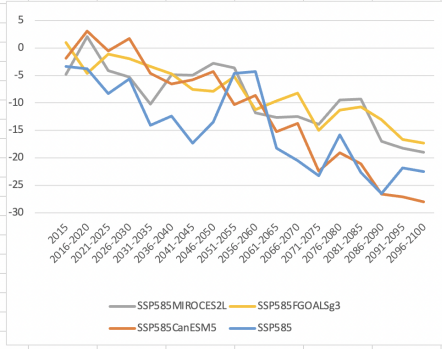
G3 =VLOOKUP($B3,INDIRECT("'["&$A$4&".xlsx]"&G$2&"'!"&"$A$1:$ECW$1002"),MATCH(G$1,INDIRECT("'["&$A$4&".xlsx]"&G$2&"'!"&"$A$1:$ECW$1"),0))

	A	B	C	D	E	F	G	H	I	J	K
1			Y	Y	Y	Y	Y				
2		Year	Baseline	SSP585MIROCES2L	SSP585FGOALSg3	SSP585CanESM5	SSP585				
3		2014	1.33311	1.333110734	1.333110734	1.333110734	1.3331				
4	ResultsScenarios3Secto	2015	1.42643	1.358123573	1.440942133	1.399633166	1.3785				
5		2020	1.91706	1.95628875	1.828941893	1.976549863	1.844				
6		2025	2.42214	2.322129354	2.395230324	2.409083445	2.2208				
7		2030	2.91107	2.755986656	2.854312235	2.961805093	2.7463				
8		2035	3.36177	3.01911943	3.24744057	3.206626962	2.8901				
9		2040	3.76152	3.577030225	3.585426148	3.516247075	3.2936				
10		2045	4.10551	3.903692222	3.796968348	3.869014809	3.3929				
11		2050	4.3946	4.270679009	4.049036398	4.205785773	3.8032				
12		2055	4.63311	4.46470895	4.390866562	4.156243405	4.4172				
13		2060	4.82707	4.257827405	4.285759068	4.411563999	4.6219				
14		2065	4.98306	4.352351322	4.501337729	4.22280861	4.0722				
15		2070	5.10742	4.470131577	4.68813448	4.407478535	4.0619				
16		2075	5.2059	4.480001324	4.425212716	4.036919577	3.9955				
17		2080	5.28349	4.782915339	4.68776614	4.275510614	4.4469				
18		2085	5.34436	4.847529361	4.772950366	4.218119261	4.1314				
19		2090	5.39197	4.473370986	4.689177451	3.956489713	3.9631				
20		2095	5.42912	4.439396471	4.525326107	3.957198076	4.244				
21		2100	5.45805	4.42090677	4.51350917	3.926998317	4.228				
22											

Task 18: Figure (II)

fx =(D4/$C4-1)*100

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
			SSP585MIROCES2L	SSP585FGOALSg3	SSP585CanESM5	SSP585								
	2015		-4.7887691	1.017224658	-1.878739738	-3.3617								
	2016-2020		2.046308923	-4.596512446	3.103193691	-3.8086								
	2021-2025		-4.129141102	-1.111112543	-0.539175987	-8.313								
	2026-2030		-5.327241257	-1.949592891	1.74296685	-5.66								
	2031-2035		-10.19185751	-3.400749702	-4.614802407	-14.03								
	2036-2040		-4.904581397	-4.681375602	-6.520502611	-12.439								
	2041-2045		-4.915791607	-7.515319063	-5.760446936	-17.357								
	2046-2050		-2.819862376	-7.86338341	-4.296520687	-13.457								
	2051-2055		-3.634650356	-5.228449099	-10.29250655	-4.6596								
	2056-2060		-11.79271541	-11.21406908	-8.607831138	-4.2503								
	2061-2065		-12.65701431	-9.667155138	-15.25667744	-18.279								
	2066-2070		-12.47770387	-8.209347493	-13.70441007	-20.47								
	2071-2075		-13.94384148	-14.99627358	-22.45498028	-23.25								
	2076-2080		-9.474294091	-11.27517238	-19.07788681	-15.835								
	2081-2085		-9.296377418	-10.69184808	-21.07346465	-22.697								
	2086-2090		-17.03646931	-13.03410366	-26.62259473	-26.499								
	2091-2095		-18.22992978	-16.64717582	-27.11163181	-21.829								
	2096-2100		-19.00211781	-17.30549795	-28.05128818	-22.536								

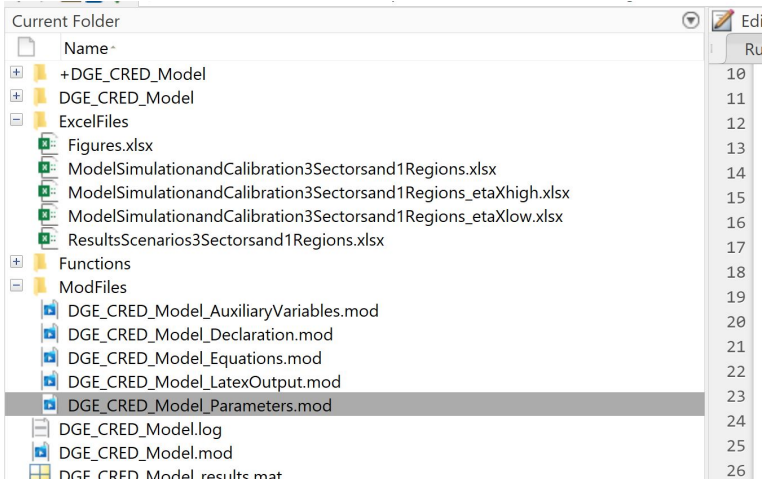


Task 19: Sensitivity Analysis SSP 585 effect for export price elasticity.

- Analyse the role of η^X for the simulation results. $X_{s,t} = D_s^X \left(\frac{P_{s,t}^D}{P_{s,t}^M} \right)^{-\eta^X}$
- What do you think will be the impact of an increase in η^X or decrease in η^X?
- Copy the ModelSimulationandCalibration3Sectorsand1Regions.xlsx file two times.
- Rename the copies into ModelSimulationandCalibration3Sectorsand1Regions_etaXhigh.xlsx and ModelSimulationandCalibration3Sectorsand1Regions_etaXlow.xlsx
- Change the value of etaX_p to 1.5 and 0.3 for high and low, respectively. The parameter is listed in the StructuralParameters sheet (row 11 column B).
- Execute the RunSimulation.m file. You need to change the sSensitivity in line 21 to _etaXhigh and _etaXlow. Further, you need to first run the Baseline scenario.

Task 19: Sensitivity Analysis SSP 585 effect for export price elasticity.

- Make sure the newly created files are in the right subfolder.



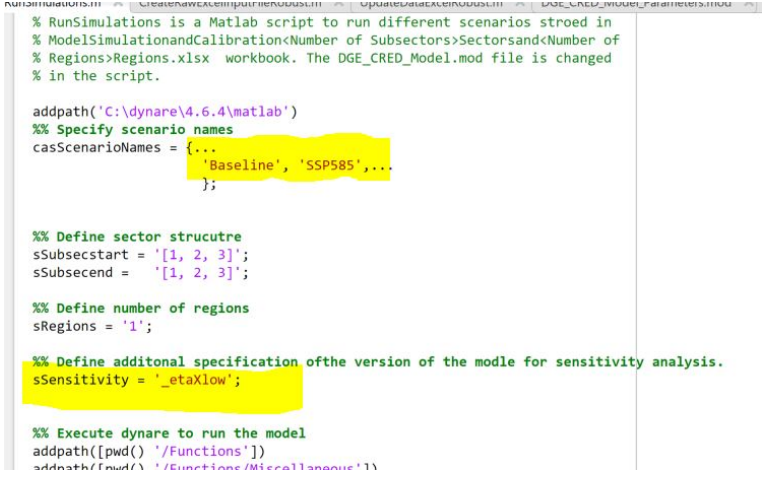
Task 19: Sensitivity Analysis SSP 585 effect for export price elasticity.

- set the value for etaX_p in the sheet Structural Parameters in cell B11 to 1.5 and 0.3, respectively.

	A	B	
1	Parameter	Value	Description
2	beta_p	0.9606	discount factor
3	delta_p	0.045	depreciation rate
4	sH_p	0.01	share of investments in residential h
5	phiB_p	10	foreign bond adjustment cost
6	phiK_p	10	investment adjustment cost
7	sigmaL_p	0.5	inverse Frisch elasticity
8	sigmaC_p	1	intertemporal elasticity of substituti
9	etaQ_p	0.01	elasticity of substitution between se
10	etaF_p	1.83	elasticity of substitution between im
11	etaX_p	1.5	supply price elasticity of exports
12	tauC_p	0.2	consumption tax rate
13	tauNH_p	0	tax rate on labour income
14	tauKH_p	0	tax rate on capital income
15	phiM_p	0.3	share of imports on total used dome

Task 19: RunSimulation.m

- Set the value for sSensitivity to _etaXlow and _etaXhigh.
- Make sure to always run Baseline and the SSP 585 scenario.



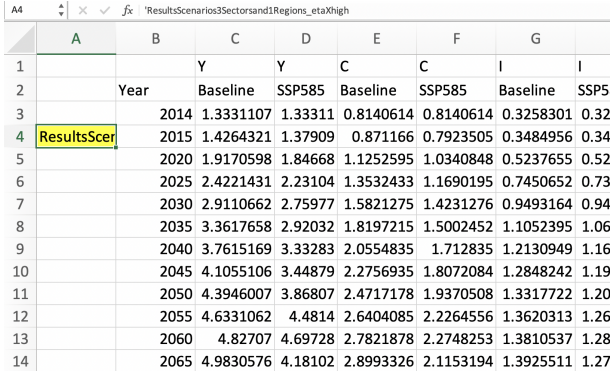
```
% RunSimulations is a Matlab script to run different scenarios stroed in
% ModelSimulationandCalibration<Number of Subsectors>Sectorsand<Number of
% Regions>Regions.xlsx  workbook. The DGE_CRED_Model.mod file is changed
% in the script.

addpath('C:\dynare\4.6.4\matlab')
%% Specify scenario names
casScenarioNames = {...
                    'Baseline', 'SSP585',...
                    };


%% Define sector strucutre
sSubsecstart = '[1, 2, 3]';
sSubsecend =   '[1, 2, 3]';

%% Define number of regions
sRegions = '1';

%% Define additonal specification ofthe version of the modle for sensitivity analysis.
sSensitivity = '_etaXlow';


%% Execute dynare to run the model
addpath([pwd() '/Functions'])
addpath([pwd() '/Functions/Miscellaneous'])
```

Task 20: Create GDP component plots to identify the sensitivity of GDP effects on etaX_p.

- Illustrate the differences between GDP, consumption, investment and net exports in the Baseline and the SSP 585 scenario with high and low supply price elasticity of exports (etaX_p).
- Are net exports higher or lower with an increase in etaX_p?

Task 20: Copy the sheet GDP in Figures.xlsx.

- Rename the file you refer to in A4 plots to ResultsScenarios3Sectorsand1Regions_etaXhigh and ResultsScenarios3Sectorsand1Regions_etaXlow.

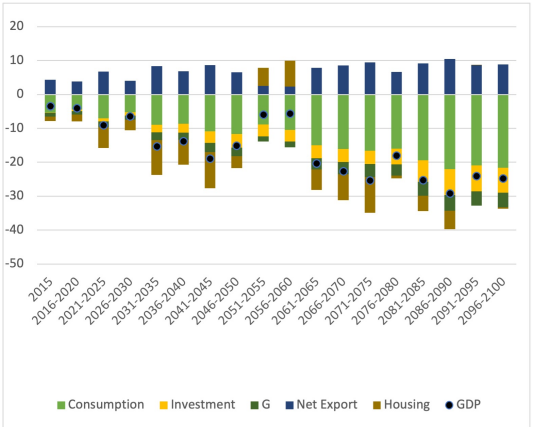


A4 | 'ResultsScenarios3Sectorsand1Regions_etaXhigh

	A	B	C	D	E	F	G	
1			Y	Y	C	C	I	I
2		Year	Baseline	SSP585	Baseline	SSP585	Baseline	SSP5
3		2014	1.3331107	1.33311	0.8140614	0.8140614	0.3258301	0.32
4	ResultsScer	2015	1.4264321	1.37909	0.871166	0.7923505	0.3484956	0.34
5		2020	1.9170598	1.84668	1.1252595	1.0340848	0.5237655	0.52
6		2025	2.4221431	2.23104	1.3532433	1.1690195	0.7450652	0.73
7		2030	2.9110662	2.75977	1.5821275	1.4231276	0.9493164	0.94
8		2035	3.3617658	2.92032	1.8197215	1.5002452	1.1052395	1.06
9		2040	3.7615169	3.33283	2.0554835	1.712835	1.2130949	1.16
10		2045	4.1055106	3.44879	2.2756935	1.8072084	1.2848242	1.19
11		2050	4.3946007	3.86807	2.4717178	1.9370508	1.3317722	1.20
12		2055	4.6331062	4.4814	2.6404085	2.2264556	1.3620313	1.26
13		2060	4.82707	4.69728	2.7821878	2.2748253	1.3810537	1.28
14		2065	4.9830576	4.18102	2.8993326	2.1153194	1.3925511	1.27

Task 20: ResultsScenarios3Sectorsand1Regions_etaXlow

- For a low value of etaX_p = 0.3, we observe a decline in GDP by 25 percent.
- Net exports only increased by 9 percent at the end of the century.



Task 20: ResultsScenarios3Sectorsand1Regions_etaXhigh

- For a high value of etaX_p = 1.5, we observe a decline in GDP by 19 percent.
- Net exports only increased by 14 percent at the end of the century.